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SEARCH STRATEGY

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Flavored Tobacco Sales Prohibition (2009) and Noncigarette Tobacco Products in Retail Stores (2017), New York City

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ABSTRACT (ENGLISH)

Objectives. To assess explicit- (products clearly labeled flavored) and emergent concept- (products implying flavoring but not clearly labeled) flavored tobacco product availability following New York City's flavor restriction. Methods. We examined explicit- and concept-flavored tobacco product availability, with 2017 New York City Retailer Advertising of Tobacco Survey data (n = 1557 retailers). We assessed associations between block group-level demographic characteristics and product availability by using logistic regression. Results. Most retailers sold explicit-flavored (70.9%) or concept-flavored (69.3%) products. The proportion of non-Hispanic Black neighborhood residents predicted explicit- and concept-flavored product availability, as did having a high school within a retailer's block group for concept-flavored products. Conclusions. Explicit- and concept-flavored other tobacco products persisted throughout New York City, despite 2009 legislation restricting sales. Public Health Implications. Making local sales restrictions or federal production bans inclusive of all explicit and concept flavors would reduce retailer and industry evasion opportunities and protect the health of youths and others.

FULL TEXT

Headnote

Objectives. To assess explicit- (products clearly labeled flavored) and emergent concept- (products implying flavoring but not clearly labeled) flavored tobacco product availability following New York City's flavor restriction. Methods. We examined explicit- and concept-flavored tobacco product availability, with 2017 New York City Retailer Advertising of Tobacco Survey data (n = 1557 retailers). We assessed associations between block group-level demographic characteristics and product availability by using logistic regression.

Results. Most retailers sold explicit-flavored (70.9%) or concept-flavored (69.3%) products. The proportion of non-Hispanic Black neighborhood residents predicted explicit- and concept-flavored product availability, as did having a high school within a retailer's block group for concept-flavored products.

Conclusions. Explicit- and concept-flavored other tobacco products persisted throughout New York City, despite 2009 legislation restricting sales.

Public Health Implications. Making local sales restrictions or federal production bans inclusive of all explicit and concept flavors would reduce retailer and industry evasion opportunities and protect the health of youths and others.

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Flavored tobacco products are associated with youth smoking initiation and continued tobacco use.1 Recent evidence has also demonstrated that flavored tobacco products are popular with young adults, women, and Black smokers.2,3 Flavored cigars are particularly popular with youths and young adults, and the most commonly smoked type are cigarillos, which are generally shorter and narrower than larger cigars, usually do not include a filter, and feature a plastic or wooden tip.2,4,5

Federal, state, and local jurisdictions have taken legislative action to reduce youth access to these products. As part of the Family Smoking Prevention and Tobacco Control Act, in September 2009, Congress prohibited the production of flavored cigarettes, excluding menthol.6 In October 2009, New York City followed suit by prohibiting the sale ofnonmenthol flavored tobacco products other than cigarettes, excluding electronic cigarettes.6,7 Subsequently, jurisdictions across the country have passed various laws restricting sales of flavored tobacco products, including Providence, Rhode Island; Minneapolis, Minnesota; Chicago, Illinois; Boston, Massachusetts, and other Massachusetts towns; Oakland, Santa Clara, and San Francisco, California; and the state of Maine.8

Evaluations of restrictions on flavored cigarettes and other tobacco products (OTPs) have demonstrated effectiveness across several metrics, including low numbers of recorded violations from inspection data, declines in the sales of flavored products from retail sales data, and declines in self-reported use of flavored or any tobacco products from youth surveys.9-13 Yet the retail tobacco landscape remains rife with flavored products, despite laws prohibiting them.12,14-17 While some products are explicitly labeled as flavored, such as "vanilla," "strawberry," and "piña colada," an increasing variety of products are ambiguously named to imply product flavoring, including "ba-boom," "purple," and "tropical sunset."12,14-17 These "concept flavors" have established a foothold in the retail market.12,14-17 Chemical testing has shown that these concept-flavored products contain concentrations of chemical flavoring similar to those measured in explicit-flavored products.16

New York City's law restricting the sale of flavored OTPs has been enforced since November 2010. The city's enforcement protocol is focused on manufacturer statements, which are typically a label, name, or image on a product.18 For example, a cigar with a label that says "chocolate" is presumed to be flavored. Alternatively, if a cigar bears a picture of a blueberry, it is presumed to be flavored regardless ofthe text on the product. Early New York City evaluation findings drawn from retail store sales data through 2012 and January 2014 demonstrated significant declines in sales of flavored OTPs after implementation of the flavor law.9,13 Bodegas or corner stores, despite comprising more than half of New York City tobacco retailers, were excluded from these evaluations because of lack of retail sales data.9,13 The current analysis used data from the 2017 New York City Retailer Advertising of Tobacco Survey (RATS) to examine availability ofboth explicit- and concept-flavored OTPs, particularly large cigars and cigarillos, and neighborhood-level demographic predictors of flavored product availability. In this study, we used more recent data and expanded previous analyses to include conceptflavored OTPs.

METHODS

RATS is a point-of-sale advertising study to assess the tobacco retail environment and retailer compliance with tobacco-control policies in a cross-sectional sample oflicensed tobacco retailers citywide. As described in detail by Watson et al., a statewide version of this study was developed by RTI International and has been conducted annually from 2004 to 2015, with the exception of2013.19 Retailer types were defined as convenience (including those at gas stations), pharmacy, large grocery, small grocery, mass merchandizer, tobacco shop, or other. Small grocery stores included delicatessens and bodegas (corner stores) that often have a deli counter or hot food bar, while convenience stores sold a more limited line of food products (e.g., no raw meat), and included popular chains, such as 7-Eleven.

Sample

The 2015 New York State RATS included an oversample of New York City stores and stratified sampling by retailer type and geographic regions defined as the 5 boroughs that comprise New York City (Bronx, Brooklyn, Manhattan, Queens, and Staten Island; each borough corresponds to a county) and a single stratum for the rest of the state. In 2015, completed assessments were conducted for 79% of sampled retailers, resulting in data from 1745 retailers in New York City and 489 retailers from the rest of the state. The 2017 New York City RATS resurveyed New York City retailers with completed assessments in the 2015 RATS, with the goal ofassessing at least 300 retailers from each of the 5 boroughs. To achieve this, a minimum of 330 retailers were selected per borough from the 2015 sample; no retailers from outside ofNew York City were sampled in 2017. When the minimum number of retailers was not achieved from the matched 2015 sample, additional licensed tobacco retailers were randomly selected by borough (206 additional retailers total).

RATS data were collected with an audit instrument designed to assess availability of specific tobacco products and flavors, presence of interior and exterior point-of-sale advertising or price promotions for specific products, and compliance with tobaccocontrol policies, including cigarette price floors and the presence ofsignage stating the minimum legal cigarette purchase age. All survey items regarding concept- and explicitflavored products were collected for the first time in 2017. Professional data collectors were staffed from a professional data collection agency, and all underwent intensive, multiday training conducted by RTI, which included both classroom learning modules covering definitions and images of products and field training to gain practice identifying products in real-world settings and to standardize categorizations across data collectors.

Explicit-flavored tobacco products were defined as those that used pictures or description to invoke a smell or taste (e.g., products such as Swisher Sweets Grape and Zig Zag Peach). Concept-flavored products were defined as having ambiguous descriptors that did not invoke any particular smell or taste (e.g., jazz, blue, fusion, blue ocean mist), but have been established in the literature as conveying and containing flavors.12,14-17 Availability (yes or no) of each flavor category was recorded separately for specific tobacco products, including little cigars, large cigars or cigarillos (LaCCs), smokeless tobacco, shisha, e-cigarettes, and e-liquid.

Between June and August 2017, trained data collectors visited 1683 sampled retailers in New York City. A single data collector visited each retailer, and store owners and managers were not informed in advance of surveyors' visits. Assessments were completed for 1562 (92.8%) retailers, including 1375 that had been included in the 2015 cycle. Of the 121 retailers without completed assessments, nearly half (46%) were closed at the time that the data collector visited and approximately 30% did not sell tobacco. During 11 visits (9%), the store owner or manager asked the data collector to leave before any data were collected, and in another 11 instances (9%), the data collector noted that the store did not exist.

Retailer addresses were geocoded and linked to demographic characteristics from the 2012-2016 American Community Survey 5-year Summary File. For each retailer, we assessed the following demographic variables at the Census block group level: proportion of youths (aged <18 years), proportion of Hispanic residents (any race), proportion of non-Hispanic Black residents, and proportion of non-Hispanic Asian residents. We assessed proportion of residents below poverty thresholds, based on family income relative to family size and composition, at the census tract level, the smallest geographic unit for which information was available. Using New York City Department of City Planning's Facilities Explorer tool, we obtained and geocoded addresses of all city schools to determine the number of high schools in each retailer's block group; when multiple schools were colocated at a single address, they were considered 1 school. The minimum age to purchase tobacco in New York City was raised to 21 years in 2014; thus, we did not consider elementary or middle schools, as we hypothesized that these students were unlikely to be able to purchase tobacco autonomously.20 We excluded 2 retailers because their addresses were recorded too ambiguously to be geocoded. We excluded 3 additional retailers because they were located in block groups listed as having zero population in the American Community Survey.

Statistical Analysis

We examined bivariable associations between availability of explicit- and conceptflavored products separately, with block group-level demographic characteristics, using the C test to assess statistical significance at the a level of .05. The distributions of some neighborhood demographics were nonnormal (e.g., for proportion of Black residents: mean = 21.9%; median = 7.8%); therefore, neighborhood demographics are presented as quartiles. We dichotomized presence of a high school within a retailer's block group (any vs none). We estimated adjusted prevalence ratios (PRs) and 95% confidence intervals (CIs) for flavored product availability from logistic regression models by using the PREDMARG statement in SUDAAN's RLOGIST procedure. Models included presence of high school within a retailer's block group and all neighborhood demographic characteristics (in quartiles). In addition to models for any flavored product availability, we fit models for availability of explicit- and concept-flavored LaCCs as the outcomes.

We conducted analyses in SAS version 9.4 (SAS Institute, Cary, NC) and SAS-callable SUDAAN version 11.0.1 (Research Triangle Institute, Raleigh, NC). We used sampling weights calculated as the inverse probability of

selection within borough, with adjustment for eligibility, nonresponse, and borough population, in all analyses.

RESULTS

We included a total of 1557 tobacco retailers in main analyses, the majority ofwhich were small grocery stores or bodegas (n = 1044; 67.1%) or convenience or gas station stores (n = 270; 17.3%). There was little clustering of stores within block groups; approximately 80% of the 1209 block groups in our analysis contained a single retailer (mean = 1.29).

The proportions of retailers selling at least 1 explicit- or concept-flavored tobacco product were 70.9% and 69.3%, respectively (Table 1). Explicit- and concept-flavored LaCCs were available in a majority ofretailers (58.4% and 62.5%, respectively). Conversely, explicit- and concept-flavored little cigars (3.5% and 2.8%, respectively) and shisha (5.1% and 2.4%, respectively) were only available in a small proportion of retailers. While not considered a tobacco product in New York City, explicit-flavored ecigarettes were available in 35.7% of stores and concept-flavored e-cigarettes were available in 20.0% of stores.

In bivariable analyses, explicit-flavored product availability was associated with the proportion of Black residents in a retailer's neighborhood (e.g., top quartile = 80.1% vs bottom quartile = 63.5%; P< .001; Table 2). We observed significant associations between availability of concept-flavored tobacco products and proportion of residents aged younger than 18 years (e.g., top quartile = 73.8% vs bottom quartile = 62.7%; P = .01), proportion of Black residents (e.g., top quartile = 81.3% vs bottom quartile = 56.0%; P< .001), proportion of Asian residents (e.g., top quartile = 62.5% vs bottom quartile = 76.3%; P< .001), and presence of a high school in retailer's block group (no: 67.9% vs yes: 81.0%; P= .002).

In multivariable models, the proportion of Black residents in a retailer's block group was positively associated with availability of any explicit-flavored product (PR comparing top vs bottom quartile = 1.28; 95% CI = 1.14, 1.44; Table 3). Though not statistically significant, there was some evidence that availability of explicit-flavored products was higher in locations with more Hispanic residents (PR comparing top vs bottom quartile =1.12; 95% CI = 0.97, 1.29) and in retailers with at least 1 high school in their block group relative to those without (PR= 1.08; 95% CI = 0.98, 1.20). The proportion of Black residents was also a significant predictor of concept-flavored product availability (PR comparing top vs bottom quartile = 1.37; 95% CI = 1.19, 1.57). Retailers sharing a block group with at least 1 high school were also more likely to sell concept-flavored products than were retailers with no high schools in their block group (PR= 1.16; 95% CI= 1.05, 1.28). Results were largely unchanged when restricted to convenience stores (including those at gas stations) and small grocery stores or bodegas (n = 1334), though the association between concept-flavored product availability and high school proximity was attenuated (PR= 1.05; 95% CI = 0.95, 1.18; data not shown).

In multivariable analyses of LaCC availability specifically, the proportions of Black and Hispanic residents were positively associated with explicit-flavored LaCC availability (PR comparing top vs bottom quartile for proportion of Black residents = 1.50; 95% CI = 1.29, 1.74; for proportion of Hispanic residents PR = 1.22; 95% CI = 1.02, 1.46). Proportion of Black residents was also associated with concept-flavored LaCCs (PR comparing top vs bottom quartile = 1.46; 95% CI = 1.26, 1.70); there was also evidence that proportion of residents aged younger than 18 years was associated with availability of these products (PR comparing top vs bottom quartile = 1.16; 95% CI = 0.995, 1.35). Presence of a nearby high school was also associated with flavored LaCC availability (explicit-flavored LaCCs PR = 1.17; 95% CI = 1.02, 1.33; conceptflavored LaCCs PR =1.13; 95% CI = 1.005, 1.280).

DISCUSSION

Availability of explicit-flavored tobacco products persisted at tobacco retailers throughout New York City, despite local legislation restricting their sale. These compliance issues were in line with findings from other jurisdictions. An evaluation of Chicago's restriction on menthol cigarette sales within 500 feet ofschools demonstrated 57% compliance with the law.21

There may be multiple reasons why the initial New York City evaluations showed reductions of flavored OTP sales while the current study showed widespread retail store availability of explicit- and concept-flavored tobacco.9,13 Only 4% of tobacco retailer inspections conducted by the New York City Department of Consumer Affairs at all New

York City stores between 2010 and 2014 received a violation for selling explicitflavored products, suggesting limited availability ofthese products in New York City at that time.9 However, the literature has demonstrated an increase in the availability of concept-flavored products over time and a concomitant rise in the availability of explicit-flavored products, including in New York City.9,12-17 The more ambiguous concept-flavored products limit the ability of New York City inspectors to issue violations for these products. More education is needed to remind retailers which products are prohibited under the New York City flavored OTP sales law and of retailers' responsibility to adhere to this law. Alternatively, our findings may suggest willful noncompliance by retailers, or a combination of these 2 factors.

Concept flavors were not prevalent when New York City initially implemented the law prohibiting the sale of flavored OTPs, but rather have emerged over time as a likely result of industry response to local sales restrictions on explicit-flavored OTPs and recognition of the marketability of concept-flavored products.14,15,17 The availability of concept-flavored products presents a loophole for wholesalers who operate in New York City and surrounding areas.22 Approximately 120 wholesale dealers are licensed by New York City (New York City Administrative Code §11 - 1303) to supply tobacco products to more than 8000 New York City tobacco retail outlets, and each wholesaler must also have a New York State tobacco wholesale license (NY Tax Law §480).22 Dozens of these wholesalers are located outside of New York City and presumably supply tobacco products to retailers in other jurisdictions that do not have restrictions on flavored tobacco product sales. This incentivizes wholesalers to stock concept- and explicit-flavored tobacco products and creates availability of these products for New York City retailers. Once wholesalers possess concept-flavored tobacco products, they have a motive to sell them to New York City retailers. Although it is illegal for retailers to sell concept-flavored tobacco products, both retailers and inspectors may be challenged by ambiguity inherent in concept-flavored product names, which can further undermine compliance with the law.

LaCCs were more likely to be available as explicit- or concept-flavored products compared with other noncigarette tobacco products, including shisha, smokeless tobacco, and little cigars. LaCCs are often cheaper than cigarettes, encourage initiation and regular smoking, are marketed to youths and in neighborhoods with more Black residents, and are also often used to roll marijuana blunts.1,2,23 25 Trends in smoking habits among New York City high-school students have shifted over time, with declines in current cigarette use concurrent with increases in cigar use. 26

Our findings that explicit- and conceptflavored products-particularly LaCCs- were more widely available in neighborhoods with higher proportions of Black and Hispanic residents and with high schools, were not surprising. These findings parallel information from studies of tobacco industry documents that identify flavored tobacco products as a mechanism for targeting youths, as well as a national study showing that most tobacco retailers sold flavored cigars, and the odds of selling flavored cigars were more than twice as high in neighborhoods with more Black residents.27,28 Most New Yorkers live in racially segregated neighborhoods, which enables targeted marketing to specific racial/ethnic groups, including vulnerable populations.29,30 Targeted marketing of health-harming substances, like tobacco, has been established in the literature as one pathway by which racism harms health.27,29 32 Persistent and multipronged efforts are needed to eliminate the disparities accumulating from these historical patterns.27,29-32 New York City has been working toward this goal through multipronged efforts that include policy change and education. Multiple laws have been enacted to reduce the availability of cheap tobacco in all communities, including laws that raise prices of tobacco products and prohibit tobacco product discounts.32 New York City has also conducted educational campaigns and interventions to reach populations adversely impacted by targeted marketing and availability, with a focus on communities of color.32,33 These include hard-hitting media campaigns such as "Marie" and "Beth" that highlight the lasting health consequences of smoking and efforts to develop culturally appropriate cessation . . . •32-34 support strategies.

Limitations

This study does have limitations. We were unable to assess changes over time because availability of explicit- and conceptflavored tobacco products was first assessed in 2017. Data from New York City tobacco retailers may not be generalizable to other regions or nationally. The majority of tobacco retailers in New York City are bodegas, which

may differ from the distribution of tobacco retailers in other jurisdictions. Data collected were observational, based on presence of items at the retailer the day they were surveyed; data do not represent volume of sales or length of time products remain on shelves. In addition, we did not collect formal reliability statistics for items on the 2017 RATS audit instrument, so we were unable to quantify the consistency in observations made by our data collectors. However, our professional data collectors underwent rigorous training, which included examples of several common flavored products. Lastly, while analyses were conducted at the block group level, because of high retailer density and ease of travel, purchasing may occur across block groups.

Public Health Implications

Given tobacco industry efforts to circumvent flavor regulations through concept flavors,14-17 broader adoption by more jurisdictions of prohibitions on sales of flavored tobacco products would be valuable. Although local sales policies can achieve some success, retailers receive flavored OTPs from wholesalers, who typically do business in a range of jurisdictions, potentially including localities that do not have restrictions on sales of flavored tobacco. If the legal market for flavored tobacco products becomes smaller, the supply is also likely to diminish.

In addition, efforts to educate retailers about concept-flavored products could be initiated or expanded to improve compliance with policies. Moreover, local legislation may address concept flavors more effectively ifthe burden of proof is shifted to manufacturers who would be required to certify-with a protocol for enforcement oversight-that specific tobacco products are not flavored as a condition for selling them in a given jurisdiction. This would shift the enforcement burden from local agencies to manufacturers, who are more aware of their products' characteristics.

A federal manufacturing ban-which appears to be a US Food and Drug Administration (FDA) priority-would be sweeping and most impactful.35 The FDA could expand the ban on manufacture offlavored cigarettes to include flavored OTPs, and it could broaden the ban on flavors by eliminating the exception for menthol. Only the FDA can enact a law this strong; local jurisdictions do not have the authority to regulate ingredients in tobacco products. While the federal flavored cigarette ban led to declines in cigarette use, it appears to have encouraged substitution with menthol cigarettes, cigars, and pipes.11 An expanded law has the potential to substantially decrease youth and future adult smoking prevalence as the majority of youths and young adults initiate with flavored tobacco products.1

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CONTRIBUTORS

The study was designed by S. M. Farley, J. Sisti, and J. Jasek. The analyses were conducted by J. Sisti. AH authors drafted, edited, and reviewed the article.

CONFLICTS OF INTEREST

The authors have no conflict of interest to declare.

HUMAN PARTICIPANT PROTECTION

Institutional review board approval was not needed as this study did not meet the definition of human participant research.

Sidebar

Correspondence should be sent to Shannon M. Farley, 42-09 28th St, CN-46, LIC, NY 11101 (e-mail: shannonfarley@ gmail.com). Reprints can be ordered at http://www.ajph.org by clicking the "Reprints" link.

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References

REFERENCES

1. Villanti AC, Johnson AL, Ambrose BK, et al. Flavored tobacco product use in youth and adults: findings from the first wave of the PATH study (2013-2014). Am J Prev Med. 2017;53(2):139-151.

2. Delnevo CD, Giovenco DP, Ambrose BK, Corey CG, Conway KP. Preference for flavoured cigar brands among youth, young adults and adults in the USA. Tob Control. 2015;24(4):389-394.

3. Feirman SP, Lock D, Cohen JE, Holtgrave DR, Li T. Flavored tobacco products in the United States: a systematic review assessing use and attitudes. Nicotine Tob Res. 2016;18(5):739-749.

4. Corey CG, King BA, Coleman BN, et al. Little filtered cigar, cigarillo, and premium cigar smoking among adults-United States, 2012-2013. MMWR Morb Mortal Wkly Rep. 2014;63(30):650-654.
5. Centers for Disease Control and Prevention. Smoking and tobacco use. Cigars. Available at: http://www.cdc.gov/tobacco/data_statistics/fact_sheets/tobacco_industry/ cigars. Accessed April 27, 2018.
6. GPO Family Smoking Prevention and Tobacco Control Act, Pub L 111-31. Available at: http://www.gpo.gov/fdsys/pkg/PLAW-111publ31/pdf/PLAW111publ31.pdf Accessed November 8, 2015.
7. A local law to amend the New York City charter and the administrative code of the city of New York, in relation to the regulation of tobacco products. October 28, 2009. Int 0433-2006. New York City Administrative Code, Title 17. Health. Chapter 7. Regulation of tobacco products. Available at: https://www1.nyc.gov/assets/dca/downloads/pdf/about/ retail_cigarette_dealer_law_rules.pdf. Accessed November 20, 2016.
8. Public Health Law Center. Regulating flavored tobacco products. September 2017. Available at: http://www.publichealthlawcenter.org/sites/ default/files/resources/Regulating-FlavoredTobacco-Products-2017.pdf.AccessedApril26,2018.
9. Farley SM, Johns M. New York City flavoured tobacco product sales ban evaluation. Tob Control. 2017;26(1): 78-84.
10. Welsh Boles E, Guardino GA, Abdullahi N, Larson HE, Pearlman DN. Emerging tobacco use among Rhode Island high school students: understanding youth tobacco use at the city/town level. Rhode Island Department ofHealth. 2017. Available at: https://health.ri.gov/publications/briefs/20170418EmergingTobaccoUseAmongRIHighSchool StudentsUnderstandingYouthTobaccoUse%20AtTheCityTownLevel.pdf. Accessed February 7, 2020.
11. Courtemanche CJ, Palmer MK, Pesko MF. Influence of the flavored cigarette ban on adolescent tobacco use. Am J Prev Med. 2017;52(5):e139-e146.
12. Brock B, Carlson SC, Leizinger A, D'Silva J, Matter CM, Schillo BA. A tale of two cities: exploring the retail impact offlavoured tobacco restrictions in the twin cities of Minneapolis and Saint Paul, Minnesota. Tob Control. 2018; Epub ahead ofprint.
13. Rogers T, Brown EM, Mccrae TM, et al. Compliance with a sales policy on flavored non-cigarette tobacco products. Tob Regul Sci. 2017;3(2 suppl 1): S84-S93.
14. Delnevo CD, Giovenco DP, Miller Lo EJ. Changes in the mass-merchandise cigar market since the Tobacco Control Act. Tob Regul Sci. 2017;3(2 suppl 1):S8-S16.
15. Viola AS, Giovenco DP,Miller LoEJ,Delnevo CD. A cigar by any other name would taste as sweet. Tob Control. 2016;25(5):605-606.
16. Farley SM, Schroth KRJ, Grimshaw V, et al. Flavour chemicals in a sample ofnon-cigarette tobacco products without explicit flavor names sold in New York City in 2015. Tob Control. 2018;27:170-176.
17. Gammon DG, Rogers T, Coats EM, et al. National and state patterns of concept-flavoured cigar sales, USA, 2012-2016. Tob Control. 2019;28(4)394-500.
18. New York City Department of Health and Mental Hygiene. Notice of adoption of a new chapter 28 ("Restriction on the sale of certain flavored tobacco products") in title 24 of the rules of the City of New York. Available at: https://www1.nyc.gov/assets/doh/ downloads/pdf/smoke/flavored-law-implementingrules.pdf. Accessed May 1, 2019.
19. Watson KA, Gammon DG, Loomis BR, Juster HR, Anker E. Trends in cigarette advertising, price-reducing promotions, and policy compliance in New York State licensed tobacco retailers, 2004 to 2015. Am J Health Promot. 32(8):1670-1687.
20. Institute of Medicine. Public Health Implications of Raising the Minimum Age of Legal Access to Tobacco Products. Washington, DC: National Academies Press; 2015.
21. Czaplicki L, Cohen JE, Jones MR, Smith KC, Rutkow L, Owczarzak J. Compliance with the City of Chicago's partial ban on menthol cigarette sales. Tob Control. 2018; Epub ahead of print.
22. New York City Department of Finance. Licensed tobacco wholesale/distributor dealers. Effective February 1,

2019. Available at: https://www1.nyc.gov/assets/ finance/downloads/pdf/otp_license.pdf. Accessed May 8, 2019.
23. Delnevo CD, Foulds J, Hrywna M. Trading tobacco: are youths choosing cigars over cigarettes? Am J Public Health. 2005;95(12):2123.
24. CantrellJ, KreslakeJM, Ganz O, et al. Marketing little cigars and cigarillos: advertising, price, and associations with neighborhood demographics. Am J Public Health. 2013;103(10):1902-1909.
25. Sifaneck SJ, Johnson BD, Dunlap E. Cigars-forblunts: choice of tobacco products by blunt smokers. J Ethn Subst Abuse. 2005;4(3-4):23-42.
26. Elfassy T, Yi SS, Kansagra SM. Trends in cigarette, cigar, and smokeless tobacco use among New York City public high school youth smokers, 2001-2013. Prev Med Rep. 2015;2:488-491.
27. Dachille K; Tobacco Control Legal Consortium. Pick your poison: responses to the marketing and sale of flavored tobacco products. 2009. Available at: http:// digitalcommons.law.umaryland.edu/cgi/viewcontent.cgi?article=1857&context=fac_pubs. Accessed May 10, 2018.
28. Ribisl KM, D'Angelo H, Feld AL, et al. Disparities in tobacco marketing and product availability at the point of sale: results of a national study. PrevMed. 2017;105:381-388.
29. Bailey ZD, Krieger N, Agénor M, Graves J, Linas N, Bassett MT. Structural racism and health inequities in the USA: evidence and interventions. Lancet. 2017; 389(10077):1453-1463.
30. Grier SA, Kumanyika S. Targeted marketing and public health. Annu Rev Public Health. 2010;31(1):349369.
31. Krieger N. Discrimination and health inequities. Int J Health Serv. 2014;44(4):643-710.
32. Kilgore EA, Mandel-Ricci J, Johns M, etal. Making it harder to smoke and easier to quit: the effect of10 years of tobacco control in New York City. Am J Public Health. 2014;104(6):e5-e8.
33. Quinn EC, Sacks R, Farley SM, Thihalolipavan S. Development of culturally appropriate support strategies to increase uptake of nicotine replacement therapy among Russian- and Chinese-speaking smokers in New York City. J Community Health. 2017;42(3):431-436.
34. New York City Department of Health and Mental Hygiene. Beth "sick for life." April 8, 2015. Available at: https://www.youtube.com/watch?v=LhMM4jUIC80. Accessed February 5, 2020.
35. US Food and Drug Administration. Statement from FDA Commissioner Scott Gottlieb, MD, on proposed new steps to protect youth by preventing access to flavored tobacco products and banning menthol in cigarettes. November 15, 2018. Available at: https://www. fda.gov/news-events/press-announcements/statementfda-commissioner-scott-gottlieb-md-proposed-newsteps-protect-youth-preventing-access. Accessed May 9, 2019.

DETAILS

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The Occupational Safety and Health Act at 50-A Labor Perspective

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ABSTRACT (ENGLISH)

In 1970, Congress passed the Occupational Safety and Health Act (OSH Act), with the goal of providing workers a safe and healthful place to work. The law did not just happen-it took decades of struggles by unions and workers and only came following workplace and environmental tragedies, part of a wave of federal legislation to protect workers, the public, and the environment from harm. And like many of the laws enacted at the time, it was based upon a foundation of setting and enforcing protective standards, with the federal government-in this case the Department of Labor-given the responsibility to carry out the law in collaboration with the states. In addition, the OSH Act gave workers and their representatives important new rights, including filing complaints, requesting onsite inspections, accessing information, and seeking new protective standards.

The law has been described as radical and revolutionary, fundamentally changing the balance of power between the government and employers and between workers and employers on a central workplace issue. While the law established a framework and structure for the government to exercise authority and power to advance new protections and oversee compliance, it did not establish a framework and structure for safety and health in the workplace. There were no requirements for the establishment of workplace safety and health programs, safety and health committees, worker safety and health representatives, or basic core safety and health training for workers. That was left to collective bargaining between unions and employers and future regulatory efforts.

FULL TEXT

In 1970, Congress passed the Occupational Safety and Health Act (OSH Act), with the goal of providing workers a safe and healthful place to work. The law did not just happen-it took decades of struggles by unions and workers and only came following workplace and environmental tragedies, part of a wave of federal legislation to protect workers, the public, and the environment from harm. And like many of the laws enacted at the time, it was based upon a foundation of setting and enforcing protective standards, with the federal government-in this case the Department of Labor-given the responsibility to carry out the law in collaboration with the states. In addition, the OSH Act gave workers and their representatives important new rights, including filing complaints, requesting onsite inspections, accessing information, and seeking new protective standards.

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Thus, the success of the law has been tied largely to the commitment and actions of the government-both at the federal and state level-to support and advance stronger worker safety and health protections, and the effectiveness of unions and other safety and health advocates in pushing the government to act.

For the past 50 years, unions and allies have raised key safety and health issues and pushed for stronger standards, greater worker rights, and tougher enforcement of the law. Virtually all of the major standards issued by the Occupational Safety and Health Administration (OSHA)-asbestos, lead, hazard communication, silica, bloodborne pathogens, lockout or tagout, and confined space entry, to name a few-were the result of petitions, lawsuits, and direct action by workers, unions, and other safety and health advocates. Unions have sought increased funding and staffing for OSHA and the other job safety agencies. And unions and safety and health advocates have pushed to hold the agency accountable for its failures to act while at the same time defending the agency and the law against endless industry attacks aimed at weakening protections.

Nearly 50 years after the law went into effect and OSHA was created, there is no question that real progress has been made. Work-related deaths have declined dramatically-from 14000 in 1970 to 5250 deaths in 2018-with high-

hazard industries such as construction seeing the greatest reductions in the numbers and rate of fatalities. The same is true for work-related injuries and exposures to key toxic substances such as asbestos and benzene.
OSHA standards have dramatically changed norms and practices. Just think about how asbestos removal is handled today-with enclosures, full body personal protective equipment, and more-compared with decades ago when few control measures were employed and workers were provided little protection.
Similarly, OSHA enforcement has changed practice and improved conditions, both through emphasis programs that focus on high-hazard industries like meat packing and poultry processing and inspections at individual workplaces with high injury rates or in response to complaints. It is well documented that OSHA inspections improve conditions, reducing exposures and injuries.
When there has been strong leadership and commitment and OSHA has focused its efforts, the agency has made a real and lasting difference, even in the face of strong opposition from industry groups and their political allies.
But the fact is, over the decades, OSHA's ability to address major safety and health issues and problems has greatly diminished.
Federal OSHA and the state OSHA plans are responsible for overseeing the safety and health of 160 million workers at more than 8 million workplaces, twice as many as when the OSH Act was passed in 1970.1 But in fiscal year 2018, there were fewer than 1900 federal and state OSHA inspectors; federal OSHA had just 752 inspectors, the lowest number since the early 1970s when the agency began its work. Currently, federal OSHA is able to inspect workplaces under its jurisdiction on average only once every 165 years. The agency's budget, even with a small increase to $582 million in fiscal year 2020, is significantly less in real dollar terms than a decade ago.2
OSHA's ability to issue needed standards is also seriously constrained. In its 50-year history, federal OSHA has issued standards for 32 toxic substances. The standard-setting process has gotten harder and longer as layers of procedural and analytical requirements have been added, and industry and political opposition has intensified. Early on, it took OSHA one to three years to issue new standards for major hazards. The most recent standards-silica and beryllium issued during the Obama administration-took 20 years. For most hazards, standards are out of date or nonexistent. OSHA cannot address even long-recognized problems, let alone the emerging hazards, that put workers in danger, such as workplace violence.
Today's workplaces and workforce are much different than those in 1970. The service sector has grown significantly while manufacturing has declined. Women make up a much larger segment ofthe workforce, which is also much more diverse. Employment structures and relationships are more fissured and fragmented, making it more difficult to determine employer responsibility for compliance with safety requirements. Declines in unionization have resulted in fewer workers covered by the protection of a collective bargaining agreement, making them more vulnerable to retaliation for raisingjob safety concerns. Yet the OSH Act remains largely unchanged since 1970, and federal OSHA has struggled to keep up with these changes.
The OSH Act and OSHA program need to be strengthened and modernized building on what has been established. The Act must be extended to cover the millions of public employees who still lack legal protection; penalties must be strengthened, including making criminal offenses a felony instead of a misdemeanor; and whistleblower protections must be improved so workers can exercise their rights. The law should require all employers to establish a safety and health program, which fully involves workers and their representatives, to identify and fix hazards, whether the hazard is covered by a specific OSHA standard or not.
The law must also be brought into the 21st century, making all employers jointly responsible for safety and health at multiemployer worksites and by requiring active coordination and collaboration among employers to address safety and health issues. Permissible exposure limits for toxic chemicals must be updated to reflect currently recognized and recommended standards.
Like the passage of the OSH Act of 1970 and other safety and health gains, this will not just happen. It will require organizing and direct action by workers, their unions, and other safety and health activists and advocates to demand that the promise of safe jobs for all workers finally be fulfilled.
Margaret M. Seminario, MS

CONFLICTS OF INTEREST

The author has no conflicts of interest to declare.

Sidebar

ABOUT THE AUTHOR

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References

REFERENCES

1. US Bureau of Labor Statistics. Household data annual averages, Table 1. Employment status of the civilian noninstitutional population, 1948 to date. Available at: https://www.bls.gov/cps/ cpsaat01.pdf.AccessedDecember9,2019.

2. AFL-CIO. Death on the job: the toll of neglect, 2019. Available at: https://aflcio. org/ reports/death-job-toll-neglect-2019. Accessed December 9, 2019.

DETAILS

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Safety and Health at the Heart of the Past, Present, and Future of Work: A Perspective From the International Labour Organization

Greenfield, Deborah, JD [1] [1] International Labour Organization, Geneva, Switzerland

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ABSTRACT (ENGLISH)

Every year, 2.78 million workers die from occupational accidents and work-related diseases, and an additional 374 million workers suffer from nonfatal occupational accidents.1 Lost workdays represent almost 4% of the world's gross domestic product, rising to 6% in some countries.2

For centuries, the workplace has posed risks and hazards for workers. In emphasizing the essential role of social justice in achieving lasting peace, the International Labour Organization (ILO) constitution calls on member states to improve working conditions, including "the protection of the worker against sickness, disease and injury arising out of his employment."3

Although workers continued to experience risks to their safety and health, heightened global knowledge had a significant impact on how organizations such as the ILO tackled these challenges globally.4 Scientific and professional understanding ofthe nature of work and its relationship to the safety, health, and well-being of workers

opened a venue for progress in industrialized nations. Occupational hygiene, along with occupational medicine, toxicology, and epidemiology, continued to grow rapidly, as did disciplines associated with safety design and engineering.

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The exponential growth in the production ofnew substances from the mid-20th century onward generated an increased need for research into their possible harmful effects. Revelations concerning such effects, sometimes in relation to supposed harmless substances already in widespread use, such as vinyl chloride monomer, spurred the need for more research.5

Yet, the approach to controlling and regulating occupational safety and health (OSH) risks remained relatively the same, despite the burgeoning knowledge base concerning the science and engineering of prevention and control ofOSH. In most countries, prescriptive measures continued to impose duties based on established legal employment relationships, in relation either to identified hazards and harmful substances or to entire industries such as mining and construction. Although in some countries the evolution of social protection measures improved the availability of financial compensation for injury and illness arising from work, access to this financial assistance remains an issue.

In addition to its normative role, the ILO focused on the development of codes of practice and guidelines on OSH. They have provided OSH guidance for various economic sectors and for the recording and notification of occupational accidents and workrelated diseases. At the global level, the ILO also supported research into a range ofOSH issues. Consequently, the ILO introduced a program of technical assistance, providing capacity building to help deliverpolicies at the national level and support for the development of national institutions and labor inspection systems.

More recently, changes in global production, developing technologies, shifting patterns of work and industry, changes in labor market demographics, and major industrial disasters began to demand a different approach to OSH policy. National-level challenges for both employers and workers showed that the traditional regulation of single OSH risks or single economic sectors had become too narrow; recognition grew of the need to establish a more holistic approach that could address increasingly divergent OSH challenges.

The ILO adapted to these changes by shifting to a culture of prevention. In 1981, for example, the organization adopted the Occupational Safety and Health Convention, no. 155, which states:

Each Member shall, in the light of national conditions and practice, and in consultation with the most representative organisations of employers and workers, formulate, implement and periodically review a coherent national policy on occupational safety, occupational health and the working environment. (Art. 4.1)

This is to "prevent accidents and injury" at the workplace "by minimising, so far as is reasonably practicable, the causes of hazards inherent in the working environment" (Art. 4.2). This pioneering approach to promoting a safe and healthy workplace culture was followed quickly by the Occupational Health Services Convention (no. 161) in 1985.

These developments led to an increasing policy focus on more systematic approaches, with the identification, assessment, and control of risks featuring prominently, both in the safe management of major hazardous industries and in more generic guidance for workplace practices everywhere.

THE NEW MILLENNIUM

The ILO continued its emphasis on prevention as the new millennium began. In 2001, the ILO published the "Guidelines on Safety and Health Management Systems." These guidelines helped embed the systems-based approach to OSH management in global OSH policies at the national and workforce levels. In 2006, it adopted the "Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)."

The increasingly globalized nature of trade, including the proliferation of global supply chains, has continued to present challenges to effective OSH management. In 2013, the Rana Plaza factory collapse in Dhaka, Bangladesh, in which more than 1100 workers lost their lives and 2500 more were injured, demonstrated the continuing urgency of addressing fundamental safety and health issues in global supply chains through strong partnerships. The ILO's flagship program, Safety + Health for All, brings a strategic compliance approach to global supply chains, including small and mediumsized enterprises. ILO programs such as Better Work and Sustaining Competitive and Responsible Enterprise, which both provide technical assistance to factories along the supply chain, aim in part to create a culture of prevention, relying on dialogue between workers and employers at the factory level. The Vision Zero Fund, an initiative ofthe G7 (Group of Seven) implemented by the ILO, seeks to create shared responsibility for safer supply chains.

With the rise in temporary and part-time work (such as zerohours contracts), the platform economy, and continued challenges to establishing adequate work-life balance, the ILO has paid increasing attention to the corresponding rise in psychosocial risks in the workplace. Noncommunicable diseases, such as occupational cancers, respiratory diseases, and workrelated mental health disorders, require sustained vigilance. These challenges also bring improved opportunities for strategic compliance, for example by applying new technologies to risk assessment and dangerous jobs and by reshaping working schedules to create a better work-life balance.

MOVING FORWARD

The ILO's centenary in 2019 presented an opportunity not only to reflect on the organization's accomplishments but also to address challenges for the Future of Work. In June of this year, delegates to the Centenary International Labor Conference adopted the ILO Centenary Declaration for the Future of Work. The Declaration recognizes that "safe and healthy working conditions are fundamental to decent work." Building on that recognition, delegates to the conference requested the ILO's governing body "to consider, as soon as possible, proposals for including safe and healthy working conditions in the ILO 's framework of fundamental principles and rights at work."6

Thus, although we have seen significant progress throughout the last century in advancing OSH, the need to create safe and healthy work for all remains pressing. New and emerging safety and health risks in an ever-changing world of work will create new challenges, as well as opportunities, for governments, employers, workers, and other key stakeholders to ensure safe and healthy working environments. Á¡PU

Deborah Greenfield, JD

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Sidebar

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References

REFERENCES

1. Hämäläinen P, Takala J, Boon Kiat T. Global Estimates of Occupational Accidents and Work-Related Illnesses 2017. Singapore: Workplace Safety and Health Institute; 2017.
2. Takala J, Haämaälaäinen P, Saarela KL, et al. Global estimates of the burden of injury and illness at work in 2012. J Occup Environ Hyg. 2014;11(5):326-337.
3. International Labour Organization. ILO Constitution, Preamble. 1919. Available at: http://www.ilo.ch/dyn/normlex/en/f?p=1000:62:0:NO:62: P62_LIST_ENTRIE_ID:2453907: NO#A1. Accessed March 02, 2020.
4. Hughes S, Haworth N. The International Labour Organization (ILO): Coming in From the Cold. London, UK: Routledge; 2011.
5. Markowitz G, Rosner D. Deceit and Denial: The Deadly Politics ofIndustrial Pollution. Berkeley, CA: University of California Press; 2013.
6. International Labour Organization. Resolution on the ILO Centenary Declaration for the Future ofWork (adopted on 21 June 2019), International Labour Conference, 108th Session, para 1. Available at: https://www.ilo.org/wcmsp5/groups/public/-ed_norm/-relconf/documents/meetingdocument/ wcms_711659.pdf Accessed March 03, 2020.

DETAILS

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Gonorrhea Prevalence Among Young Women and Men Entering the National Job Training Program, 2000–2017

Learner, Emily R, PhD [1] ; Kreisel, Kristen, PhD [1] ; Kirkcaldy, Robert D, MD, MPH [1] ; Schlanger, Karen, PhD, MPH [1] ; Torrone, Elizabeth A, PhD [1] [1] Division of STD Prevention, National Center for HIVjAIDS, Viral Hepatitis, STD, and TB Prevention, Centers for Disease Control and Prevention, Atlanta, GA

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ABSTRACT (ENGLISH)

Objectives. To examine long-term gonorrhea prevalence trends from a sentinel surveillance population of young people at elevated risk for gonorrhea. Methods. We analyzed annual cross-sectional urogenital gonorrhea screening data from 191 991 women (2000-2017) and 224 348 men (2003-2017) 16 to 24 years of age entering the National Job Training Program, a US vocational training program. We estimated prevalence among women using an expectation-maximization algorithm incorporated into a logistic regression to account for increases in screening test sensitivity; log-binomial regression was used to estimate prevalence among men. Results. The adjusted gonorrhea

prevalence among women followed a U-shaped curve, falling from 2.9% to 1.6% from 2000 through 2011 before rising to 2.7% in 2017. The prevalence among men declined from 1.4% to 0.8% from 2003 through 2017. In the case of both women and men, the prevalence was highest across all study years among those who were Black or American Indian/Alaska Native and those who resided in the South or Midwest. Conclusions. Trends among National Job Training Program enrollees suggest that gonorrhea prevalence is rising among young women while remaining low and steady among young men. (Am J Public Health. 2020;110:710-717. doi:10.2105/AJPH.2019. 305559)

FULL TEXT

Headnote

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Conclusions. Trends among National Job Training Program enrollees suggest that gonorrhea prevalence is rising among young women while remaining low and steady among young men. (Am J Public Health. 2020;110:710-717. doi:10.2105/AJPH.2019. 305559)

Gonorrhea is the second most commonly reported sexually transmitted disease (STD) in the United States. Most infections are asymptomatic, and untreated infection may lead to severe reproductive sequelae, including pelvic inflammatory disease and infertility among women and epididymitis among men. The burden is highest among adolescents and young adults 15 to 24 years of age, non-Hispanic Blacks, and those residing in the South.1 3 Gonorrhea control programs, including those offering screening and treatment of asymptomatic infections, are important for reducing the risk of sequelae, as well as interrupting ongoing transmission and reducing prevalence and incidence.

National notifiable surveillance of reported gonorrhea cases is helpful in monitoring trends in diagnosed gonorrhea and assessing the impact ofcontrol programs over time. National gonorrhea case rates among adolescents and young adults have increased steadily since 2014, potentially indicating an increase in gonorrhea incidence.1 However, case rates may also increase as a result ofa number of biases. Case rates, which are estimated by dividing the total number of reported cases by the total population size, may rise because of increased screening coverage (including increased screening at extragenital sites); screening with newer, more sensitive tests; or improved reporting (e.g., electronic laboratory reporting). In addition, case rates are influenced by changes in the risk composition of those who are screened (i.e., case mix), as case counts will likely rise if an increasing proportion of high-risk individuals are screened.4 The influence of these potential biases on case rate trends is difficult to ascertain and complicates interpretation of trends.

Prevalence trends derived from sentinel surveillance can be a useful counterpart to case rate trends because prevalence (referring to cases in which all participants are screened) is not subject to bias resulting from screening coverage or reporting. One sentinel program for the surveillance of gonorrhea in the United States is the National Job Training Program (NJTP), a vocational training program for socioeconomically disadvantaged young adults run by the Department of Labor. The NJTP has included gonorrhea screening at program entry since 2000 for young women and 2003 for young men, and the program has maintained consistent eligibility criteria.5 NJTP entrants

represent a relatively stable population of economically disadvantaged young adults in which gonorrhea prevalence can be measured. Gonorrhea prevalence among women and men entering the NJTP between 2004 and 2009 declined modestly,6 but long-term trends accounting for potential bias due to changes in case mix and screening tests have not been reported.

We examined gonorrhea prevalence trends among young women entering the NJTP during 2000 to 2017 and young men entering the program during 2003 to 2017, accounting for potential bias associated with changes in screening tests and case mix, to provide minimally biased prevalence estimates over time in a sentinel population at elevated risk for gonorrhea.

METHODS

US residents 16 to 24 years of age who meet low-income criteria and face barriers to employment are eligible for the NJTP.5 The NJTP includes gonorrhea and chlamydia screening for all enrollees within 48 hours of entering the program. The majority of gonorrhea testing for the program is performed by a national contract laboratory, although NJTP centers may use local laboratories for testing; local testing data were not available for analysis. Treatment and follow-up care are provided by NJTP centers. We included non-Hispanic White, nonHispanic Black, Hispanic, and American Indian/Alaska Native (AI/AN) enrollees residing in the Northeast, South, Midwest, and West for whom gonorrhea screening test results and information on type of diagnostic test (women only) were available.

During 2000 to 2006, women entering the NJTP were screened with a cervical swab; the Gen-Probe PACE 2 DNA hybridization probe (Gen-Probe Inc, San Diego, CA) was used in this screening. After 2006, women were screened through either a vaginal swab or a urine sample via the BD ProbeTec ET strand displacement assay (Becton-Dickinson, Sparks, MD). Screening for men began in 2003. Most men were screened via a urine sample with the BD ProbeTec assay, although some were screened with the Gen-Probe PACE 2 probe in the early study years.

Evaluation of Possible Biases

Our methods closely followed those used to estimate chlamydia prevalence in the NJTP.7 We explored potential sources ofbias that might need to be addressed in analyses of prevalence trends. First, we examined possible bias resulting from missing gonorrhea test results, as only test results from the national laboratory were available for analysis. In addition, we did not have information on which centers used the national contract laboratory for gonorrhea testing. Because all chlamydia testing is performed by the national contract laboratory and reported as part of sentinel surveillance, a comparable number of chlamydia and gonorrhea test results would indicate that all gonorrhea screening was performed at the national contract laboratory rather than a local laboratory.

We compared the number of gonorrhea screening test results with the number of chlamydia screening test results per month as a proxy for completeness of data on gonorrhea and identified each center as being at least 50%, 75%, or 90% complete.6 We then examined gonorrhea positivity including centers at each level of completeness. We observed no meaningful differences by level of completeness (Figure A, available as a supplement to the online version of this article at http://www.ajph.org), and we present results from centers that tested at least 50% of enrollees for chlamydia and gonorrhea at the national laboratory.

Second, we investigated possible changes in case mix overtime. Gonorrhea prevalence and case rates vary by race/ethnicity and region, with young adults who are Black or living in the South having the highest burden.1,3 We examined potential bias due to case mix by assessing longitudinal changes in the demographic characteristics of NJTP enrollees. We examined stacked bar charts of race/ethnicity, region of residence, and age group (16-19 years and 20-24 years) to assess the relative proportion of each factor over time. We also modeled the proportion of each level of race/ethnicity, region, and age group over time using log-binomial models to assess trends. We observed no meaningful variations in the relative proportions ofrace/ ethnicity, region, or age group (Figures B and C, available as supplements to the online version of this article at http://www. ajph.org). The stable distribution of race/ ethnicity, region, and age suggested that potential case mix bias could be excluded from further consideration.

Finally, we sought to account for timevarying misclassification among women because the quality ofscreening tests for women improved over the study period. We generated pairs of sensitivity and specificity estimates for each screening test and sample type through targeted meta-analyses ofthe existing literature. We searched PubMed and

Scopus using medical subject heading terms and keywords related to gonorrhea screening and diagnostic accuracy. We included studies that reported the diagnostic accuracy of the Gen-Probe PACE 2 and BD ProbeTec ET among women and from which counts of true positive, true negative, false positive, and false negative tests could be extracted or calculated (Figure D, available as a supplement to the online version of this article at http://www.ajph.org). We used bivariate generalized linear mixed-effects models with a logit link to generate summary sensitivity and specificity estimates and 95% confidence intervals (CIs). We did not estimate sensitivity and specificity for men because nearly all men were screened with the BD ProbeTec ET, a highly sensitive and specific test.8,9

Gonorrhea Prevalence Trends

We analyzed annual cross-sectional gonorrhea screening data from female NJTP enrollees during 2000 to 2017 and male NJTP enrollees during 2003 to 2017. Data for 2014 were not available as a result ofadministrative challenges. Because screening is part of enrollment and coverage is high, test positivity at enrollment (number positive/number tested) was used as a proxy for prevalence.

We modeled gonorrhea prevalence trends among women using an expectationmaximization algorithm incorporated into a maximum-likelihood regression to account for misclassification due to imperfect screening test sensitivity and specificity (as calculated through our meta-analyses).10 In this approach, expectation maximization is used to estimate a logistic regression model when the outcome is measured with uncertainty; the approach allows test sensitivity and specificity to vary across observations according to the test type and sample type used for screening. Gonococcal infection status (positive or negative) was the dependent variable in our models, and study year (continuous) was the independent variable. Several variable year specifications were examined, and year was specified as restricted cubic spline terms with 4 knots placed at the 5th, 35th, 65th, and 95th percentiles based on the Akaike information criterion and visual inspection. We used logistic regression models rather than log binomial models because of problems with log binomial model convergence. Parameter estimates from logistic regression models were used to calculate predicted gonorrhea probability (prevalence). Ninety-five percent confidence intervals were obtained via bootstrapping (n = 200).

Gonorrhea prevalence and 95% confidence intervals among men were estimated through log binomial regression without correction for imperfect test sensitivity and specificity. The unadjusted prevalence among men was low, and men were overwhelmingly screened with the BD ProbeTec ET. Very few men were screened with the Gen-Probe PACE 2. Correcting for imperfect but highly sensitive and specific tests had a negligible influence on prevalence.

We estimated gonorrhea prevalence trends among all female and male NJTP entrants and examined trends by race/ethnicity, region, and age group (16-19 years and 20-24 years) to evaluate differences by subgroup.

Sensitivity Analyses

Substantial race/ethnicity data were missing for 2013 and the distribution of known race/ethnicity deviated from other years (Figures B and C), so we explored potential bias from missing data. We examined unadjusted prevalence trends without excluding observations with missing data on race/ethnicity and region and found no differences in the shape of prevalence trends (Figure E, available as a supplement to the online version of this article at http://www.ajph.org). We also explored the influence of random error in Gen-Probe PACE 2 and BD ProbeTec ET sensitivity and specificity estimates among women. To account for random error, we modeled gonorrhea prevalence using the upper and lower bounds of the 95% confidence intervals around the summary sensitivity and specificity estimates. Analyses were performed with Stata version 12 (StataCorp LLC, College Station, TX).

RESULTS

The sensitivity and specificity ofscreening tests among women increased over the study period as a result of improvements in test technology (Table A, available as a supplement to the online version of this article at http://www.ajph.org). Sensitivity was 88.4% (95% CI = 84.1, 91.6) for the Gen-Probe PACE 2, 89.6% (95% CI = 85.0,93.0) forBD ProbeTec ET urine samples, and 95.1% (95% CI = 89.3, 97.8) for BD ProbeTec ET vaginal swabs.

Gonorrhea Prevalence Among Women

During 2000 to 2017 (excluding 2014), 359 984 women were screened for gonorrhea or chlamydia (or both) by the national contract laboratory upon entering the NJTP. We excluded data from NJTP centers where less than 50% of

women who were screened for chlamydia had gonorrhea test results (n = 116 813; 32%) to minimize bias from missing gonorrhea results. We further excluded women with missing or other race/ ethnicity (n = 30 450; 13%) and missing data on region (n = 4677; 2%), test result (n = 13 440; 6%), or type of screening test (n = 2613; 1%). The final analytic sample included 191 991 women.

Most female entrants were Black (60%) and 16 to 19 years of age (66%). Almost half of women were from the South (44%), and few reported symptoms (1.5%). Approximately 18% of women were tested with the Gen-Probe PACE 2, and the remainder were tested with the BD ProbeTec ET via a urine sample (66%) or vaginal swab (16%). Unadjusted prevalence values were 2.6% with the Gen-Probe PACE 2, 2.1% with the BD ProbeTec ET for urine samples, and 2.5% with the BD ProbeTec ET for vaginal swabs (Table 1).

There was a U-shaped trend in modelestimated unadjusted and adjusted gonorrhea prevalence over the study period, and the prevalence was high overall. The unadjusted prevalence fell from 3.0% in 2000 to 1.8% in 2011 before rising to 2.9% in 2017 (Figure 1 and Figure F, available as a supplement to the online version of this article at http:// www.ajph.org). After misclassification associated with different screening tests had been taken into account, the adjusted prevalence was slightly lower than the unadjusted prevalence, falling from 2.9% in 2000 to 1.6% in 2011 before rising to 2.7% in 2017 (a relative increase of nearly 70%).

Gonorrhea prevalence trends among women varied by race/ethnicity, although the prevalence among all racial/ethnic groups rose steadily during 2011 to 2017. NonHispanic Black women had the highest gonorrhea prevalence across the study period, and the prevalence in this group followed a U-shaped curve. The adjusted prevalence among non-Hispanic Black women declined steadily from 4.9% to 2.5% during 2000 to 2011 and then rose steadily to 3.8% in 2017 (Figure 2). Adjusted prevalence trends among AI/AN women generally declined early on (reaching 0.4% in 2011) but climbed sharply after 2011 to 3.3% in 2017; however, estimates for these women were imprecise. The adjusted prevalence among Hispanic and non-Hispanic White women remained under 2% across all study years but began rising modestly in 2011.

There were regional differences in gonorrhea prevalence trends, with the prevalence being consistently higher among women residing in the South and Midwest than among those in the West and Northeast. The adjusted prevalence among women in the South and Midwest generally declined during 2000 to 2011 (from 4.4% to 2.3% in the South and from 2.9% to 2.1% in the Midwest) before increasing through 2017 (to 3.9% in the South and 3.2% in the Midwest; Figure 2). The adjusted prevalence among women in the Northeast and West was under 2% for most study years, although the adjusted prevalence in the Northeast declined sharply in early study years before leveling off.

Younger women 16 to 19 years of age had a higher prevalence of gonorrhea than did older women 20 to 24 years of age throughout the study period. During 2000 to 2011, the adjusted gonorrhea prevalence among younger women dropped from 3.4% to 1.9%, and the adjusted prevalence among older women dropped from 1.4% to 1.1% (Figure G, available as a supplement to the online version of this article at http:// www.ajph.org). The prevalence in both age groups increased after 2011, rising to 3.2% among younger women and 1.9% among older women in 2017.

Sensitivity analyses examining random error influences on screening test sensitivity and specificity estimates showed that the adjusted prevalence from 2000 to 2010 was relatively stable when modeled with the lower 95% confidence limits of sensitivity and specificity estimates (Figure H, available as a supplement to the online version ofthis article at http://www.ajph.org). The adjusted prevalence decreased from 2000 to 2010 when modeled with the upper limits. The adjusted prevalence increased during 2011 to 2017 when modeled with both the lower and upper limits.

Gonorrhea Prevalence Among Men

During 2003 to 2017 (excluding 2014), 479 279 men were screened for gonorrhea or chlamydia (or both) by the national contract laboratory upon entering the NJTP. We excluded data from NJTP centers where less than 50% of men who were screened for chlamydia had gonorrhea test results (n = 160 902; 34%) to minimize bias from missing gonorrhea results. We further excluded men with missing or other race/ ethnicity (n = 33 631; 11%) and missing data on region (n = 4515; 2%) and test result (n = 55 883; 20%). Our final sample included 224 348 men.

Most men were 16 to 19 years of age (66%), non-Hispanic Black (55%), and from the South (51%). Fewer than 1% reported symptoms. More than 99% of men were screened with the BD ProbeTec ET via a urine specimen (unadjusted prevalence: 1.1%), and the remainder (0.2%) were screened with the Gen-Probe PACE 2 (unadjusted prevalence: 5.6%). The prevalence among men decreased steadily over the study period, from 1.4% in 2003 to 0.8% in 2017 (Table 1, Figure 1, and Figure F).

There were differences in prevalence trends by race/ethnicity; non-Hispanic Black men had the highest prevalence throughout the study period. The prevalence among non-Hispanic Black men decreased from 2.3% to 1.4% during 2003 to 2017, the prevalence among AI/AN men increased from 0.3% to 0.7%, and the prevalence among Hispanic and non-Hispanic White men was steady at approximately 0.2% and 0.1%, respectively (Figure 3).

The prevalence among men also differed by region and was highest in the South and Midwest. The prevalence in the South declined from 1.7% to 1.0%, whereas the prevalence in the Midwest declined more modestly from 1.5% to 1.1%. The prevalence in the Northeast and West was stable over the study period (at approximately 0.6% and 0.3%, respectively; Figure 3).

Differences in gonorrhea prevalence trends among men by age group were minor. The prevalence among men 16 to 19 years of age decreased from 1.5% to 0.7% during 2003 to 2017, whereas the prevalence among men 20 to 24 years of age hovered around 1.0% throughout the study period (Figure I, available as a supplement to the online version of this article at http://www.ajph.org).

DISCUSSION

Long-term gonorrhea prevalence trends from sentinel surveillance of the NJTP augment national case rate trends, which can be difficult to interpret as a result ofbiases that are challenging to measure and control. After accounting for time-varying misclassification due to imperfect screening tests among women and ruling out bias attributable to case mix, we found that the gonorrhea prevalence among women entering the NJTP declined during 2000 to 2011 before rising steadily to near 2000 levels in 2017. The prevalence among men entering the NJTP declined modestly during 2003 to 2017. NonHispanic Black enrollees and enrollees residing in the South and Midwest had the highest prevalence of gonorrhea throughout the study period.

The rising gonorrhea prevalence among women in the second halfofour study period may point to a need for increased prevention efforts targeting economically disadvantaged young women. Increasing prevalence was observed among women overall and across race/ethnicity, region, and age categories. Increases among non-Hispanic Black and AI/AN women, women in the South and Midwest, and younger women are particularly concerning given that the prevalence in these groups is already high and the reproductive sequelae of gonorrhea can be severe for women. Continued monitoring of gonorrhea prevalence and the increasing trends in these groups will be important for understanding gonorrhea epidemiology among women, tailoring control efforts, and preventing adverse sequelae.

The gonorrhea prevalence among men was low and decreased over time. This low prevalence, particularly relative to women, is unsurprising because urogenital infections among men are more likely to be symptomatic and may have prompted men entering the NJTP to have sought treatment prior to enrollment. The decreasing trend among men appears to be driven by a declining prevalence among non-Hispanic Black men; the prevalence in this group was highest over the study period but decreased over time, whereas the prevalence in other racial/ethnic groups was lower but generally remained stable. The trend among nonHispanic Black men is encouraging but unexpected because case rates among Black men have increased in recent years.1

In addition, the prevalence among nonHispanic Black men was generally more than 10 times as high as the prevalence among non-Hispanic White men over the course of the study. This racial/ethnic disparity has been previously documented,1,2,6 but our results suggest a reduction in this disparity over time in the sentinel study population. Continued monitoring ofprevalence by race/ ethnicity within the NJTP and among other populations is needed to understand whether these trends will persist.

Our study is one of the first to our knowledge to examine long-term gonorrhea prevalence trends in the United States. Estimates from national probability surveys have been too imprecise and unstable as a result of small

sample sizes and low gonorrhea prevalence to draw meaningful conclusions about trends.2 The NJTP has a sufficient sample size and prevalence to examine trends, and previously estimated trends for women and men entering the NJTP showed a decline over a 5-year period.6 Our analysis, which spanned 18 years for women and 15 years for men, showed that the gonorrhea prevalence among men declined throughout the study period and that the prevalence among women declined and then subsequently increased.

We also carefully examined bias due to case mix by considering temporal trends in factors previously associated with gonorrhea, including race/ethnicity, socioeconomic status, age, and region of residence.1,3 The NJTP entrance criteria for socioeconomic status and age were unchanged over the course of the study period, and we did not observe meaningful longitudinal variation in race/ ethnicity or region. We could not assess whether other important characteristics, such as sexual behavior, changed over time.

Finally, we addressed outcome misclassification due to imperfect and changing screening tests separately for women and men to generate minimally biased prevalence estimates. For women, we conducted metaanalyses to estimate plausible screening test sensitivities and specificities. We used those estimates in an expectation-maximization algorithm incorporated into a logistic regression to account for misclassification. As a result, our prevalence estimates among women are slightly lower than were previously reported estimates.6 However, we were unable to account for any potential heterogeneity in sensitivity or specificity estimates by age. Misclassification among men was minimal and did not have a meaningful impact on point estimates or trend interpretations because nearly all men were screened with a highly accurate test.

Limitations

Our results are generalizable to young people of disadvantaged socioeconomic standing who may enter a job training program; however, our findings may not reflect trends in the general population. In addition, our study does not provide insight into why urogenital gonorrhea prevalence may be increasing among women or decreasing among men entering the NJTP. Sexual activity (e.g., age of sexual debut and condom use) and prevalence within one's sexual network may be important influential factors, but data on these factors were not collected. Both sexual activity and condom use among adolescents have generally declined over the past decade, which may have influenced trends among NJTP enrollees.11 Further research into the relative contribution of changes in sexual behaviors to prevalence trends could help inform prevention interventions.

Changes in structural factors such as health care access and use may also affect prevalence, as women and men who access care are more likely to be screened and treated than are those who do not access care and thus are less likely to have prevalent infections. For example, asymptomatic women may be screened for STDs during wellness or prenatal care visits, and factors that influence these visits (e.g., changes in cervical cancer screening guidelines and increased contraception uptake) may also influence STD screening rates. Such a relationship was observed among women enrolled in Medicaid; a slowed increasing trend in chlamydia screening rates among women from 2004 through 2013 corresponded to a decrease in Papanicolaou testing and adolescent pregnancy.12 Access to screening among women and men is also limited by reductions in public funding for STD clinics, which may result in reduced clinical services or increased patient copays.13 Examining multiple factors that influence gonorrhea screening and prevalence trends is an important area for continued study.

In addition, our prevalence estimates are based on urogenital test results. Gonococcal infections can also occur in the pharynx and rectum, and our estimates likely underestimate the true burden of infection. This may be particularly relevant among men. Other sentinel surveillance data that include information on all anatomic sites suggest increasing diagnoses beginning in 2011 among men, primarily gay, bisexual, and other men who have sex with men.1,14,15 Modestly decreasing or stable trends in urogenital infections observed among male NJTP enrollees may not fully reflect trends in the gonorrhea epidemic in this sentinel population. Data from programs that screen all anatomic sites and collect information on sexual behaviors would be useful to better characterize the overall burden of gonorrhea and inform interpretation of trends.

Public Health implications

Gonorrhea prevalence trends from sentinel surveillance may be subject to fewer biases than case rate trends,

allowing for improved interpretation and understanding of changes in gonorrhea epidemiology. We examined long-term gonorrhea prevalence trends among NJTP enrollees. Diverging trends among men and women suggest that screening and prevention efforts may be adequate for men but may need to be targeted and strengthened to reverse the increasing prevalence among women in this high-risk sentinel population. There were also racial/ethnic and regional disparities in the present study population. Continued monitoring of trends within the NJTP and other high-risk populations will be helpful for understanding whether trends will persist. ÂfPU

CONTRIBUTORS

E. R. Learner and E. A. Torrone designed the study and the analytic strategy. E. R. Learner carried out analyses and drafted the article. All of the authors reviewed and interpreted results and edited the article.

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The findings and conclusions in this article are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

CONFLICTS OF INTEREST

The authors report no conflicts of interest.

HUMAN PARTICIPANT PROTECTION

No protocol approval was needed for this study because data collection was determined to be part ofroutine surveillance and not research.

Sidebar

ABOUT THE AUTHORS

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References

REFERENCES

1. Sexually Transmitted Disease Surveillance 2017. Atlanta, GA: Centers for Disease Control and Prevention; 2018.

2. Torrone EA,JohnsonRE, Tian LH, et al. Prevalence of Neisseria gonorrhoeae among persons 14 to 39 years of age, United States, 1999 to 2008. Sex Transm Dis. 2013;40(3): 202-205.

3. Miller WC, Ford CA, Morris M, et al. Prevalence of chlamydial and gonococcal infections among young adults in the United States. JAMA. 2004;291(18): 2229-2236.

4. Miller WC. Epidemiology ofchlamydial infection: are we losing ground? Sex Transm Infect. 2008;84(2):82-86.

5. US Department ofLabor. US Department ofLabor Job Corps annual report. Available at: https://s3-us-west-2. amazonaws.com/jobcorps.gov/2017-04/Job_Corps - py08report.pdf. Accessed February 10, 2020.

6. Bradley H, Satterwhite CL. Prevalence of Neisseria gonorrhoeae infections among men and women entering the National Job Training Program-United States, 2004-2009. Sex Transm Dis. 2012;39(1):49-54.

7. Learner ER, Torrone EA, Fine JP, et al. Chlamydia prevalence trends among women and men entering the National Job Training Program from 1990 through 2012. Sex Transm Dis. 2018;45(8):554-559.

8. Van Der Pol B, Ferrero DV, Buck-Barrington L, et al. Multicenter evaluation of the BDProbeTec ET system for detection ofChlamydia trachomatis and Neisseria gonorrhoeae in urine specimens, female endocervical swabs, and male urethral swabs. JClin Microbiol. 2001;39(3):1008-1016.

9. Gaydos CA, Cartwright CP, Colaninno P, et al. Performance of the Abbott RealTime CT/NG for detection ofChlamydia trachomatis and Neisseria gonorrhoeae. JClin Microbiol. 2010;48(9):3236-3243.

10. Magder LS, Hughes JP. Logistic regression when the outcome is measured with uncertainty. Am J Epidemiol. 1997;146(2):195-203.

11. Centers for Disease Control and Prevention. Youth Risk Behavior Survey data. Available at: https://www. cdc.gov/healthyyouth/data/yrbs/pdf/trendsreport.pdf. Accessed February 10, 2020.

12. Tao G, Kreisel K, Gift TL. Impact of significant decreases over time in the proportion of sexually active Medicaid

women who had Papanicolaou testing or were pregnant on trends of overall chlamydia testing rates. Sex Transm Dis. 2018;45(11):e90-e93.
13. LeichliterJS, Heyer K, Peterman TA, et al. US public sexually transmitted disease clinical services in an era of declining public health funding: 2013-14. Sex Transm Dis. 2017;44(8):505-509.
14. Johnson Jones ML, Chapin-Bardales J, Bizune D, et al. Extragenital chlamydia and gonorrhea among community venue-attending men who have sex with men-five cities, United States, 2017. MMWR Morb Mortal Wkly Rep. 2019;68(14):321-325.
15. Stenger MR, Pathela P, Anschuetz G, et al. Increases in the rate of Neisseriagonorrhoeae among gay, bisexual and other men who have sex with men-findings from the Sexually Transmitted Disease Surveillance Network 2010-2015. Sex Transm Dis. 2017;44(7):393-397.

DETAILS

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The Occupational Safety and Health Administration at 50-the Failure to Improve Workers' Compensation

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ProQuest document link

ABSTRACT (ENGLISH)

In the 1950s and 1960s, it was widely recognized that workers' compensation was failing in its mission to provide economic security for injured workers. After decades of concern, Congress called for a formal review of these state-based programs in the Occupational Safety and Health Act of 1970. Congress gave this responsibility to the National Commission on State Workmen's Compensation Laws ("National Commission"). In 1970, 19 states did not require any employers to provide workers' compensation coverage. Other states mandated coverage for only a fraction of workers. Only about half the states provided benefits to cover two thirds of lost wages, and in most states the maximum weekly benefit was less than the national poverty level for a family of four. In addition, programs frequently did not cover all injuries and provided even less comprehensive coverage for occupational diseases.

FULL TEXT

In the 1950s and 1960s, it was widely recognized that workers' compensation was failing in its mission to provide economic security for injured workers. After decades of concern, Congress called for a formal review of these state-based programs in the Occupational Safety and Health Act of 1970. Congress gave this responsibility to the National Commission on State Workmen's Compensation Laws ("National Commission").

In 1970, 19 states did not require any employers to provide workers' compensation coverage. Other states mandated coverage for only a fraction of workers. Only about halfthe states provided benefits to cover two thirds of

lost wages, and in most states the maximum weekly benefit was less than the national poverty level for a family of four. In addition, programs frequently did not cover all injuries and provided even less comprehensive coverage for occupational diseases.

In its 1972 report, the National Commission concluded, "The protection furthered by workmen's [sic] compensation to American workers presently is, in general, inadequate and inequitable."1 It proposed five basic objectives for workers' compensation systems:

1. " Broad coverage of employees and of work-related injuries and diseases,"
2. "Substantial protection against interruption ofincome,"
3. "Provision of sufficient medical care and rehabilitation services,"
4. "Encouragement of safety," and
5. " An effective systemfor delivery of the benefits and services."

Based on these objectives, it made 84 recommendations, 19 of which it considered essential.

These essential recommendations became a benchmark for judging state workers' compensation systems. In the 1970s, in light of the National Commission's report, several bills were introduced in Congress to create federal minimum standards. These bills did not pass. But the National Commission's report, together with the threat of federal intervention, led many states to enact legislation that provided broader and more adequate benefits, expanding the number ofcovered workers and increasing levels of statutory benefits. Protection expanded in many states through the 1970s and 1980s.

These improvements, together with a sustained rise in medical costs, led to substantial increases in costs. Between 1984 and 1990, employers' average costs per $100 of payroll rose from $1.49 to $2.18, an increase of almost 50% (Figure 1). In addition, the workers' compensation insurance industry was unprofitable in every year from 1984 to 1992.2

This rise in employer costs and decline in insurance profitability led to a counterreformation. From 1990 on, employers and insurers made a concerted effort to push for legislation specifically designed to reduce employer costs. This push was typically framed as a mechanism to improve a state's attractiveness to employers compared with other (often nearby) states. This led to a workers' compensation "race to the bottom."

Over the past three decades, legislative efforts to reduce costs largely did not focus on improving safety or the efficiency of benefit delivery: they focused primarily on reducing both medical costs and cash benefits to injured workers.3 And many ofthe laws passed since 1990 reduced costs by making it harder for people with occupational injuries and illnesses to receive compensation.4

Here are some ofthe ways that states have attempted to reduce employer costs:

1. They have made it more difficult for workers to prove their case. In the past, many states gave workers the benefit of the doubt: the tie went to the worker. Some of these states have changed the standard to "preponderance ofthe evidence" or "clear and convincing evidence."
2. Some states have required "objective" medical evidence to sustain a worker's case. This is a substantial burden for some common injuries; lowback pain is a prime example.
3. Many states now use the American Medical Association's Guides to the Evaluation of Permanent Impairment to determine the degree of permanent partial disability. The guides are notoriously stingy. After California adopted these guides in 2005, physician disability ratings dropped more than 40%.5
4. States have substantially limited the range ofcompensable injuries. For example, they may rule out compensation for "diseases of aging." More broadly, they require that the job be the main cause of the injury. The tradition that employers "take their workers as they find them" has been eroded.
5. Other states, including California, require that payers apportion disability between work and nonwork causes, with benefits paid only for the work-related fraction of disability. This both reduces benefits for those injuries and increases the cost of demonstrating eligibility.
6. States have developed public antifraud campaigns targeting workers. These campaigns have stigmatized claim filing. This is despite evidence that worker fraud is rare and that employer and provider fraud involve much greater

sums than does worker fraud.
7. The "grand bargain" underlying workers' compensation provides benefits to workers on a no-fault basis and shields employers from tort liability because workers' compensation is the worker'sexclusive remedy. In recent decades, legislative "reforms" often have made it difficult or impossible for workers to qualify for workers' compensation benefits, but they nevertheless preclude workers from bringing tort suits against their employers.4
8.Finally, in recent years, there have been efforts to replace workers' compensation programs with employer-designed disability programs. These programs provide even lower and less-frequent benefits, limit which injuries and diseases are compensable, and yet still protect employers from tort liability. The Oklahoma legislature passed such a law, but it was struck down by the state's supreme court. Employers in other states have, however, continued to push for this approach.
Over the past 20 years, studies have demonstrated that many injured workers entitled to workers' compensation benefits do not receive them.4 They have also shown that the benefits provided do not come close to replacing two thirds of lost earnings,6 the standard codified by the National Commission.
The failure of workers' compensation means that the costs of occupational injuries and diseases are being transferred away from this dedicated system of social insurance and outward-to families, communities, and other social programs. Many families do not have the savings to cover the earnings lost following a workplace injury. In 2016, only 24% offamilies had liquid savings of $400 or more7; racial and ethnic minorities have less wealth than Whites. And other social programs, such as the Supplemental Nutrition Assistance Program, are currently under attack.
We need a new national commission. We need federal standards that state workers' compensation systems must meet. We need to end the race to the bottom (https://bit.ly/ 2MykOxV). ÂfPH
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References
REFERENCES
1. National Commission on State Workmen's Compensation Laws. The Report of the National Commission on State Workmen's Compensation Laws. 1972. Available at: https://workerscompresources. com/?page_id=28. Accessed January 2, 2020.
2. Brandenburg A, Fitzpatrick A, Keleher D, Burton JF. The impact of investment income on workers' compensation underwriting results. 2017. Available at: https://www.naic.org/documents/ topic_workers_comp_impact_of_ investment_income.pdf. Accessed January 2, 2020.
3. Grabell M, Berkes H. The demolition of workers' comp. ProPublica and National Public Radio. 2015. Available at: https://www.propublica.org/article/thedemolition-of-workers-compensation. Accessed January 2, 2020.
4. Spieler EA. (Re)assessing the grand bargain:compensationforworkinjuriesin the U.S., 1900-2016. Rutgers Law Rev. 2017;69(3):891-1014.
5. Neuhauser F. Analysis of ratings under the new PD schedule, through June 30, 2007. 2007. Available at:

https://www. dir.ca.gov/chswc/allreports.html#1. Accessed January 2, 2020.
6. Seabury SA, Scherer E, O'Leary P, Ozonoff A, Boden L. Using linked federal and state data to study the adequacy of workers' compensation benefits. AmJ Ind Med. 2014;57(10):1165-1173.
7. Bhutta N, Dettling L. Money in the bank? Assessing families' liquid savings using the survey of consumer finances. FEDS Notes. 2018. Available at: https:// doi.org/10.17016/2380-7172.2275. Accessed January 2, 2020.

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The Future of Occupational Safety and Health Protection in a Fissured Economy

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ABSTRACT (ENGLISH)

There have been innumerable recent conferences, workshops, and convenings on the "future of work." These seances typically focus on issues such as robotics, artificial intelligence, and platform business models like Uber and Lyft. But these topics regarding the future of work affect a relatively small part of the workforce, and speculations on the impacts oftechnology usually prove wildly off the mark.

A focus on changes that have an impact on the present workplace and that will continue to do so is far more useful. Millions of workers in the United States have jobs that do not pay enough, provide few-if any-benefits, and lack opportunities for economic advancement. Germane to this Special Section, those jobs also expose workers to a wide variety of significant health and safety risks-often falling outside the boundaries of Occupational Safety and Health (OSH) Act protections.

These conditions arise in part because businesses have found myriad ways to maintain control over (and capture economic benefit from) services and products while shedding the messy role of employing workers to others. This change in both the present and future structure of work is what I have termed the "fissured workplace," a phrase that is meant to encompass outsourcing, contracting, and subcontracting; franchising in its many forms; and, most recently, platform business models.1 The fissured workplace model has allowed businesses to shift risks and responsibilities onto workers and incentivize the misclassification of employees as independent contractors.

FULL TEXT

There have been innumerable recent conferences, workshops, and convenings on the "future of work." These seances typically focus on issues such as robotics, artificial intelligence, and platform business models like Uber and Lyft. But these topics regarding the future of work affect a relatively small part of the workforce, and speculations on

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CONSEQUENCES OF THE FISSURED WORKPLACE

Having multiple parties with unclear responsibilities for health and safety can create a work environment in which the likelihood of injuries or fatalities increases. This was the case in the mid-2000s as the explosion of cell phone use spurred by the iPhone led to the rapid expansion of cell tower networks. Major companies such as AT&T and Verizon drew on a highly subcontracted system to undertake that work.

In that period, the fatality rate among cell tower workers- often those at the bottom of multileveled subcontracting-was three times that facing underground coal miners.2

Workers who are hired on a temporary or conditional basis often do not know whom to report safety problems to at the work site or, more often, are reluctant to exercise their right to complain about unsafe conditions because of fear of reprisal. And the prevalence of misclassification of workers as independent contractors in already dangerous work settings like construction, logistics, and transportation can further increase fatality risks. Analysis of the Census of Fatal Occupational Injuries found that, in 2017, about 12% of fatal workplace injuries were experienced by independent workers (defined as workers with short-term jobs that involve a discrete task and have no guarantee of future work). This represents a disproportionally higher propensity of injury or death attributable to a workplace incident than that experienced by their employee counterparts.3

Health and safety risks arising from fissured relationships can also spill over to other parties, such as the finding that outsourcing hospital cleaners increases the spread of health care-associated infections.4 Women and workers of color make up a disproportionate share of the low-wage workforce in industries including temporary help services, security guards and patrol services, home health care, hospitality, and logistics. This means that increased health and safety risks disproportionately affect workers already subject to higher injury and fatality rates.

REALIGNING RESPONSIBILITY AND PROTECTIONS

The OSH Act, like many of our fundamental workplace laws, provides its protections via employment. Erosion of employment therefore undermines protections and requires a new framing for health and safety policy. One way to do so is to make the provision of a safe workplace basic to work itself rather than specifically attached to employment. This would entail broadly extending aspects of the Occupational Safety and Health Administration's (OSHA's) mandate already applied in some sectors.

Congress recognized in passing the OSH Act the importance of "assur[ing] so far as possible every working man and woman in the Nation safe and healthful (ProQuest: ... denotes text stops here in original.)

Sidebar

Correspondence should be sent to Dean David Weil, Heller School for Social Policy and Management, Brandeis University, 415 South St, MS 035, Waltham, MA 02453 (e-mail: davweil@brandeis.edu). Reprints can be ordered at http://www.ajph.org by clicking the "Reprints" link.

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Fifty Years of Influenza A(H3N2) Following the Pandemic of 1968

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ABSTRACT (ENGLISH)

In 2018, the world commemorated the centennial of the 1918 influenza A(H1N1) pandemic, the deadliest pandemic in recorded history; however, little mention was made of the 50th anniversary of the 1968 A(H3N2) pandemic. Although pandemic morbidity and mortality were much lower in 1968 than in 1918, influenza A(H3N2) virus infections have become the leading cause of seasonal influenza illness and death over the last 50 years, with more than twice the number of hospitalizations from A(H3N2) as from A(H1N1) during the past six seasons. We review the emergence, progression, clinical course, etiology, epidemiology, and treatment of the 1968 pandemic and highlight the short- and long-term impact associated with A(H3N2) viruses. The 1968 H3N2 pandemic and its ongoing sequelae underscore the need for improved seasonal and pandemic influenza prevention, control, preparedness, and response efforts. (Am J Public Health. 2020;110:669-676. doi: 10.2105/ AJPH.2019.305557)

FULL TEXT

Headnote

In 2018, the world commemorated the centennial of the 1918 influenza A(H1N1) pandemic, the deadliest pandemic in recorded history; however, little mention was made of the 50th anniversary of the 1968 A(H3N2) pandemic. Although pandemic morbidity and mortality were much lower in 1968 than in 1918, influenza A(H3N2) virus infections have become the leading cause of seasonal influenza illness and death over the last 50 years, with more than twice the number of hospitalizations from A(H3N2) as from A(H1N1) during the past six seasons. We review the emergence, progression, clinical course, etiology, epidemiology, and treatment of the 1968 pandemic and highlight the short- and long-term impact associated with A(H3N2) viruses. The 1968 H3N2 pandemic and its ongoing sequelae underscore the need for improved seasonal and pandemic influenza prevention, control, preparedness, and response efforts. (Am J Public Health. 2020;110:669-676. doi: 10.2105/ AJPH.2019.305557)

In the United States, 1968 is remembered for the military conflict in Vietnam, assassinations of prominent leaders, and widespread public demonstrations, as well as significant scientific achievements such as heart transplant surgeries and manned space flights. Remembered less frequently is the 1968 H3N2 pandemic. Although the estimated morbidity and mortality of this pandemic was only a small fraction of that associated with the 1918 H1N1 pandemic, the ongoing impact of influenza A(H3N2) virus on public health has been profound. The A(H3N2) subtype virus that emerged in 1968 was associated with increased influenza morbidity and mortality globally through 1972. Since then, this subtype has circulated as a seasonal influenza A virus associated with more severe annual

epidemics than those caused by influenza A(H1N1) and influenza B viruses. In this review, we reflect on the 1968 H3N2 pandemic, the continuing public health challenges from A(H3N2) virus, and the need for better prevention and control of seasonal and pandemic influenza.

THE 1968 PANDEMIC

There are typically two influenza seasons in Hong Kong- January through March or April and July through August- but an unusual and sudden increase of patients with influenza-like illness (ILI) presented to government clinics there on July 13, 1968.1 With 500000 ILI cases in July, the outbreak was the largest in Hong Kong since the 1957 H2N2 pandemic.2 The National Influenza Center at the University of Hong Kong isolated the new influenza A(H3N2) virus on July 17 and sent it immediately to the World Influenza Center in London. Additional specimens were sent to the International Influenza Center for the Americas in Atlanta, Georgia (a component of the National Communicable Disease Center, now the US Centers for Disease Control and Prevention [CDC]). Confirmation that the virus strain was a distinct antigenic variant of contemporary influenza viruses prompted a World Health Organization (WHO) warning on August 16.3 At this time, the virus became available to research and vaccine production laboratories.4 Spread was confirmed in August when isolates of the same virus were identified in Singapore, Taiwan, the Philippines,Vietnam, and Malaysia. Thailand, India, the Northern Territory of Australia, and Iran experienced outbreaks in September.5 Air travel by an estimated 160 million persons during the pandemic6 facilitated rapid transmission worldwide.

On September 2, a respiratory specimen from a Marine who had just returned to San Diego, California, from Vietnam produced the first US isolate.7 Before leavingVietnam, the Marine had shared a bunker with a friend recently returned from Hong Kong. An additional 22 ILI cases occurred in San Diego among students and contacts from the Marine Corps Drill Instructors School, with the A(H3N2) virus isolated from 9 of 21 respiratory specimens. Concurrently, military physicians reported outbreaks in Hawaii and Alaska among personnel recently returned from southeast Asia. On September 6, National Communicable Disease Center officials requested cooperation from all state health officers, epidemiologists, and laboratory directors for "monitoring the importation of the virus and in conducting surveillance for influenza."8

Public health investigations reported in the Morbidity and Mortality Weekly Report identified influenza A2/Hong Kong virus (subsequently referred to as influenza A(H3N2) virus) in travelers to the United States from Asia.9 Increased surveillance in the United States continued over the next year, expanding upon systems implemented for the 1957 pandemic and including reports on school and workplace absenteeism, school closings, hospital admissions, and outpatient visits, as well as reported cases and outbreaks. Initially, cases occurred primarily among persons returning from Asia.10

US influenza activity increased dramatically in October. The first reported civilian outbreak in the continental United States was identified in Needles, California, with more than one third of its population reporting ILI. ILI reports in Colorado increased from 62 cases for the week ending November 2 to 670 for the week ending November 9,11 a week in which other western states and Hawaii also reported outbreaks.12 The first outbreaks in eastern states occurred the next week. All 50 states experienced increased school absenteeism during the pandemic; 23 faced school and college closures and 31 saw elevated worker absenteeism. The peak week of influenza activity for most states fell between December 14 and January 11, with pandemic activity generally starting in the western United States and moving eastward13 (Figure 1).

Newspaper articles chronicled the widespread college closures, slowdowns in business and industry, and threats to Christmas mail deliveries. In December, the Apollo 8 astronauts were vaccinated to protect them from pandemic influenza in advance of their December 21 moon- orbiting flight, and President Johnson was hospitalized with a respiratory infection that his aides said "could be called the flu." National concerns were reflected in a December 19 New York Times editorial describing the pandemic as "one of the worst in the nation's history," bemoaning the "amount of discomfort and distress suffered by the millions who have already been hit," and the potential for "billions of dollars" associated with treatment and lost productivity.14

A second, less severe pandemic wave of illness in the United States occurred late in the following season (1969-

1970). Over these two seasons, 70% of excess pneumonia and pandemic influenza deaths in the United States occurred during 1968-1969 season. This was unlike the experience in most countries, where the initial 1968 wave tended to be less severe but was followed by an increasingly severe wave in 1969-1970.15

CLINICAL COURSE

The majority of A(H3N2) virus infections resulted in clinically mild, uncomplicated upper respiratory tract disease. Predominant findings among uncomplicated pandemic cases included malaise, fever, myalgia, cough, headache, coryza, and sore throat. During the initial outbreak in Hong Kong, symptoms were mostly mild without observable excess mortality.16 In a British Royal Air Force study, half of those with serological evidence of infection had no recorded illness.17 All 965 cases reported by the University of Singapore Health Service had a mild clinical course with no hospitalizations, although some experienced atypical symptoms including severe anorexia, nausea, and ocular pain.18 A survey of nearly 7000 US high school students indicated that the median duration of illness was five days,19 although cough and prostration in some cases persisted as long as three weeks.20

However, severe disease did occur. Among pediatric inpatients and outpatients in Washington, DC, influenza A virus infections occurred more frequently during A(H3N2) activity (1968-1976) than during influenza A(H2N2) virus circulation (1957-1968) and were associated with more hospitalizations for pneumonia, bronchiolitis, bronchitis, and croup.21 Some outbreak areas reported complications including pneumonia, myocarditis, and pericarditis. Pulmonary complications in adults included localized primary viral or secondary bacterial pneumonia, or diffuse bilateral pneumonia, occurring early or late in the clinical course, mostly among persons with underlying comorbid conditions.22 Grady Hospital in Atlanta, Georgia reported a threefold increase in staphylococcal pneumonia admissions during the pandemic compared with the previous season. Hospital admissions began increasing in December 1968, and 74% of pneumonia patients hospitalized between January 1 and 5, 1969, had serological evidence of pandemic virus infection.23 Autopsy findings in fatal cases included acute bronchopneumonia, diffuse hemorrhagic or necrotizing pneumonitis, bronchitis, or bronchiolitis; in some cases, bacterial cultures of sputum or lung samples yielded Staphylococcus aureus, Pseudomonas aeruginosa, or other bacterial pathogens.24

ETIOLOGY

The 1968 pandemic was caused by influenza A/Hong Kong/1968 (H3N2) virus. This pandemic virus contained two genes derived from a lowpathogenicity avian influenza A virus and six genes from the A(H2N2) virus that had been circulating among people since its emergence to cause the 1957 H2N2 pandemic.25 The hemagglutinin (HA) gene contained two mutations in its receptor binding site from the closest avian viruses, altering its receptor binding specificity, from preferential binding for a2,3linked sialic acids (viral receptors predominant in birds) to a2,6linked sialic acids (viral receptors predominant in humans).26 However, studies suggest that these binding preferences alone do not determine influenza A entry to human airway cells.27 Additional changes identified in the HA1 subunit of the HA, based on their location, may have affected the HA receptorbinding and fusion activities28 and facilitated human-to-human transmission, enabling the virus to spread quickly.

EPIDEMIOLOGY

The clinical attack rate varied. Milwaukee, Wisconsin, public health authorities reported an overall illness attack rate of 43%.29 A study among inmates of Georgia State Prison chronicled a 40% illness attack rate, and a study of residents of a California retirement community revealed that 10% were symptomatic.30 This may have reflected some preexisting immunity in older age groups, suggested by serological studies revealing antibodies to the virus prior to the pandemic in large percentages of adults aged older than 65 years.31 However, unlike the 1957 H2N2 pandemic, in which 86% of index cases were school age, index cases in 1968 were equally divided among school-aged children and adults.32 Overall, children aged 10 to 14 years comprised the age group with the highest clinical attack rate (40%).33 In 2010, Jackson et al. used a variety of published data sets to estimate that the first-wave basic reproduction number (R0) was between 1.06 and 2.06 and the second-wave R0 was between 1.21 and 3.58.34 A subsequent 2014 meta-analysis of R0 studies revealed an overall median point estimate of 1.8 for the 1968 pandemic H3N2 virus.35 Complications and exacerbation of underlying disease conditions, such as diabetes, cardiac failure, and chronic obstructive pulmonary disease, contributed to excess mortality.36 In the United States,

the pandemic resulted in an estimated 100 000 deaths.37 As with other 20th-century pandemics, large proportions (half in 1968) of pneumonia and influenza deaths occurred in persons younger than 65 years.38

COUNTERMEASURES

Medical advances in the 1960s, primarily the advent of antiviral medications and expansion of influenza vaccine options, provided a stronger arsenal to combat this pandemic than had been available during the 1957 pandemic.

ANTIVIRALS

The first opportunity to assess the effect of antiviral use during a pandemic occurred in 1968. In 1966, the Food and Drug Administration had approved amantadine for chemoprophylaxis of influenza A virus infection-a controversial decision both criticized39 and supported.40 Studies had shown that amantadine inhibited infections of group A influenza viruses by blocking or slowing virus entry into cells.41 The prophylactic effectiveness of amantadine had been demonstrated in some double-blinded randomized controlled trials with experimentally induced influenza and during naturally occurring influenza outbreaks. However, sample sizes in these studies tended to be small and study results were unconvincing to some.42 Studies assessing the effects of amantadine treatment also produced inconsistent results. Clinical findings in some showed amantadine to be effective in reducing the severity and duration of illness when given within 48 hours of symptom development of influenza A, whereas others failed to demonstrate effectiveness. During the pandemic, a multicenter doubleblinded randomized controlled trial in Japan demonstrated a statistically significant reduction in fever duration among laboratory-confirmed pandemic influenza patients treated with amantadine.43 Also, in a study of prison inmates, all indicators of a therapeutic effect of amantadine approached or achieved statistical significance.44

A 1983 Mayo Clinic Symposium on Antimicrobial Agents affirmed the use of amantadine for influenza, reporting prophylactic effectiveness as well as "some" therapeutic effect when amantadine was used early in the course of influenza A virus infection.45 A subsequent Clinical Evidence review46 reported that amantadine was likely to be beneficial in reducing the duration of symptoms when used in early treatment of influenza A in adults. During the 2005-2006 influenza season, high prevalence of amantadine resistance among circulating influenza A viruses prompted changes in recommendations for its use,47 and amantadine has not been recommended for treatment or chemoprophylaxis of influenza A virus infections since then.

Despite the controversies around influenza prophylaxis and treatment during the pandemic, researchers identified a remarkable remission of Parkinson's symptoms in a woman being treated with amantadine to prevent influenza in 1969. This prompted studies that demonstrated significant improvement in Parkinson's symptoms with amantadine use,48 and amantadine has been used to treat Parkinson's disease since that time.

VACCINE

The Division of Biologics Standards of the National Institutes of Health provided the A/Hong Kong/1968 (H3N2) vaccine virus to manufacturers in August 1968. However, before manufacturers had completed studies to determine its feasibility for producing a pandemic vaccine, a new vaccine virus became available. This virus, the Aichi strain from Japan, demonstrated superior vaccine production potential and was supplied to manufacturers on September 9, 1968, 49 and incorporated into a monovalent pandemic influenza vaccine.

Vaccine manufacturers released a first lot of 110 000 pandemic vaccine doses on November 15, 1968. Subsequently, 15 million doses became available by the pandemic's peak50 in January 196951 (Figure 2). After the peak, vaccine demand waned. For most of the population, the pandemic vaccine was "too little and too late,"52 and the effect of the vaccine on reducing pandemic spread was questionable. In January 1969, manufacturers began to phase out production, and unused vaccine remained. Some vaccine became available for use in the southern hemisphere.53

Virologists had been actively exploring methods to improve influenza vaccine technology since the 1957 influenza pandemic, and the 1968 pandemic provided an opportunity to assess these technologies. For example, a split vaccine utilizing only those components of the virus essential to stimulate humoral immunity was authorized in the United States54; it performed comparably to whole virus vaccines, with fewer adverse reactions in adults55 and children.56 The principle of reassortment, a process in which two or more influenza A viruses exchange genetic

material, had been established in 1960 with the combination of a low-yielding A(A2) strain and a standard laboratory strain (A/Puerto Rico[PR]/8).57 In 1968, successful reassortment of the Aichi strain with a standard laboratory strain (A/PR/8) by simultaneous inoculation of chick embryos produced a combined virus with the desired antigenicity of a pandemic virus and the growth characteristics of the standard laboratory strain.58 Reassortment using the A/PR/8 strain has since become standard practice and is used in current vaccine preparation.

To evaluate pandemic H3N2 vaccine effectiveness, officials used a variety of methods. One study compared respiratory illness rates in two Michigan communities.59 Schoolchildren in one community received pandemic vaccine while the other served as an unvaccinated comparison community. Throughout the study, respiratory illness rates in the vaccinated community remained considerably lower than in the comparison community. During the 10 weeks of the season when the Hong Kong A(H3N2) virus was isolated from community residents, the excess rate of self-reported respiratory illness in the unvaccinated community was triple that of the vaccinated community. The authors concluded that vaccination of school-age children resulted in a markedly lower rate of respiratory illness in the entire community. However, Glezen et al. reached a much different conclusion after vaccinating infants and children with the pandemic vaccine. Their results demonstrated that although the vaccine was safe and acceptable for children, there was no evidence that a single dose provided adequate protection.60

In another study of the pandemic vaccine's efficacy, researchers concluded that the attack rate in persons receiving high doses of the pandemic vaccine was at least 50% lower than in those who received the seasonal A(H2) vaccine. In addition, high-dose vaccine recipients who did become ill experienced milder illness, with fewer and shorter fevers and less need for bed rest.61 However, the authors cautioned that the standard dose of the pandemic vaccine was not effective, and multiple doses were not feasible given the timing of the pandemic and existing production parameters. A 2007 Cochrane review of influenza vaccines concluded that onedose or two-dose monovalent pandemic vaccines used in 1968 demonstrated 65% protection against ILI, 93% protection against illness from influenza A(H3N2) virus infection, and 65% protection against hospitalizations.62 However, their review used a solitary study to assess all outcomes except for ILI, which was assessed using four studies, limiting generalizability of the results.

AFTER THE PANDEMIC

Walter Dowdle, who in 1968 was director of the National Communicable Disease Center Laboratory Program in the WHO International Influenza Center for the Americas, declared that all that had been learned since the 1957 H2N2 pandemic had been applied to the 1968 H3N2 pandemic.63 For example, in 1968, the US Advisory Committee on Immunization Practices published recommendations for pandemic vaccine use in August, well before the United States experienced increased pandemic influenza activity, identifying priority vaccination groups to be targeted when pandemic vaccine became available.64 During the 1957 pandemic, priority vaccination groups were identified only after widespread outbreaks.65 The 1968 pandemic also demonstrated the utility of communication networks and US surveillance systems that provided several large study populations for vaccine trials.66

However, the 1968 pandemic also highlighted areas for improvement. Specifically, the 1968 pandemic showed the need for WHO to incorporate a better influenza forecasting system and to pursue further research to improve prevention and control of influenza.67 Precise virological information had been promptly shared during the pandemic, but epidemiological data varied widely between countries in both quantity and quality, because of diverse reporting methods, systems of medical care, and availability and use of laboratory diagnostic services. This prompted WHO officials to introduce a standard surveillance reporting form for National Influenza Centers, which had been implemented by many and had begun to work well by the fall of 1969.68 Global collaboration was also highlighted in October 1969, when the National Communicable Disease Center, WHO, and Emory University hosted an international working conference on Hong Kong pandemic influenza.69 At the conference, Alexander Langmuir, director of epidemiology at the National Communicable Disease Center, emphasized the need for improved influenza surveillance, specifically the collection of more quantitative data regarding disease incidence, age- and sexspecific attack rates, character and severity of complications, socioeconomic factors influencing mortality, and vaccine distribution and use.70

For the past 50 years, the CDC has worked toward these goals; many improvements, particularly in surveillance, have been achieved and were used during the 2009 H1N1 pandemic. US influenza surveillance now collects data from an extensive surveillance network of outpatient and inpatient care settings, as well as virological characterization using nextgeneration sequencing of all viruses received at the CDC. Surveillance systems now also monitor mortality and influenza vaccination coverage. Pediatric influenza deaths are currently included in the Council of State and Territorial Epidemiologists list of nationally notifiable conditions to be reported to the CDC. A wide range of seasonal influenza vaccines is available. Influenza diagnostic tests and antiviral medications with different mechanisms of action and routes of administration are now available in many clinical settings for the diagnosis and treatment of seasonal influenza.

The illnesses and deaths in 1968-1969 were notable but did not approximate the impact of the A(H1N1) virus that emerged in 1918. However, the cumulative impact of A(H3N2) virus infections over the last 50 years has been substantial. The average estimated number of annual hospitalizations during the past six seasons for A(H3N2) virus (675 000) was more than twice that of A(H1N1)pdm09 virus (330 000).71 The 2017-2018 H3N2-predominant influenza season was particularly severe, with record hospitalization rates recorded. On the basis of data from the National Center for Health Statistics (NCHS), the proportion of deaths attributed to pneumonia and influenza that season peaked at 10.8%, the highest percentage recorded since NCHS data were first used for routine influenza surveillance.72

Whereas A(H1N1) virus was the scourge in the early part of the 20th century, A(H3N2) virus has been the predominant cause of influenza disease burden in the early 21st century.

Several factors have contributed to the higher impact of A(H3N2) viruses over the last 50 years. First, A(H3N2) viruses have undergone antigenic change at a much higher rate than influenza A(H1N1) viruses.73 Frequent changes to the hemagglutinin protein have allowed A(H3N2) viruses to evade human immune responses both through (1) conformational changes around important antigenic sites, notably the receptor binding pocket, and (2) increased glycosylation of the hemagglutinin protein shielding the antigenic sites of the virus from antibody binding.74

Secondly, A(H3N2) virus has had a disproportionate impact on older adults. Persons aged 65 years and older have a higher rate of comorbidities that increase their risk for influenza complications, and this group experiences higher mean hospitalization rates during influenza seasons in which H3 viruses predominate than in seasons in which H1 viruses predominate.75 Contributing factors may include waning immunity and decline in vaccine-derived immune protection.76 In addition, older adults may respond less effectively to A(H3N2) virus infections because of immunological imprinting, also referred to as "original antigenic sin."77 This suggests that persons first infected by A(H1N1) virus (i.e., 1918-1957) are protected from severe H1N1 disease but are less protected against severe illness with A(H3N2) virus infection.

Third, when A(H3N2) viruses are propagated in eggs, they change conformation and can lose sites of glycosylation, causing them to differ from the circulating A(H3N2) viruses. This likely contributes to the lower vaccine effectiveness observed for A(H3N2) viruses, especially in older adults,78 highlighting the need for improving the effectiveness of seasonal influenza vaccines through increased antigen content, addition of adjuvants, and ultimately through development of more broadly protective and longer lasting "universal" vaccines.

Since their emergence, influenza A(H3N2) viruses have caused substantial cumulative morbidity and mortality worldwide during seasonal influenza epidemics, greatly exceeding their impact in the first years of the pandemic beginning in 1968. More than 50 years later, A(H3N2) continues to adapt to evade host immunity and cause higher numbers of hospitalizations and deaths than influenza A(H1N1) and B viruses. New therapies and vaccine technologies have been developed, but further improvements in the prevention and control of influenza are still needed and will be critical in preparing for the next influenza pandemic. ÂfPU

CONTRIBUTORS

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Footnote
ENDNOTES
1. W. K. Chang, "National Influenza Experience in Hong Kong, 1968," Bulletin of the World Health Organization 41, no. 3 (1969): 349-351.
2. W. C. Cockburn, P. J. Delon, and W. Ferreira, "Origin and Progress of the 1968-69 Hong Kong Influenza Epidemic," Bulletin of the World Health Organization 41, no. 3 (1969): 345-348.
3. Chang, "National Influenza Experience."
4. Cockburn et al., "Origin and Progress."
5. Ibid.
6. R. F. Grais, J. H. Ellis, and G. E. Glass, "Assessing the Impact of Airline Travel on the Geographic Spread of Pandemic Influenza," European Journal of Epidemiology 18, no. 11 (2003): 1065-1072.
7. R. G. Sharrar, "National Influenza Experience in the USA, 1968-69," Bulletin of the World Health Organization 41, no. 3 (1969): 361-366.
8. Ibid, p. 361.
9. National Communicable Disease Center, "Presumptive A2/Hong Kong Influenza," MMWR. Morbidity and Mortality Weekly Report 17, no. 37 (1968): 338-339.
10. Sharrar, "National Influenza Experience."
11. National Communicable Disease Center, "Influenza," MMWR. Morbidity and Mortality Weekly Report 17, no. 46 (1968): 425-426.
12. Sharrar, "National Influenza Experience."
13. National Communicable Disease Center, "United States Surveillance Summary 1968-1969." MMWR. Morbidity and Mortality Weekly Report 18, no. 85 (1969): 217-219.
14. B. Gwertzman, "Johnson in Hospital With Cold and Fever." New York Times, December 19, 1968, p. 1.
15. C. Viboud, R. F. Grais, B. A. Lafont, M. A. Miller, L. Simonsen, and Group Multinational Influenza Seasonal Mortality Study, "Multinational Impact of the 1968 Hong Kong Influenza Pandemic: Evidence for a Smoldering Pandemic, Journal of Infectious Diseases 192, no. 2 (2005): 233-248.
16. Chang, "National Influenza Experience."
17. D. L. Miller, D. Reid, J. R. Daimond, M. S. Pereira, and P. Chakraverty, "Hong Kong Influenza in the Royal Air Force 1968-70," Journal of Hygiene (London) 71, no. 3 (1973): 535-547.

18. Z. N. Kadri, "An Outbreak of 'Hong Kong 'Flu' in Singapore, I. Clinical Study," Singapore Medical Journal 11, no. 1 (1970): 30-32.
19. L. E. Davis, G. G. Caldwell, R. E. Lynch, R. E. Bailey, and T .D. Chin, "Hong Kong Influenza: The Epidemiologic Features of a High School Family Study Analyzed and Compared With a Similar Study During the 1957 Asian Influenza Epidemic," American Journal of Epidemiology 92, no. 4 (1970): 240-247.
20. Sharrar, "National Influenza Experience."
21. H. W. Kim, C. D. Brandt, J. O. Arrobio, B. Murphy, R. M. Chanock, and R. H. Parrott, "Influenza A and B Virus Infection in Infants and Young Children During the Years 1957-1976. American Journal of Epidemiology 109, no. 4 (1979): 464-479.
22. M. I. Lindsay Jr, E. C. Herrmann Jr, G. W. Morrow Jr, and A. L. Brown Jr, "Hong Kong Influenza: Clinical, Microbiologic, and Pathologic Features in 127 Cases," JAMA 214, no. 10 (1970): 1825-1832.
23. S. W. Schwarzmann, J. L. Adler, R. J. Sullivan Jr, and W. M. Marine, "Bacterial Pneumonia During the Hong Kong Influenza Epidemic of 1968-1969," Archives of Internal Medicine 127, no. 6 (1971): 1037-1041.
24. P. S. Feldman, M. A. Cohan, and W. J. Hierholzer Jr, "Fatal Hong Kong Influenza: A Clinical, Microbiological and Pathological Analysis of Nine Cases," Yale Journal of Biology and Medicine 45, no. 1 (1972): 49-63.
25. Y. Kawaoka, S. Krauss, and R. G. Webster, "Avian-to-Human Transmission of the Pb1 Gene of Influenza a Viruses in the 1957 and 1968 Pandemics," Journal of Virology 63, no. 11 (1989): 4603-4608.
26. S. Van Poucke, J. Doedt, J. Baumann, et al., "Role of Substitutions in the Hemagglutinin in the Emergence of the 1968 Pandemic Influenza Virus," Journal of Virology 89, no. 23 (2015): 12211-12216.
27. A. S. Davis, D. S. Chertow, J. Kindrachuk, et al., "1918 Influenza Receptor Binding Domain Variants Bind and Replicate in Primary Human Airway Cells Regardless of Receptor Specificity," Virology 493 (2016): 238-246.
28. Van Poucke et al., "Role of Substitutions in the Hemagglutinin."
29. F. F. Piraino, E. M. Brown, and E. R. Krumbiegel, "Outbreak of Hong Kong Influenza in Milwaukee, Winter of 1968-69. Public Health Reports 85, no. 2 (1970): 140-150.
30. S. C. Schoenbaum, S. R. Mostow, W. R. Dowdle, M. T. Coleman, and H. S. Kaye, "Studies With Inactivated Influenza Vaccines Purified by Zonal Centrifugation. 2. Efficacy," Bulletin of the World Health Organization 41, no. 3 (1969): 531-535.
31. N. Masurel, "Relation Between Hong Kong Virus and Former Human A2 Isolates and the a-Equ12 Virus in Human Sera Collected Before 1957," Lancet 1, no. 7601 (1969): 907-910.
32. Davis et al., "Hong Kong Influenza: The Epidemiologic Features of a High School Family Study."
33. N. J. Cox and K. Subbarao, "Global Epidemiology of Influenza: Past and Present," Annual Review of Medicine 51, no. 1 (2000): 407-421.
34. C. Jackson, E. Vynnycky, and P. Mangtani, "Estimates of the Transmissibility of the 1968 (Hong Kong) Influenza Pandemic: Evidence of Increased Transmissibility Between Successive Waves," American Journal of Epidemiology 171, no. 4 (2010): 465-478.
35. M. Biggerstaff, S. Cauchemez, C. Reed, M. Gambhir, and L. Finelli, "Estimates of the Reproduction Number for Seasonal, Pandemic, and Zoonotic Influenza: A Systematic Review of the Literature," BMC Infectious Diseases 14, no. 1 (2014): 480.
36. J. S. Nguyen-Van-Tam and A. W. Hampson, "The Epidemiology and Clinical Impact of Pandemic Influenza," Vaccine 21, no. 16 (2003): 1762-1768.
37. W. P. Glezen, "Emerging Infections: Pandemic Influenza," Epidemiologic Reviews 18, no. 1 (1996): 64-76.
38. L. Simonsen, M. J. Clarke, L. B. Schonberger, N. H. Arden, N. J. Cox, and K. Fukuda, "Pandemic Versus Epidemic Influenza Mortality: A Pattern of Changing Age Distribution," Journal of Infectious Diseases. 178, no. 1 (1998): 53-60.
39. A. B. Sabin, "Amantadine Hydrochloride. Analysis of Data Related to Its Proposed Use for Prevention of A2 Influenza Virus Disease in Human Beings," JAMA 200, no. 11 (1967): 943-950.
40. AMA Council on Drugs, "The Amantadine Controversy," JAMA 201, no. 6 (1967): 112-113.

41. W. L. Davies, R.R. Grunert, R.F. Haff, et al., "Antiviral Activity of 1-Adamantanamine (Amantadine)," Science 144, no. 3620 (1964): 862-863.
42. Sabin, "Amantadine Hydrochloride. Analysis of Data."
43. O. Kitamoto, "Therapeutic Effectiveness of Amantadine Hydrochloride in Naturally Occurring Hong Kong Influenza- Double-Blind Studies," Japanese Journal of Tuberculosis and Chest Diseases 17, no. 1 (1971): 1-7.
44. V. Knight, D. Fedson, J. Baldini, R. G. Douglas, and R. B. Couch, "Amantadine Therapy of Epidemic Influenza a(2) (Hong Kong)," Infection and Immunity 1, no. 2 (1970): 200-204.
45. P. E. Hermans and F. R. Cockerill 3rd, "Antiviral Agents," Mayo Clinic Proceedings 58, no. 4 (1983): 217-222.
46. T. Uyeki and A. Winquist, "Influenza," Clinical Evidence no. 6 (2001): 550-556.
47. Centers for Disease Control and Prevention, "High Levels of Adamantane Resistance Among Influenza a (H3n2) Viruses and Interim Guidelines for Use of Antiviral Agents-United States, 2005-06 Influenza Season," MMWR. Morbidity and Mortality Weekly Report 55, no. 2 (2006): 44-46.
48. R. S. Schwab, A. C. England Jr, D. C. Poskanzer, and R. R. Young, "Amantadine in the Treatment of Parkinson's Disease," JAMA 208, no. 7 (1969): 1168-1170.
49. R. Murray, "Production and Testing in the USA of Influenza Virus Vaccine Made From the Hong Kong Variant in 1968-69," Bulletin of the World Health Organization 41, no. 3 (1969): 495-496.
50. "Acute Conditions: Incidence and Associated Disability United States-July 1968-June 1969," in National Center for Health Statistics, ed., Data From the National Health Interview Survey (Rockville, MD: Department of Health, Education and Welfare, 1969).
51. Murray, "Production and Testing in the USA of Influenza Virus Vaccine."
52. M. R. Hilleman, "The Roles of Early Alert and of Adjuvant in the Control of Hong Kong Influenza by Vaccines," Bulletin of the World Health Organization 41, no. 3 (1969): 623-628.
53. Murray, "Production and Testing in the USA of Influenza Virus Vaccine."
54. I. Barberis, P. Myles, S. K. Ault, N. L. Bragazzi, and M. Martini, "History and Evolution of Influenza Control Through Vaccination: From the First Monovalent Vaccine to Universal Vaccines," Journal of Preventive Medicine and Hygiene 57, no. 3 (2016): E115-E120.
55. F. B. Brandon, F. Cox, E. Quinn, E. A. Timm, and I. W. McLean Jr, "Influenza Immunization: Clinical Studies With Ether-Split Subunit Vaccines," Bulletin of the World Health Organization 41, no. 3 (1969): 629-637.
56. F. M. Davenport, A. V. Hennessy, F. M. Brandon, R. G. Webster, C. D. Barrett Jr, and G. O. Lease, "Comparisons of Serologic and Febrile Responses in Humans to Vaccination With Influenza A Viruses or Their Hemagglutinins," Journal of Laboratory and Clinical Medicine 63 (1964): 5-13.
57. E. D. Kilbourne and J. S. Murphy, "Genetic Studies of Influenza Viruses. I. Viral Morphology and Growth Capacity as Exchangeable Genetic Traits. Rapid in Ovo Adaptation of Early Passage Asian Strain Isolates by Combination With Pr8," Journal of Experimental Medicine 111, no 3 (1960): 387-406.
58. E. D. Kilbourne, "Future Influenza Vaccines and the Use of Genetic Recombinants," Bulletin of the World Health Organization 41, no 3 (1969): 643-645.
59. A. S. Monto, F. M. Davenport, J. A. Napier, and T. Francis Jr, "Effect of Vaccination of a School-Age Population Upon the Course of an A2-Hong Kong Influenza Epidemic," Bulletin of the World Health Organization 41, no 3 (1969): 537-542.
60. W. P. Glezen, F. A. Loda, and F. W. Denny, "A Field Evaluation of Inactivated, Zonal-Centrifuged Influenza Vaccines in Children in Chapel Hill, North Carolina, 1968-69," Bulletin of the World Health Organization 41, no 3 (1969): 566-569.
61. Schoenbaum et al., "Studies With Inactivated Influenza Vaccines."
62. T. O. Jefferson, D. Rivetti, C. Di Pietrantonj, A. Rivetti, and V. Demicheli, "Vaccines for Preventing Influenza in Healthy Adults," Cochrane Database of Systematic Reviews no. 2 (2007): CD001269.
63. AMA Editorial Board, "What the Hong Kong Flu Has Taught," JAMA 207, no. 11 (1969): 2016-2017.
64. National Communicable Disease Center, "Recommendation of the Public Health Service Advisory Committee on

Immunization Practices," MMWR. Morbidity and Mortality Weekly Report 17, no. 35 (1968): 323.
65. D. A. Henderson, B. Courtney, T. V. Inglesby, E. Toner, and J. B. Nuzzo, "Public Health and Medical Responses to the 1957-58 Influenza Pandemic. Biosecurity and Bioterrorism 7, no. 3 (2009): 265-273.
66. E. Etheridge, Sentinel for Health (Berkeley: University of California Press, 1992).
67. D. E. M. Blakely, Mass Mediated Disease: A Case Study Analysis of Three Flu Pandemics and Public Health Policy (Lanham, MD: Lexington Books, 2006).
68. Cockburn et al., "Origin and Progress."
69. Etheridge, Sentinel for Health.
70. A. D. Langmuir and J. Housworth, "A Critical Evaluation of Influenza Surveillance," Bulletin of the World Health Organization 41, no. 3 (1969): 393-398.
71. Centers for Disease Control and Prevention, "Disease Burden of Influenza," https://www.cdc.gov/flu/about/burden/index.html (accessed November 12, 2019).
72. R. Garten, L. Blanton, A. I. A. Elal, et al., "Update: Influenza Activity in the United States During the 2017-18 Season and Composition of the 2018-19 Influenza Vaccine," MMWR. Morbidity and Mortality Weekly Report 67, no. 22 (2018): 634-642.
73. H. Yang, P. J. Carney, J. C. Chang, Z. Guo, J. M. Villanueva, and J. Stevens, "Structure and Receptor Binding Preferences of Recombinant Human A(H3N2) Virus Hemagglutinins," Virology 477 (2015): 18-31.
74. E. A. Belongia and H. Q. McLean, "Influenza Vaccine Effectiveness: Defining the H3n2 Problem," Clinical and Infectious Diseases 69, no. 10 (2019): 1817-1823.
75. A. P. Budd, L. Beacham, C. B. Smith, et al., "Birth Cohort Effects in Influenza Surveillance Data: Evidence That First Influenza Infection Affects Later Influenza-Associated Illness," Journal of Infectious Diseases 220, no. 5 (2019): 820-829.
76. C. Henry, N. Y. Zheng, M. Huang, et al., "Influenza Virus Vaccination Elicits Poorly Adapted B Cell Responses in Elderly Individuals." Cell Host &Microbe 25, no. 3 (2019): 357-366.e6.
77. A. S. Monto, R. E. Malosh, J. G. Petrie, and E. T. Martin, "The Doctrine of Original Antigenic Sin: Separating Good From Evil," Journal of Infectious Diseases 215, no. 12 (2017): 1782-1788.
78. E. A. Belongia, M. D. Simpson, J. P. King, et al., "Variable Influenza Vaccine Effectiveness by Subtype: A Systematic Review and Meta-Analysis of Test- Negative Design Studies," Lancet Infectious Diseases 16, no. 8 (2016): 942-951.

DETAILS

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The Occupational Safety and Health Act at 50: Introduction to the Special Section

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ABSTRACT (ENGLISH)

This special section of AJPH commemorates the 50th anniversary of the OSH Act by reviewing the past, assessing the present, and proposing the future direction of occupational safety and health regulation. It features an incomparable group of experts presenting their views on a range of important issues. The OSH Act is a public health law, an employment law, and an environmental law. It has unprecedented scope by setting minimum safety and health standards for substantially all private sector workplaces. The OSH Act prescribes notice and comment rulemaking for new standards, requires preinspection compliance by employers, authorizes the secretary of labor to assess civil monetary penalties and impose abatement orders for noncompliance, and establishes administrative adjudications of contested enforcement proceedings by an independent agency of commissioners and administrative law judges.

FULL TEXT

The year 1970 was an especially turbulent one in the United States. The Vietnam War still raged (it would last another five years), sparking continued protests on college campuses and in the streets. The pioneering civil rights legislation of the 1960s led to, among other things, calls for greater women's rights, disability rights, gay rights, and workers' rights. The first Earth Day (April 22, 1970) and the establishment of the Environmental Protection Agency (December 2, 1970) are examples of and responses to public demands for safe and healthful air, water, consumer products, and workplaces.

Even in such a dynamic historical setting, the Occupational Safety and Health Act of 1970 (OSH Act), signed into law on December 29, 1970, was groundbreaking. Its purpose, as proclaimed in section 2(b), is "to assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources." The task was urgent and daunting, as Congress received testimony that each year an estimated 14 500 workers died in workplace accidents and there were 390 000 new cases of occupational disease.1

The OSH Act is a public health law, an employment law, and an environmental law. It has unprecedented scope by setting minimum safety and health standards for substantially all private sector workplaces. The OSH Act prescribes notice and comment rulemaking for new standards, requires preinspection compliance by employers, authorizes the secretary of labor to assess civil monetary penalties and impose abatement orders for noncompliance, and establishes administrative adjudications of contested enforcement proceedings by an independent agency of commissioners and administrative law judges.2

Early on, those charged with implementing the OSH Act realized the practical difficulties of attaining the lofty goals of the statute. To begin with, there were too few occupational safety and health professionals, including safety engineers and industrial hygienists. Next, many of the interim safety and health standards adopted under section 6(a) (standards originally promulgated under other federal laws with limited applicability and privately developed national consensus standards) were outdated, confusing, or inadequate. Finally, many businesses strongly opposed the federal government's enforcement role, especially unannounced inspections and government-mandated changes to their work processes.

During the past five decades, structural deficiencies of the statute, such as the contentious, resource draining, and glacial process for promulgating new standards, limited the effectiveness of the law. Nevertheless, the OSH Act has had a significant symbolic and normative effect. The OSH Act declares a national policy of safe and healthful workplaces, sets minimum standards, and facilitates beneficial interventions by safety and health professionals, state Occupational Safety and Health Administration (OSHA) plans, safety-conscious employers, unions, and other interested parties.

This special section of AJPH commemorates the 50th anniversary of the OSH Act by reviewing the past, assessing the present, and proposing the future direction of occupational safety and health regulation. It features an incomparable group of experts presenting their views on a range of important issues.

It begins with historians David K. Rosner and Gerald Markowitz (p. 622) exploring the history ofoccupational safety and health from the Civil War to the present. They note that struggles over working conditions featured prominently in labor-management conflict throughout the 20th century.

The OSH Act established the National Institute for Occupational Safety and Health (NIOSH), part ofthe Centers for Disease Control and Prevention, to research workplace hazards. John Howard (p. 629), director of NIOSH, discusses the activities of his agency in each ofthe past five decades. Significantly, in addition to traditional hazards, NIOSH also has studied and issued guidance documents on newer and emerging issues, including ergonomic hazards, secondhand smoke, and workplace violence.

David Michaels, former head of OSHA, and Jordan Barab contributed an analytic essay (p. 631) to assess the regulation of workplace safety and health, including the effects ofnew hazards and differing roles of employer and employee. Among their proposals are extending OSH Act coverage to all workers, including public sector employees and workers on small farms, streamlining the standards-promulgation process, and enhancing protections for whistleblowers.

The OSH Act increased the demand for occupational medical services, for example OSHAmandated medical examinations of workers exposed to toxic substances. Beth A. Baker et al. (p. 636) discuss the changing roles of occupational physicians as the economy has moved from a manufacturing to a service base. Today, occupational physicians are less likely to work in corporate medical departments and more likely to work in clinical settings to prevent and treat occupational injury and illness.

The OSH Act also established the National Commission on State Workmen's Compensation Laws. Leslie I. Boden (p. 638) reviews the record of the commission and notes that states adopted many of the recommendations from its 1972 report, thereby improving state workers' compensation systems. He urges the establishment of another national workers' compensation body to address the "race to the bottom" characterizing many inadequate state programs.

A common theme of several articles in the special section is the effect of new hazards and new work arrangements. David Weil (p. 640) uses the term "fissured workplace" to encompass outsourcing, contracting and subcontracting, franchising, and platform business models. These relationships often limit employer duties and contribute to unsafe working conditions. He recommends extending the obligations of a "controlling employer" beyond general contractors on a construction site to all comparable employers.

Margaret Seminario (p. 642), giving the labor perspective, applauds the tremendous reduction in workplace fatalities, especially in hazardous industries. Yet, she contends that the OSH Act's emphasis on OSHA and employers often excludes workers from safety and health activities. She asserts that the OSH Act "should require all employers to establish a safety and health program, which fully involves workers and their representatives, to identify and fix hazards, whether the hazard is covered by a specific OSHA standard or not."

Richard E. Fairfax (p. 644) provides the employer perspective. He notes that the OSH Act led to increased membership in safety and health professional organizations and the development of many safety and health products. Interestingly, he also advocates requiring all employers to establish a basic safety and health program "that would include management leadership, employee involvement, training, hazard recognition and assessment, and hazard prevention and control/mitigation."

Interdependent global economies create occupational safety and health concerns along supply chains and among trading partners. Deborah Greenfield (p. 646) of the International Labour Organization observes that even as the focus in developed countries has shifted to new hazards and work practices, some developing countries still suffer horrific workplace events, such as the factory collapse in Bangladesh in 2013 that killed more than 1100 workers and injured more than 2500.

Overall, the articles in this special section underscore the need to update the provisions of the OSH Act and its

standards to reflect new scientific evidence, technological developments, and economic realities in contemporary workplaces. Although the essential legal foundation of the OSH Act was established 50 years ago, the task of ensuring workers a safe and healthful workplace in light of current conditions remains ongoing. .4JPI-I

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CONFLICTS OF INTEREST

The author has no conflicts of interest to declare.

Sidebar

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References

REFERENCES

1. Report of the Senate Committee on Labor and Public Welfare (submitted to accompany S. 2193, the Williams Bill), S. Rep. 91-1282, 91st Cong., 2d Sess. 1-5 (October 5, 1970).

2. Rothstein MA. Occupational Safety and Health Law. Eagan, MN: Thomson Reuters; 2020: 8-11.

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Influenza Vaccination Coverage of Health Care Personnel in Los Angeles County Hospitals, 2016–2017

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ABSTRACT (ENGLISH)

The objective of the Los Angeles County, California (LAC), health care personnel (HCP) influenza vaccination improvement intervention was to increase HCP influenza vaccination coverage during the 2016-2017 influenza season via targeted outreach to LAC acute care hospitals. We selected 13 facilities for intervention and received tailored recommendations from a menu of evidence-based practices. Following the season, each hospital in the

intervention group experienced a significant increase in vaccination coverage, which increased the LAC countywide average for all hospitals by 5%, from 74% to 79%. (Am J Public Health. 2020;110:693-695. doi:10.2105/AJPH.2019.305555)

FULL TEXT

Headnote

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Vaccination of health care personnel (HCP) has been demonstrated to be an effective approach for protecting patients from health care-associated influenza infections in acute care settings.1 Healthy People 2020 established the national goal that 90% of HCP receive annual influenza vaccination.2

INTERVENTION

After years oflow vaccination coverage among its HCP, Los Angeles County, California (LAC), enacted a health officer order in 2013 mandating that HCP in acute care hospitals either be vaccinated for seasonal influenza or wear a mask during the influenza season. Despite these efforts, the effect on vaccination coverage has varied, and many facilities remained short of the 90% goal.3 Our objective was to increase HCP influenza vaccination in LAC via targeted outreach to acute care hospitals identified as having suboptimal HCP influenza vaccination coverage.

PLACE AND TIME

The LAC Department of Public Health (DPH) developed the intervention in July 2016 and conducted it from September 2016 through April 2017 in LAC.

PERSON

The Centers for Disease Control and Prevention's (CDC's) National Healthcare Safety Network (NHSN) data were used to characterize HCP influenza vaccination coverage among the 97 acute care hospitals in LAC during the 2015-2016 influenza season. Facilities with vaccination coverage within the lowest quartile in LAC for the 2015-2016 season were approached to participate, with an emphasis on those with the lowest coverage. Thirteen facilities volunteered for the intervention, with approximately 30 000 HCP affected by the intervention. Vaccination coverage was defined as the percentage of HCP-including employees, licensed independent practitioners, adult students/trainees and volunteers, and other contract personnel-who received their influenza vaccination on site at the hospital or elsewhere during the influenza season.

PURPOSE

The purpose of the intervention was to improve HCP influenza vaccination rates among acute care hospitals in LAC. Improvement opportunities were identified through an audit tool, and evidence-based recommendations were provided on the basis of the audit tool findings.

Nationally, 79% of HCP reported receiving an influenza vaccination for the 2015-2016 season; in LAC, the average HCP influenza vaccination coverage among acute care facilities was 73%, and coverage at 15 facilities (16%) was below 60%.4 Increasing HCP influenza vaccination coverage can decrease nosocomial influenza, a condition that can lead to severe complications and increased costs for vulnerable patients.

IMPLEMENTATION

The intervention was implemented over three steps. First, the DPH sent recruitment letters to the chief executive officers at the 24 lowest-quartile facilities before the 2016-2017 season. The letters explained the importance of HCP vaccination, their hospital's vaccination coverage for the previous season and ranking among hospitals in LAC, and the opportunity to voluntarily participate in the HCP influenza vaccination improvement intervention. Thirteen

facilities chose to voluntarily participate in the intervention, aiming to increase the vaccination coverage in their facilities.

Second, the DPH held one in-person and two telephone meetings with infection preventionists and employee health directors at each intervention hospital before and during the 2016-2017 influenza season. A standardized assessment tool was created to evaluate the hospital's 2015-2016 vaccination campaign strategies and to determine facility needs for the upcoming season. This DPH-produced tool was developed by using evidence-based practices from the US Department of Health and Human Services, the Advisory Committee on Immunization Practices, and published literature (Figure A, available as a supplement to the online version ofthis article at http://www.ajph.org). Examples of assessed topics included use of mobile carts and education campaigns, and perceived barriers to increased vaccination coverage.7 On the basis of assessment results, the DPH provided customized evidencebased recommendations for each hospital's 2016-2017 vaccination campaign. The DPH also provided materials to intervention hospitals, including posters, flyers, forms to document vaccine acceptance or declination, a tracking log sheet, and prototype e-mail messages. Facilities implemented the provided recommendations by delegating staff to vaccinate HCP throughout the facility, provided visible vaccination of leadership, and adopted new ways of tracking HCP influenza coverage within their facility.

Lastly, after the 2016-2017 season, the DPH conducted a postintervention assessment with each intervention hospital to gather feedback and information on improvements achieved during the hospital's vaccination campaign. The postintervention assessment identified newly implemented campaign strategies for the 13 hospitals and found themes in barriers and successes.

EVALUATION

We obtained HCP vaccination data from the NHSN at the end of the 2016-2017 season. We compared changes in vaccination coverage between influenza seasons for each facility via McNemar's tests. We compared intervention and nonintervention facilities' mean coverages via the Mann-Whitney U test. We performed all analyses using SAS Version 9.4 (SAS Institute, Cary, NC). The intervention achieved its goal of increasing influenza vaccination in the 2016-2017 season among HCP in acute care hospitals with the lowest vaccination coverage in LAC. Each hospital in the intervention group experienced a significant increase in vaccination coverage (Table 1).

Intervention facilities had a mean vaccination coverage of 77.8% (range = 63.8%-92.5%) in the 2016-2017 season, compared with 55.4% (range = 38.2%66.0%) in the 2015-2016 season. Countywide vaccination coverage increased from 74% in the 2015-2016 season to 79% in the 2016-2017 season. Mean increase in pre- and postintervention vaccination coverage was significantly higher among intervention hospitals (22.6%; range = 4.3%46.1%) versus all others in LAC (1.3%; range = -15.8% to 26.6%; n = 77), although the ultimate mean vaccination rate was similar to that of the nonintervention hospitals. Of note, the intervention facilities had a substantially lower mean vaccination rate than nonintervention facilities dating back to the 2012-2013 season (Figure 1).

ADVERSE EFFECTS

The postintervention evaluation identified persistent barriers to implementation of the strategies. Hospital employee health directors might not always have the power to change individual vaccination decisions. Vaccination campaign strategies occasionally required additional hospital staff time and resources, in addition to managing a high turnover of employee health staff during the influenza season. Although hospitals' costs were unknown to the DPH, additional costs and supplementary resources could have been required to implement the recommended strategies.

SUSTAINABILITY

Implementation of this intervention required limited resources. The DPH used the existing evidence base of successful vaccination strategies in the assessment tool to craft recommendations. Minimal staff time was needed for the initial assessment, to provide facilities with campaign recommendations and to conduct the postintervention assessment. Data from the postintervention assessment showed that successful strategies were implemented to increase HCP influenza vaccination coverage, including leadership support and tracking unit-based vaccination rates. Participating hospital stakeholders found the intervention to be helpful in analyzing their data and making improvements to their vaccination campaign. LAC has implemented the intervention in the continued influenza

seasons with a new subset of facilities targeted from the bottom quartile of LAC hospitals. Countywide vaccination coverage has increased to 83% for the 2018-2019 season.

PUBLIC HEALTH SIGNIFICANCE

This intervention was ultimately associated with an increase in influenza vaccination of HCP, an important factor for decreasing influenza-related morbidity in acute care hospitals. We have demonstrated that public health departments can serve as hubs to disseminate best practices for HCP influenza vaccination campaigns to community health care partners. By enacting targeted strategies in hospitals, vaccination coverage has increased and moved the entire region closer to the Healthy People 2020 goal of 90% coverage.

CONTRIBUTORS

T. Kamali was responsible for implementing the program. All authors contributed to the analysis of the of the influenza project and to the writing and revisions of the article.

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We thank the infection preventionists, employee health directors, chiefexecutive officers, health care personnel, and other engaged staff from the participating intervention hospitals for their cooperation and dedication to this initiative. We are grateful to Merle Baron, Juliet Bugante, Crystal Cadavid, and Alicia Pucci, who acted as liaison public health nurses and conducted outreach to hospitals. We also thank Sharon Sakamoto, Ben Schwartz, and Patricia Marquez for their assistance.

CONFLICTS OF INTEREST

The authors report no conflicts ofinterests.

HUMAN PARTICIPANT PROTECTION

This project was conducted as part of routine public health activity. It did not involve the collection or analysis of data from human participants and therefore did not require institutional review board approval.

Sidebar

ABOUT THE AUTHORS

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References

REFERENCES

1. Bénet T, Régis C, Voirin N, et al. Influenza vaccination of healthcare workers in acute-care hospitals: a case-control study of its effect on hospital-acquired influenza among patients. BMC Infect Dis. 2012;12(1):30.

2. US Dept of Health and Human Services, Office of Disease Prevention and Health Promotion. Healthy People 2020. Available at: https://www.healthypeople.gov/2020/ topics-objectives/topic/immunization-and-infectious-diseases/objectives. Accessed May 2, 2018.

3. Billingsley K. Mandatory Reporting of Influenza Vaccination/Declination ofHospital Personnel. Sacramento, CA: Health and Human Services Agency, California Dept of Public Health; 2010.

4. Black CL, Yue X, Ball SW, et al. Influenza vaccination coverage among health care personnel-United States, 2015-16 influenza season. MMWR Morb Mortal Wkly Rep. 2016;65(38): 1026-1031.

5. Salgado CD, FarrBM, Hall KK, Hayden FG. Influenza in the acute hospital setting. Lancet Infect Dis. 2002;2(3):145-155.

6. Joseph C, Togawa Y, Shindo N. Bacterial and viral infections associated with influenza. Influenza Other Respir Viruses. 2013;7:105-113.

7. Pearson ML, Bridges CB, Harper SA, Healthcare Infection Control Practices Advisory Committee (HICPAC), Advisory Committee on Immunization Practices (ACIP). Influenza vaccination of health-care personnel: recommendations of the Healthcare Infection Control Practices Advisory Committee (HICPAC) and the Advisory Committee on Immunization Practices (ACIP). MMWR Recomm Rep. 2006;55(RR-2):1-16.

DETAILS

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My Year With AJPH: Insights From a Student Editor

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ProQuest document link

FULL TEXT

Many readers of AJPH may not know that tucked away in the journal's masthead immediately after the table of contents is the name ofthe student editor, a PhD student who has been afforded the opportunity to learn from seasoned journal editors and to help mold the content you see before you each month. For the past year, I have been that student, and this is my reflection on my time with AJPH.

The fellowship began with an in-person meeting of AJPH editors and AJPH Editorial Board members in Washington, DC. Although I was intimidated by the collective public health pedigree gathered in the AJPH offices, my trepidation was quickly dissipated by warm greetings from the editors. The meeting served both to reflect on submissions and published articles in the past year and to brainstorm content for future special sections and supplements of thejournal. This was my first hint ofthe scale at which journal staff operate: AJPH received 3404 submissions in 2019, with an average of 1.5 months from submission to decision, and has a presence beyond the digital and print magazine that includes a Twitter feed (@AMJPublicHealth), a Student Think Tank (@AJPHThinkTank) comprising masters and doctoral students from across the United States who advise on journal content, and both English- and Chineselanguage podcasts (https://soundcloud.com/alfredomorabia) ranging in topic from "Public Health Workforce: Threatened by Mass Extinction" (http:// bit.ly/2OPKOpi) to "Institutional Racism and the Health Gap Plaguing the Nation" (http://bit.ly/ 38qV4MI).

In addition to expanding my understanding of journal operations, the fellowship has provided me with hands-on experience and mentorship from journal editors. I worked with Editor-in-Chief Alfredo Morabia to identify editorialists for more than 170 articles accepted for publication and in doing so have been exposed to the varied forms that public health research can take: from articles on the economic vulnerability of female health care workers and the impact ofpolitical economy on population health to special sections of the journal dedicated to gun violence and water rights. I also worked with Deputy Editor Farzana Kapadia and several associate editors to review submitted manuscripts to determine their relevance to the AJPH audience. With the safety net ofthe editors' guidance, I was able to work with authors to refine and publish their study findings, and felt pride in shepherding high-quality

research into the evidence base.
While I expected the fellowship to hone my ability to review and edit, the most impressive aspect extended beyond professional development and illuminated the role of AJPH in society at large. WhileIhadbeentrainedto considerajournal'simpact factor as a hallmark ofprestige, journal staffseemed to place more emphasis on (and pride in) contributing to public dialogue. During the annual editors' meeting, we reviewed AJPH articles that featured prominently in news and popular media stories, including a New York Times article on the health threat of ageism (https://nyti.ms/37pHQ1x) and a Huffington Post article on suicide among queer youths (http://bit.ly/ 2wgGRDR). AJPHs role in shaping social discourse has shifted my view ofpublishing, from a necessity of academia to an essential mouthpiece for our collective science, and perhaps offers a more salient indication of journal impact.
The end of the fellowship in March 2020 will also mark my final academic quarter of doctoral course work. I look forward to entering my dissertation experience with a more nuanced view of public health research and publishing afforded by this opportunity and thank the editors for their support and guidance. For doctoral students interested in assuming the mantle of student editor, the next fellowship announcement will be circulated through the schools and programs of public health in January 2021. JfPU
11 Years Ago
OSHA as a Landmark
The OSHA Act of 1970 was landmark legislation, straddling the border between labor law and public health. It expressed a stunning set of principles, notably that every working man and woman is entitled to safe and healthful working conditions, and that employers are responsible for work being free from all recognized hazards.The full realization of Congress's vision will be beyond reach without significant new steps.... [T]hese include the following. a requirement that business owners certify that their workplaces have passed an annual inspection for OSHA compliance .. .; a requirement that employers have safety and health management systems that effectively find and fix recognized hazards ...; increased public understanding that workplace safety is part of America's promise of fairness, justice, and human rights.
From AJPH, March 2008, p. 421
44 Years Ago
Workers' Health
Likewise, OSHA has been opposed from the outset by political forces.The worst example of thisopposition istheuseofOSHAasacampaign tool by the Nixon-Ford Administrations, both in 1972 and in the upcoming Presidentialelection. The Watergate investigations uncovered a 1972 memo from Assistant Secretary of Labor George C. Guenther, then in charge of OSHA, to Under Secretary Lawrence Silberman, suggesting OSHA as a means of raising money and support from industry for PresidentNixon's election campaign by assuring that no highly controversial new occupational health or safety standards would be proposed. Since few new standards have been promulgated by OSHA, one is forced to conclude that such campaign promises were made-and kept.
From AJPH, June 1976, p. 529

DETAILS

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Cumulative Prevalence of Confirmed Maltreatment and Foster Care Placement for US Children by Race/Ethnicity, 2011–2016

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ABSTRACT (ENGLISH)

Objectives. To estimate the cumulative prevalence of confirmed child maltreatment and foster care placement for US children and changes in prevalence between 2011 and 2016. Methods. We used synthetic cohort life tables and data from the Adoption and Foster Care Analysis and Reporting System and the National Child Abuse and Neglect Data System and population counts from the Centers for Disease Control and Prevention. Results. US children's cumulative prevalence of confirmed maltreatment remained stable between 2011 and 2016 at about 11.7% (95% confidence interval [CI] = 11.6%, 11.7%) of the population and increased by roughly 11% for foster care placement from 4.8% (95% CI = 4.8%, 4.8%) to 5.3% (95% CI = 5.3%, 5.4%). American Indian/Alaska Native children experienced the largest change, an 18.0% increase in confirmed maltreatment risk from 13.4% (95% CI = 13.1%, 13.6%) to 15.8% (95% CI = 15.6%, 16.1%) and a 21% increase in foster care placement risk from 9.4% (95% CI = 9.2%, 9.6%) to 11.4% (95% CI = 11.2%, 11.6%). Conclusions. Confirmed child maltreatment and foster care placement continued to be experienced at high rates in the United States in 2012 through 2016, with especially high risks for American Indian/Alaska Native children. Rates of foster care have increased, whereas rates of confirmed maltreatment have remained stable. (Am J Public Health. 2020;110:704-709. doi:10.2105/AJPH.2019.305554)

FULL TEXT

Headnote

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Methods. We used synthetic cohort life tables and data from the Adoption and Foster Care Analysis and Reporting System and the National Child Abuse and Neglect Data System and population counts from the Centers for Disease Control and Prevention.

Results. US children's cumulative prevalence of confirmed maltreatment remained stable between 2011 and 2016 at about 11.7% (95% confidence interval [CI] = 11.6%, 11.7%) of the population and increased by roughly 11% for foster care placement from 4.8% (95% CI = 4.8%, 4.8%) to 5.3% (95% CI = 5.3%, 5.4%). American Indian/Alaska Native children experienced the largest change, an 18.0% increase in confirmed maltreatment risk from 13.4% (95% CI = 13.1%, 13.6%) to 15.8% (95% CI = 15.6%, 16.1%) and a 21% increase in foster care placement risk from 9.4% (95% CI = 9.2%, 9.6%) to 11.4% (95% CI = 11.2%, 11.6%).

Conclusions. Confirmed child maltreatment and foster care placement continued to be experienced at high rates in the United States in 2012 through 2016, with especially high risks for American Indian/Alaska Native children. Rates of foster care have increased, whereas rates of confirmed maltreatment have remained stable. (Am J Public Health. 2020;110:704-709. doi:10.2105/AJPH.2019.305554)

Children who suffer maltreatment and foster care placement are a vulnerable population at high risk of poor mental and physical health throughout the life course.1-3 The prevalence of confirmed maltreatment and foster care placement are traditionally calculated based on point-in-time estimates,4 which provide limited insight into the number ofchildren who will ever experience these events. Earlier research also using synthetic cohort life tables5 and data from the National Child Abuse and Neglect Data System (NCANDS)6 and Adoption and Foster Care Analysis and Reporting System (AFCARS)7 demonstrated that the cumulative prevalence of confirmed maltreatment8 and foster care placement9 for US children tells a very different story than do annual estimates, with 12% of US children ever having a confirmed maltreatment case8 and 6% ofUS children ever being placed in foster

care.9 For Black and American Indian/Alaska Native children, these risks were higher. Black children had cumulative risks ofapproximately 20% for a case of substantiated or confirmed child maltreatment through the child welfare system8 and 10% for foster care placement.9 The cumulative prevalence of foster care placement for American Indian/Alaska Native children has been as high as 15%.9

Although more recent estimates of the cumulative prevalence of experiencing a maltreatment investigation are available,10 estimates of the cumulative prevalence of confirmed maltreatment and foster care placement have not been produced since 2011. We sought to provide updated estimates of these risks for all children in the United States and to examine race/ethnicityspecific risks of these events from 2012 onward, using the most recent data available.

METHODS

We used 2004 to 2016 data from the NCANDS Child Files and AFCARS Foster Care Files, which allowed us to report on confirmed maltreatment and foster placements, respectively, and we used 2004 to 2016 total population counts from the Centers for Disease Control and Prevention's bridged-race population estimates. These data include information on all 47 732 097 investigated maltreatment reports and all 9 210 542 foster care child-years between 2004 and 2016. The AFCARS data include annual data on all children in state or local foster care systems, with national data available from 2000 to the present.

The NCANDS data records child caselevel information on reports of child abuse or neglect that receive a response from a state or local child welfare agency. They do not include cases in which a report was filed but the agency did not respond (screened-out cases). Current NCANDS files include all states; however, reporting in the NCANDS system is voluntary, and some states failed to report data earlier in the time series (Table A [available as a supplement to the online version of this article at http://www. ajph.org]). We adjusted for the varying inclusion of states in the NCANDS file by adjusting joining state-level NCANDS data to state-level population data, ensuring that our population denominators adjusted for NCANDS nonreporting.

Our period life table method depended on 3 inputs: (1) counts of children who experienced a first report of child abuse or neglect that was confirmed by a child welfare agency by child age and reported race/ ethnicity, (2) counts of children experiencing a first foster care placement by child age and reported race/ethnicity, and (3) the state-level population of children by age and race/ethnicity. We defined confirmed maltreatment as a reported case of maltreatment that was received by child protective services; investigated; and, ultimately, confirmed, indicated, or directed to alternative response. We retained the first episode of confirmed maltreatment for each unique child identifier in NCANDS and then constructed state-year counts by child age and race/ethnicity.

We followed a parallel method for foster care: we obtained the first episode in which a child was removed from her or his home and placed in foster care by unique child ID and then constructed state-year counts by age and race/ethnicity. We preserved state-level totals to ensure that we obtained the appropriate population denominator when joining to age- and race/ethnicity-specific population data provided in the US population data compiled by the Surveillance, Epidemiology and End-Results Program of the National Cancer Institute, as adapted from US Census Population Estimates Program data.

We defined a child's race/ethnicity with the following set of mutually exclusive categories: non-Hispanic White, nonHispanic Black, Hispanic (and not American Indian or Alaska Native), non-Hispanic Asian or Pacific Islander, and American Indian or Alaska Native (Hispanic or non-Hispanic). Rates of missingness on children s racial/ethnic group are low in the AFCARS, with an average of 1.9% of cases missing race/ethnicity in each state-year file. In the NCANDS, missingness on racial/ethnic information is more variable. We relied on multiple imputations of missing race/ethnicity data estimated using multiple imputation via chained equations for both the AFCARS and NCANDS.11 We adjusted reported SEs and confidence intervals (CIs) to include between-imputation variance.

We used synthetic cohort life table analysis to estimate US cumulative risks of confirmed maltreatment and foster care placement before age 18 years, the same method as previous research estimating these quantities through 2011.8,9 Briefly, synthetic cohort life tables use aggregate counts of an age-specific incidence of an event of interest (in our study, confirmed maltreatment and foster care placement) to estimate risks of experiencing the event

conditional on survival or nonevent to each age interval. The age interval we examined was 1-year age intervals spanning childhood, from age 0 through 17 years.

The synthetic cohort life table models what a hypothetical cohort would experience ifit were to experience the age-specific risks of the 2 events of interest we calculated during the 2004 to 2016 period. In the absence of population-level longitudinal data on child welfare system involvement in the United States, the synthetic cohort life table serves as an appropriate tool for this investigation. We focused on the cumulative risks of ever experiencing confirmed maltreatment and foster care placement by age 18 years rather than age-specific risks or cumulative risks at earlier points in the life course, as presented in Figures 1 and 2 and Tables 1 and 2. All risk estimates are accompanied by 95% CIs, and all code we used in the analysis is available in a replication 12 repository.

RESULTS

Figure 1 and Table 1 present the annual cumulative prevalence of confirmed maltreatment by age 18 years for 2004 to 2016. The 2004 to 2011 estimates confirmed that maltreatment prevalence is slightly lower (~5%) than published estimates9 because of recent data updates. The most recent data before our estimates report a cumulative risk of confirmed maltreatment of 12% for all US children. Since then, between 2011 and2016, the cumulative prevalence of confirmed maltreatment for all children remained relatively stable. Meanwhile, as shown in Figure 2 and Table 2, the cumulative risk offoster care placement increased: according to 2016 estimates, 5.3% (95% CI = 5.3%, 5.4%) of all children will ever be placed in foster care by age 18 years, a 10% higher risk than in 2011 (4.8%; 95% CI = 4.8%, 4.8%).

There is substantial racial ethnic variation in the risks of experiencing these events. Black children have the highest risk of confirmed maltreatment at 18.4% (95% CI = 18.3'%, I 8.5%). The second highest group-specific cumulative risk of this event is 15.8% (95% CI= 15.6%, 16.1%) for American Indian/Alaska Native children. Hispanic and White children have the next highest risks, at 11.0% (95% CI = 19.0%, 11.1%) and 10.5% (95% CI = 10.5%, 10.5%), respectively. Finally, children who are Asian Pacific Islanderare notable in their comparatively low risk of confirmed maltreatment (3.5%; 95% CI = 3.5%, 3.6%). Black children also have a high risk of foster care placement, at 9.1% (95% CI = 9.0%, 9.2%), but American Indian/Alaska Native children have the highest risk of experiencing this event at 11.4% (95% CI = 11.2%, 11.6%). Asian Pacific Islander children have the lowest risk of foster care placement, with 1.5% (95% CI = 1.4%, 1.5%) of children in this group ever removed from the home. White and Hispanic children again fall between the 2 extremes.

The direction and magnitude of change in risks of confirmed maltreatment vary across racial/ethnic groups, as shown in Figure 1 and Table 1. Risks of confirmed maltreatment remained relatively stable from 2011 to 2016 for White (from 10.1% in 2011 [95% CI = 10.1%, 10.2%] to 10.5% in 2016 CI = 10.5'%, 10.5%i|), Black (from 18.7% in 2011 [95% CI = 18.6%, 18.8%] to 18.4%in2016 [95% CI = 18.3%, 18.5%]), and Asian/Pacific Islander children (from 3.8% in 2011 [95% CI = 3.7%, 3.8%] to 3.5% in 2016 |95% CI = 3.5%, 3.6%|). However, they changed more substantially and in opposite directions for children who are Hispanic (-1.1 percentage points; from 12.1% in 2011 [95% CI = 12.1%, 12.2%] to 11.0% in 2016 [95% CI = 10.9'%, 11.1%]) or American Indian Alaska Native (2.4 percentage points; from 13.4% in 2011 [95% CI = 13.1%, 13.6%] to 15.8% in 2016 [95% CI = 15.6%, 16.1%]). American Indian/Alaska Native children also experienced the greatest percentage point increase in cumulative risk of foster care placement (2.0 percentage points; from 9.4% in 2011 [95% CI = 9.2%, 9.6%] to 11.4% [95% CI = 11.2%, 11.6%]; Figure 2 and Table 2). Changes in cumulative risks of foster care placement for all other racial ethnic groups were less than 1 percentage point in magnitude and positive for White and Black children and negative for children of Hispanic ethnicity (from 4.4'% in 20 1 1 [95% CI = 4.4%, 4.4%] to 3.8% in 2016 [95% CI = 3.7%e 3.8%]). The risk of foster care placement remained unchanged between 2011 and 2016 for Asian/Pacific Islander children (1.5% in 20 1 1 |95% CI = 1.4%, 1.5%] and 2016 [95% CI = 1.4%, 1.5%]).

DISCUSSION

We used 20 12 to 20 16 data to update earlier estimates of the risk of confirmed maltreatment8 and foster care placement9 for US children. Our results support 5 key conclusions. First, since 20 1 1, the cumulative prevalence of confirmed maltreatment has remained stable and increased modestly for foster care placement. Second, children of

Hispanic ethnicity were the only group to experience a decline of greater than 1 percentage point in confirmed maltreatment risk. Third, American Indian/Alaska Native children experienced comparatively large increases in their risks of both confirmed maltreatment and foster care placement by age 18 years. Fourth, children of other racial ethnic groups experienced smaller changes, with 2016 risks for other groups generally falling within 1 percentage point of risks in 2011. Fifth, trends in confirmed maltreatment and foster care placement risks did not necessarily move in parallel. For example, although for American Indian/Alaska Native children and those of Hispanic ethnicity cumulative risks of confirmed maltreatment and foster care placement both increased (among American Indiana/ Alaska Native children) or declined (among Hispanic children) over the period, among Black children, these trends diverged, with confirmed maltreatment risks declining and foster care placements increasing.

Limitations

Our analyses were limited in 4 ways. First, child identifiers in the NCANDS and AFCARS used to capture first events in our synthetic cohort analysis are unique within a state child welfare system but not across states.8,9 This may positively bias estimates if many children have experienced confirmed maltreatment or foster care entry in multiple states.

Second, the NCANDS data include only cases of reported maltreatment; children are likely to experience maltreatment that goes unreported and undetected by child protective services, leading to underestimates of actual maltreatment. Child welfare systems may also confirm maltreatment in cases that may not meet thresholds accepted by medical or public health scholars. Because NCANDS records only child welfare system investigations and processes, caution should be exercised in interpreting these estimates as objective estimates of child maltreatment. Underreporting, overreporting, and bias in system processes may all affect estimates.

Third, as illustrated in Tables A and B (available as a supplement to the online version of this article at http:/www.ajph.org), there is some missingracial ethnic information in both data sets. Although multiple imputation may partially address this, it remains a concern.

Fourth, our descriptive analyses provide no insight into how policy shocks such as changes in immigrant detention and parental imprisonment, broader contexts such as the opioid crisis, and shifts in child maltreatment and the child welfare system shape the prevalence of child protective services contact.

Public Health Implications

Confirmed child maltreatment risks are similar and foster care placement risks slightly higher compared with 5 years ago.8,9 Since 2004, trends in these risks have moved in varying ways for different groups. Combined, these results highlight the importance of additional investigation of the mechanisms explaining these trends and their variation across racial/ethnic groups. They also highlight the need for broader public health and social service interventions for vulnerable populations, who disproportionately suffer from poor health in childhood and beyond, not restricted to confirmed maltreatment, which is itself a public health issue.1-3 Â1PU

CONTRIBUTORS

Y. Yi c >i unbilled io the design and produeuon ol tables and figures and drafted the article. F. R. Edwards led the analysis and produced the figures. C. Wildeman conceptualized the study and coordinated data acquisition. All authors contributed to the analysis and revised the article.

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Note. Neither the collector of the original data, the funding agency, nor the NDACAN bears any responsibility for the analyses or interpretations we have presented.

CONFLICTS OF INTEREST

C. Wildeman is the director of the National Data Archive on Child Abuse and Neglect. The remaining authors have no conflicts of interest to report.

HUMAN PARTICIPANT PROTECTION

This research was considered exempt by Cornell University's institutional review board.

Sidebar

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References

REFERENCES

1. Gilbert R, Widom CS, Browne K, Fergusson D, Webb E, Janson S. Burden and consequences of child maltreatment in high-income countries. Lancet. 2009; 373(9657):68-81.

2. Wildeman C, Waldfogel J. Somebody's children or nobody's children? How the sociological perspective could enliven research on foster care. Annu Rev Sociol. 2014;40:599-618.

3. Turney K, Wildeman C. Mental andphysical health of children in foster care. Pediatrics. 2016;138(5):e20161118.

4. US Department of Health &Human Services; AdministrationforChildrenandFamilies; Administrationfor Children, Youth and Families; Children's Bureau. 2017. Child maltreatment2015. Available at: https://www.acf.hhs.gov/sites/default/ffles/cb/cm2015.pdf. Accessed May 29, 2017.

5. Preston S, Heuveline P, Guillot M. Demography: Measuring and Modeling Population Processes. Oxford, UK: Wiley-Blackwell; 2001.

6. Children's Bureau. NCANDS. 2015. Available at: https://www.acf.hhs.gov/cb/research-data-technology/ reporting-systems/ncands. Accessed May 29, 2017.

7. Children's Bureau. AFCARS. Available at: https:// www.acf.hhs.gov/cb/research-data-technology/ reporting-systems/afcars. Accessed May 29, 2017.

8. Wildeman C, Emanuel N, Leventhal JM, PutnamHornstein E, Waldfogel J, Lee H. The prevalence of confirmed maltreatment among US children, 2004 to 2011. JAMA Pediatr. 2014;168(8):706-713.

9. Wildeman C, Emanuel N. Cumulative risks of foster care placement by age 18 for US children, 2000-2011. PLoS One. 2014;9(3):e92785.

10. Kim H, Wildeman C, Jonson-Reid M, Drake B. Lifetime prevalence of investigating child maltreatment among US children. Am J Public Health. 2017;107(2): 274-280.

11. van Buuren S, Groothuis-Oudshoorn K. Mice: multivariate imputation by chained equations in R. J Stat Softw. 2011;45(3):1-67.

12. Edwards FR. Replication materials. Available at: https://github.com/f-edwards/cps_lifetables. Accessed February 2, 2020.

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DEBUNKING MYTHS WHILE UNDERSTANDING LIMITATIONS

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FULL TEXT

Health insurance claims have been used for many years by academia and industry for health-related research. Cozad et al.1 importantly noted that these data are often underused in public health research. We agree that myths should be debunked, but in our experience conducting comparative effectiveness research with claims data, we caution that limitations must be considered.2

The first myth is that relevant outcomes are not measured. What is relevant depends on the research question being asked. For some questions, claims data will have sufficient diagnosis or procedure codes. However, the outcomes may not be available for all questions (e.g., disease severity or progression). Proxy variables have been used but often are not validated or fail to meet quality standards.3 Therefore, variables in a database must be evaluated to determine whether the work is feasible before conducting the research, because gaps in data could lead to incorrect conclusions.

The second myth is that evidence is unreliable. Claims data can indeed be used reliably for clinical and drug development decision-making. However, both researchers and practitioners should be aware that merging claims data with electronic medical records or US Census Bureau records is extremely challenging. When only a subset of the population can be linked, both sample size (and, hence, statistical power) and generalizability of the study are reduced. Therefore, we recommend that when key variables for the research question are missing from a data set, alternative data solutions should be fully investigated to better answer the research question before risking sample size and generalizability because of incomplete linkages.

The third myth is that claims data lack insight into practice. We believe that this is a strength of claims data. These data reflect routine clinical practice. However, one must conduct the research in accordance with accepted standards to reduce the risk of incorrect conclusions resulting from flawed study design. If claims data are used for public health investigations, we recommend that the research follow accepted best practice standards to minimize risk of error.4

In summary, we support the overall tenet of Cozad et al.1 to increase the use of administrative claims for research aimed to improve the nation's health. However, we believe that this cannot be stated without acknowledging the limitations of claims data and without stating the need to adhere to accepted standards of research to minimize risk to study quality. Â1PU

Sidebar

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CONTRIBUTORS

All authors contributed equally to this letter.

CONFLICTS OF INTEREST

L. M. Hess, K. B. Winfree, C. E. Muehlenbein, Y. E. Zhu, A. B. Oton, and H. Aggarwal are employees of Eli Lilly and Company and hold stocks in the company. N. Princic is an employee of IBM Watson Health. The authors have no other conflicts of interest to disclose.

EDITOR'S NOTE

Cozad et al. declined to respond.

Letters to the editor referring to a recent AJPH article are encouraged up to 3 months after the article's appearance. By submitting a letter to the editor, the author gives permission for its publication in AJPH. Letters should not duplicate material being published or submitted elsewhere. The editors reserve the right to edit and abridge letters and to publish responses.

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References

REFERENCES

1. Cozad M, Lindley LC, Eaker C, Carlosh KA, Profant TL. Debunking myths about health insurance claims data for public health research and practice. Am JPublicHealth. 2019;109(11):1584-1585.

2. Grimes DA, Schulz KF. Bias and causal associations in observational research. Lancet. 2002;359(9302):248-252.

3. Cox E, Martin BC, Van Staa T, Garbe E, Siebert U, Johnson ML. Good research practices for comparative effectiveness research: approaches to mitigate bias and confounding in the design of nonrandomized studies of treatment effects using secondary data sources. Value Health. 2009;12(8):1053-1061.

4. Motheral B, Brooks J, Clark MA, et al. A checklist for retrospective database studies-report ofthe ISPORTask Force on Retrospective Databases. Value Health. 2003; 6(2):90-97.

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Health Implications of Housing Assignments for Incarcerated Transgender Women

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ABSTRACT (ENGLISH)

Transgender women (i.e., persons who were assigned male sex at birth but who live and identify as female) experience forms of discrimination that limit their access to stable housing and contribute to high rates of incarceration; once incarcerated, the approaches used to assign them housing within the jail or prison place them at risk for abuse, rape, and other outcomes. Yet, a paucity of studies explores the implications of carceral housing assignments for transgender women. Whether the approaches used to assign housing in jails and prisons violate the

rights of incarcerated transgender persons has been argued before the US federal courts under Section 1983 of the US Constitution, which allows persons who were raped while incarcerated to claim a violation of their Eighth Amendment rights. Reforms and policy recommendations have been attempted; however, the results have been mixed and the public health implications have received limited attention.

FULL TEXT

Headnote

Transgender women (i.e., persons who were assigned male sex at birth but who live and identify as female) experience forms of discrimination that limit their access to stable housing and contribute to high rates of incarceration; once incarcerated, the approaches used to assign them housing within the jail or prison place them at risk for abuse, rape, and other outcomes. Yet, a paucity of studies explores the implications of carceral housing assignments for transgender women.

Whether the approaches used to assign housing in jails and prisons violate the rights of incarcerated transgender persons has been argued before the US federal courts under Section 1983 of the US Constitution, which allows persons who were raped while incarcerated to claim a violation of their Eighth Amendment rights.

Reforms and policy recommendations have been attempted; however, the results have been mixed and the public health implications have received limited attention. (Am J Public Health. 2020;110:650-654. doi:10.2105/AJPH.2020.305565)

In 2018, Bacak et al. called for the field of public health to begin addressing the disproportionate incarceration of lesbian, gay, bisexual, transgender, and queer (LGBTQ) persons.1 Rates of incarceration are highest among transgender women (i.e., persons who were assigned male sex at birth but live and identify as female), who are disproportionately impacted by forms of discrimination (e.g., employment discrimination) that increase their risk ofboth housing instability and incarceration.2 4 Housing is widely considered a social determinant of health; from an equity perspective, everyone deserves a safe and healthy place to live.5 This need for safe housing exists not only in community settings, where several reforms (e.g., changes to antidiscrimination policies) have already began to improve access to safe housing for transgender women, but it also extends to the carceralsettings (i.e.,jails, prisons) where a disproportionate number of transgender women will spend some portion of their lives.6 Because transgender women are at high risk for sexual assault and other forms of violence while incarcerated, where and how they are housed during periods of incarceration has serious implications for their physical and mental health.7 Yet, how housing assignments in carceral settings affect this population has received limited attention.

Precise estimates of the prevalence of incarceration among transgender women vary. In a San Francisco, California, study, an estimated 65% (335 of 515) of transgender women had histories of incarceration.8 In another study, however, only 19.3% (748 of 3878) did.9

The elevated rates of incarceration increase the risk of ever experiencing physical or sexual abuse. According to the 2011- 2012 National Inmate Survey, 12.2% of incarcerated persons who identified as lesbian, gay, bisexual, or other (non-heterosexual) orientation reported being sexually victimized by another incarcerated person; an additional 5.4% reported being victimized by staff.By contrast, only 1.2% of heterosexual incarcerated persons reported being sexually victimized by another incarcerated person and 2.1% by staff.10

Estimates ofviolence in prison are difficult to obtain. The available estimates likely underreport exposures to violence. An estimated 30% of persons incarcerated in a Texas prison did not report sexual assault because of embarrassment, 29% because of retaliation, 21% because of fear of harassment by other incarcerated persons, and 7% because they did not want to be sent to protective custody.11,12 Before the implementation of various rape shield laws across the country, it was permissible to use victims' sexual history or previous allegations of violence to cast doubt on their moral character and thus discredit their allegations of sexual assault. This tactic dissuaded victims from reporting sexual assault cases.13 To better protect witnesses, all 50 states, the federal government, and the District of Columbia passed different versions of the rape shield laws in the 1970s and 1980s; however, they do not protect victims fully. For instance, in California, the rape shield law does not apply if the rape occurs in a local

detention or state jail or in prison.13 The repercussions for transgender survivors of sexual assault is notable as many have histories of sex work.

Besides sexual victimization, transgender persons are also at higher risk for HIV and other sexually transmitted infections, mental health issues, suicide, and substance abuse,14 which can be exacerbated behind bars depending on housing assignment. In this article, we respond to the call by Bacak et al.1 by addressing the treatment of carceral housing assignments for transgender women as a public health issue.

HOUSING IN COMMUNITY AND CARCERAL SETTINGS

For transgender women, the threats to physical and mental health associated with housing assignments begin with arrest, and they are tied to both the type of facility to which one is assigned (male vs female) and the unit within the facility where they will reside. Despite medical advances that treat transgender women based on the fluidity of gender identity14 and court decisions affirming their civil rights,15 prisons andjails continue to rely primarily on one's genitalia or their sex assigned at birth to decide where to house persons, including transgender persons, entering jail or prison.16 Typically, officials make the determination about a detainee's sex as male or female upon arrest. Based on this approach, transgender women are routinely assigned to facilities designated for men.

They are also frequently placed in solitary confinement units known as administrative segregation or "ad-seg," even though such units are usually reserved for people who either were convicted of violent crimes or who committed an offense while incarcerated. Prison abolitionists consider such units a form of torture, because people assigned to them have minimal interactions with other human beings and no access to jobs, treatment programs, or basic privileges such as phone use.17 The resulting isolation and alienation adversely affect mental health.18

ATTEMPTS AT LEGAL INTERVENTIONS

Whether the approaches used to assign transgender persons housing in carceral settings are safe and legal has been argued before US federal courts based on Section 1983 of the US Constitution, which states, "Excessive bail shall not be required, nor excessive fines imposed, nor cruel and unusual punishments inflicted" (US Const. amend. VIII). Thus, transgender persons raped while incarcerated may allege a violation of their Eighth Amendment rights.19,20 To prove the violation, the incarcerated person must meet 2 prongs. The first, an objective prong, requires proof of a serious medical need or of the seriousness of deprivation. The second, a subjective one, requires incarcerated persons to prove prison administrators acted with deliberate indifference. Courts have interpreted the rulings from the cases as setting forth humane conditions for confinement that ensure incarcerated persons receive adequate food, clothing, shelter, and medical care.

In a 1995 case filed in the US District Court of California, Bianca Lucrecia, who was born male, sued the regional director of the Federal Bureau of Prisons, Samuel Samples, after being transferred to an all-male prison in Boron, California.19 Before incarceration, she had begun female hormone therapy, developed breasts, and had her testicles removed. Nevertheless, upon incarceration, she was housed in a cell with 3 cis (i.e., nontransgender) men, forbidden to wear female undergarments, and instructed to dress in a manner that would conceal her female physical characteristics. Incarcerated persons and prison staff harassed, abused, and degraded Lucrecia because of her feminine appearance. Prison guards physically assaulted, strip-searched, and fondled her. Lucrecia's requests to be treated as a female were denied by prison officials on the grounds that her pre-sentence report identified her as a 32-year-old White male. In a similar case, Kelly McAllister received threats and slurs based on her transgender identity, but she was nevertheless assigned to share a cell with a cis male who raped her brutally.21

Cases involving transgender women arrested while still undergoing medical transitions from male to female highlight unique considerations for health care. In a case heard by the US Court of Appeals, Michelle Kosilek sued the commissioner ofthe Massachusetts Department of Corrections, Luis S. Spencer, for refusing to provide sex reassignment surgery (SRS) to treat her gender dysphoria,20 which the American Psychiatric Association defines as a conflict between a person's physical or assigned gender and the gender with which they identify. Kosilek argued that SRS was medically necessary.22 Federal courts have upheld the rights of transgender persons to receive genderaffirming care, including in the case of Kosilek.23 In 2012, the District of Massachusetts Court ordered the Massachusetts Department of Corrections to provide SRS for Kosilek. As we have shown, violations of the Eighth

Amendment rights oftransgender women also have public health implications. Dee Farmer, who had undergone considerable physical transformation but whose surgery to remove her testicles was unsuccessful was transferred to an allmale penitentiary in Terre Haute, Indiana, where she was forcibly raped and sexually assaulted.21
Challenges and barriers arise for transgender women trying to meet both prongs as needed to establish a violation ofthe Eighth Amendment. For example, what constitutes medical need may be contested. For a condition to be considered a medical need, either a physician must mandate treatment or the need for treatment must be obvious, even to a layperson. In Kosilek's case, the Department of Corrections requested multiple opinions regarding the medical necessity of SRS asserting that the provision of other ameliorative treatments, such as antidepressants, gender-appropriate clothing, electrolysis, and hormonal treatment should suffice to treat her gender dysphoria. However, an independent evaluation of the case conducted by the Fenway Institute, a leading organization dedicated to addressing the health and health care needs of the LGBTQ population, found that these affirmatives were not comparable to SRS. Kosilek was so significantly distressed by her male genitalia that she had attempted self-castration and twice attempted suicide. The Fenway report concluded she might attempt suicide again ifher request for SRS were denied.20
Establishing a medical necessity can also be difficult for those whose sexual identity or gender expression requires no psychological, hormonal, or surgical treatment.24 As with all medical care, treatment of gender dysphoria and related conditions should be individualized given some transgender persons may not wish to undergo surgical procedures. Cruel and unusual punishment is not limited to the physical and sexual abuse that incarcerated persons may suffer; it also encompasses the mental and emotional damage that comes from the denial of medical treatments and the failure to recognize incarcerated persons according to their gender identity.
Meeting the subjective prong is challenged by the burden placed on the plaintiff to prove that prison officials knew their actions might cause harm, and that they acted with deliberate indifference or wanton disregard for the transgender plaintiffs. Proving this is further challenged by the qualified immunity prison administrators have, which is intended to shield them from liability (i.e., if acting in accordance with penological objectives, such as maintaining order and safety, they are shielded from liability).
The process ofmaking a claim is challenging, and the high burden of proof needed to win a case likely prevents many transgender women from pursuing any legal action. Indeed, such complaints rarely reach a court.13 Incarcerated persons must first meet the exhaustion requirement of the 1996 Prison Litigation Reform Act, which requires them to submit their claims through all the sequential administrative channels of the jail or prison. If a claim does reach the court, then prison officials may challenge the allegations by asserting that they did not know their decisions could inflict harm. While prison officials have substantial leeway in contesting the claims, incarcerated persons are not permitted access to prison records that might support their case.
The ramifications of housing assignments go beyond the potential for immediate physical and sexual abuse. Some transgender persons are diagnosed with gender dysphoria while incarcerated.25 Gender dysphoria can lead to severe psychological distress and intense emotional pain that if left untreated can result in dysfunction, debilitating depression, suicidality, and even death.24,26 Being placed in a housing unit that does not align with an individual's gender identity exacerbates these issues by limiting access to gender-affirming sources and other support. In addition, the strip searches that are routinely performed on all incarcerated persons, especially those performed before other incarcerated persons or prison staff, expose transgender persons to humiliation, ridicule, sexual harassment, and violence.8
Transgender women, like others, prefer to define their identity for themselves and have it be accepted and validated by others. By relying on genitalia and sex at birth to classify incarcerated persons, the criminal system directly undermines one's ability to define her identity for herself. It is not uncommon for transgender women to resort to self-harm, substance abuse, and risky sexual behavior in attempts to reclaim their identities.27 Dixen et al. reported that 9.4% of transgender women sex reassignment applicants reported self-mutilation.28 Suicide and suicide attempts are also prevalent among transgender persons, especially among those diagnosed with gender dysphoria. Clements-Nolle et al. documented depression among 62% of 392 transgender women, 32% of whom had attempted

suicide.29 De Cuypere et al. reported a lifetime prevalence of attempted suicide of 55% in this population with recent studies supporting similar figures.30-32

The Minority Stress Model, a theoretical framework for understanding the complex web of factors influencing the health of LGBTQ people, suggests the need for social support may be particularly strong for members of this population because they experience multiple, compounded layers of social stigma, isolation, and stress.33

Some individuals might turn to substance abuse as a way to cope with the discrimination, stigma, and social marginalization. The Transgender Community Health Project survey conducted in 1997 in San Francisco observed that 34% of transgender women had a history of injection drug use.34 Substance abuse can also lead to engaging in risky sexual behavior, which increases the risk of HIV/AIDS. Transgender women tend to be more sexually active than other incarcerated persons, not only because ofrape and coerced sex but also because of coerced prostitution while incarcerated and the need to exchange sex for protection.21 According to Harawa et al., 13% of formerly incarcerated transgender women traded sex for money, protection, food, or other goods, with transgender women more likely to report this practice than cis men (28% vs 10%).35

POTENTIAL SOLUTIONS

There are no easy solutions to these problems. The movement to abolish the prison industrial complex offers the most farreaching and permanent solution by eliminating the need to decide where to house any incarcerated persons, including transgender women.36 The extremely high incarceration rates and extreme forms ofviolence associated with it make this an urgent public health issue requiring immediate reforms and policy. We offer the following recommendations.

Gender Identity Instead of Sex

Replace approaches based on one's genitalia or sex assigned at birth with flexible, selfidentification systems instead. Reforms implemented in at least 2 cities illustrate how shifting from genitalia-based criteria to gender identity better accounts for the health, safety, and selfidentification of transgender incarcerated persons.18 In both Washington, DC, and Denver, Colorado, an implementing committee or review board now decides on a case-by-case basis whether each transgender person entering prison should go to a male versus female facility and which type of housing unit within the prison would be safest. Washington's transgender committee includes a medical practitioner, mental health clinician, correctional supervisor, chiefcase manager, and Department of Corrections-approved volunteer from the transgender community.18 In addition to addressing the housing-related issues, the Denver review board also addresses strip searches and health care needs. Although it does not have a permanent member ofthe LGBTQ community, an incarcerated person may request that a representative from the LGBTQ community be present during their hearing. The review board also allows prison staff to consult with community members for assistance, though this raises several ethical questions, including privacy rights.

Federal reforms also emphasize the need to evaluate physical safety and health care needs on a case-by-case basis. For instance, one reform limits how long transgender persons can be held in administrative segregation to 72 hours (usually).18 More recently, however, the US Department of Justice has begun rolling back policies aimed at protecting gay and transgender incarcerated persons. Furthermore, the US Bureau of Prisons continues to rely primarily on an incarcerated person's biological sex when determining housing designation as evidenced by their policy change in the Bureau's Transgender Offender Manual.37

Separate Units for Gay or Transgender Persons

A second potential reform is to house incarcerated persons who identify as gay or transgender in a separate unit within the facility, similar to the K6G unit created by the Los Angeles Men's Central Jail in response to a 1985 American Civil Liberties Union lawsuit. Several important drawbacks constrain this approach. First, to make the housing available to all intended incarcerated persons, the criteria used to classify someone as gay or transgender must strike a balance between recognizing the variety ofdiverse identities that exist in the population versus establishing discrete, unambiguous categories.21 To be assigned to an LGBTQ unit may also "out" LGBTQ people to other incarcerated persons, family members, and members of their home community. Finally, the segregation of units may impose a financial hardship to institutions with few transgender incarcerated persons.

Female Facilities

A third potential reform is to house transgender women in female jails or prisons. This approach might reduce risk but not eliminate risk of sexual assault as studies have shown female incarcerated persons as having perpetrated half of all incidents of sexual abuse upon other female incarcerated persons.23 In addition, the inaccurate, stigmatizing, and transphobic trope of transgender women as "predators" exists behind bars as it does in society; therefore, prison staff and other incarcerated persons may continue to perceive transgender women housed on the basis of their gender identity as threats to the safety of female incarcerated 23 persons.

Local Guidance

Local policy recommendations have also been made. For instance, a Transgender Working Group established following a forum the Los Angeles Police Department (LAPD) hosted for the transgender community urges the codification of policies and procedures to guide how the police treat transgender persons, "including appropriate name and pronoun usage, proper arrest procedures and housing in LAPD jails."38(p5) One of the goals of the Transgender Working Group was to help the LAPD formally adopt a written housing policy that acknowledges individuals' gender identity and ensures their safety while in LAPD custody. The Transgender Working Group recommends developing segregated units for nonviolent transgender women in female facilities; revising the sex and gender categories used on LAPD forms and reports to accommodate the population's diversity while improving the accuracy of data about it; and mandating that invasive searches, such as strip searches, be conducted by officers of the sex requested by the transgender person and that they be conducted in private in the presence of relevant personnel only. Policies such as these may help reduce inappropriate conduct by staff, such as conducting pat-downs to determine the "real" sex of the incarcerated person, and the humiliation of transgender persons in front of other incarcerated persons. Finally, the Transgender Working Group recommends that transgender persons be allowed to keep personal items (e.g., undergarments, wigs, make-up, binders) that reflect their gender identity.

IMPLICATIONS FOR PUBLIC HEALTH PRACTICE

Poor access to housing and employment in community settings leads many transgender women to engage in behaviors that increase their likelihood of incarceration.9,17 Once incarcerated, the housing assignments they receive often increase their risk ofexposure to extreme levels of sexual and physical violence, which contributes, in turn, to adverse physical and mental health sequelae.7 Inappropriate housing assignment during incarceration can also exacerbate isolation, psychological distress, risky behavior, and sexual abuse, and it may culminate in suicide.3,7,27,31,32 Upon release, having a history of incarceration makes it harder for individuals to qualify for public housing, often leading to a cycle of reincarceration.39 Cases argued before the courts highlight the need not only for legal reforms but also for public health professionals to treat housing assignments in prison as a public health problem. Public health can help by, for instance, expanding the definition of "medical necessity," documenting links between the social determinants of health (e.g., housing) and adverse health outcomes in this population and setting, illuminating the challenges transgender women face, and affirming their assessments of their lived experiences.

In addition, interventions addressing cultural and clinical competence can increase willingness to provide gender-affirming care among health care providers working in prisons.40 While the optimal public health intervention would eliminate the disproportionate incarceration of transgender women by eradicating the root causes, the devastating impacts on this community underscore the need for immediate action in prisons and other settings, including immigration and detention centers.

CONCLUSION

The nation's legal, correctional, and public health sectors have an obligation-as well as a unique opportunity-to cocreate the policies and practices needed to support the safety and well-being of transgender persons while they are in the custody of the state. Failure to do so implicates the nation and our field in contributing to the social, psychological, and health-related consequences of our collective inaction. ,4jPH

CONTRIBUTORS

E. Ledesma was responsible for idea conceptualization and literature review and led the writing. C. L. Ford assisted

in the writing.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

HUMAN PARTICIPANT PROTECTION

This review ofthe literature did not involve human participants. Institutional review board approval was not needed.

Sidebar

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References

REFERENCES

1.Bacak V, Thurman K, Eyer K, et al. Incarceration as a health determinant for sexual orientation and gender minority persons. Am J Public Health. 2018;108(8): 994-999.

2. Seelman KL. Transgenderadults' access to college bathrooms and housing and the relationship to suicidality. J Homosex. 2016;63(10): 1378-1399.

3. ReisnerSL, HughtoJ, DunhamE, et al. Legal protections in public accommodations settings: a critical public health issue for transgender and gendernonconforming people. Milbank Q. 2015; 93(3):484-515.

4. Kaufman R. Introduction to transgender identity and health. In: Makadon HJ, Mayer KH, Potter J, Goldhammer H. Fenway Guide to Lesbian, Gay, Bisexual, and Transgender Health. Philadelphia, PA: American College of Physicians; 2008: 331 -363.

5. Braveman P, Dekker M, Egerter S, Sadegh-Nobari T, Pollack C. How does housing affect health? Robert Wood Johnson Foundation. 2012. Available at: https://www.rwjf.org/en/library/ research/2011/05/housing-and-health. html. Accessed August 11, 2019.

6. Movement Advancement Project. Unjust: how the broken criminal justice system fails LGBT people of color. 2016. Available at: http://www.lgbtmap.org/ policy-and-issue-analysis/criminaljustice-poc. Accessed February 5, 2020.

7. Institute of Medicine Committee on Lesbian, Gay, Bisexual, and Transgender Health Issues and Research Gaps and Opportunities. The Health of Lesbian, Gay, Bisexual, and Transgender People: Building a Foundation for Better Understanding. Washington, DC: National Academy of Sciences; 2011.

8. Oparah JC. Feminism and the (trans) gender entrapment of gender nonconforming prisoners. UCLA Women's Law Journal. 2012;18(2):239-271.

9. Reisner SL, Bailey Z, Sevelius J. Racial/ ethnic disparities in history of incarceration, experiences ofvictimization, and associated health indicators among transgender women in the US. Women Health. 2014;54(8):750-767.

10. Beck AJ, Berzofsky M, Caspar R, Krebs C. Sexual victimization in prisons and jails reported by inmates, 2011-12. Washington, DC: US Department of Justice; 2013:1-108.

11. Levan Miller K. The darkest figure of crime: perceptions of reasons for male inmates to not report sexual assault. Justice Q. 2010;27(5):692-712.

12. Garland B, Wilson G. Prison inmates' views of whether reporting rape is the same as snitching: an exploratory study and research agenda. J Interpers Violence. 2013;28(6):1201-1222.

13. Hill T. Sexual abuse in California prisons: how the California rape shield fails the most vulnerable populations.

UCLA Womens Law Journal. 2014;21(89):9-141.
14. US Department ofHealth and Human Services. Healthy People 2020: lesbian, gay, bisexual, and transgender health. 2011. Available at: https://www. healthypeople.gov/2020/topicsobjectives/topic/lesbian-gay-bisexualand-transgender-health/objectives. Accessed August 8, 2016.
15. US Equal Employment Opportunity Commission. Examples ofcourt decisions holding LGBT-related discrimination actionable under Title VII. Available at: https://www.eeoc.gov/eeoc/ newsroom/wysk/lgbt_examples_ decisions.cfm. Accessed March 30, 2017.
16. Fabeni S. The importance ofbeing perverse: troubling law, identities, health and rights in search of global justice. In: Meyer IH, ed. The Health ofSexual Minorities: Public Health Perspectives on Lesbian, Gay, Bisexual and Transgender Populations. Philadelphia, PA: Springer; 2007:93-129.
17. Socías ME, Deering K, Horton M, Nguyen P, Montaner J, Shannon K. Social and structural factors shaping high rates of incarceration among sex workers in a Canadian setting. J Urban Health. 2015; 92(5):966-979.
18. Harvard Law Review. Classification and housing oftransgender inmates in American prisons. Development in the Law SexualOrientation &GenderIdentity. 2014; 127(6):1680-1814.
19. Bianca Lucrecia v Samuel Samples, et al., C-93-3651 (ND Calif 1995).
20. Michelle Kosilek v Luis S. Spencer, Commissioner of the Massachusetts Department of Correction, 12-2194 (1st Cir 2014).
21. Peek C. Breaking out of the prison hierarchy: transgender prisoners, rape, and the Eighth Amendment. Santa Clara Law Rev. 2004;44(4):1211-1248.
22. Makadon H, Mayer K, Potter J, Goldhammer H. The Fenway Guide to Lesbian, Gay, Bisexual, and Transgender Health. Philadelphia, PA: American College of Physicians; 2008:337.
23. Stroumsa D. The state of transgender health care: policy, law, and medical frameworks. Am J Public Health. 2014; 104(3):e31-e38.
24. World Professional Association for Transgender Health. 2019. Available at: https://wpath.org. Accessed August 19, 2019.
25. Parekh R. What is gender dysphoria? American Psychiatric Association. 2016. Available at: https://www.psychiatry. org/patients-families/gender-dysphoria/ what-is-gender-dysphoria. Accessed August 19, 2019.
26. Ettner R, Monstrey S, Coleman E. Principles of Transgender Medicine and Surgery. New York, NY: Haworth Press; 2007.
27. Lombardi E. Public health and transpeople: barriers to care and strategies to improve treatment. In: Meyer IH, ed. The Health of Sexual Minorities: Public Health Perspectives on Lesbian, Gay, Bisexual and Transgender Populations. New York, NY: Springer; 2007:639-652.
28.DixenJ,MaddeverH,VanMaasdamJ, Edwards P. Psychosocial characteristics of applicants evaluated for surgical gender reassignment. Arch Sex Behav. 1984;13(3): 269-276.
29. Clements-Nolle K, Marx R, Katz M. Attempted suicide among transgender persons. J Homosex. 2006;51(3):53-69.
30. DeCuypere G, Elaut E, Heylens G. Long-term follow-up: psychosocial outcome ofBelgian transsexuals after sex reassignment surgery. Sexologies. 2006;15: 126-133.
31. Hass AP, Rodgers PL, Herman JL. Suicide attempts among transgender and gender non-conforming adults. Williams Institute. 2014. Available at: https:// williamsinstitute.law.ucla.edu/research/ suicide-attempts-among-transgenderand-gender-non-conforming-adults. Accessed November 6, 2017.
32. Grant JM. Injustice at every turn: a report of the National Transgender Discrimination Survey. National Center for Transgender Equality and National Gay and Lesbian Task Force. 2011. Available at: https://www.thetaskforce. org/wp-content/uploads/2019/07/ ntds_full.pdf. Accessed February 5, 2020.
33. Meyer IH. Prejudice and discrimination as social stressors. In: Meyer IH, ed. The Health of Sexual Minorities: Public Health Perspectives on Lesbian, Gay, Bisexual and Transgender Populations. New York, NY: Springer;

2007:242-267.
34. The Transgender Community Health Project. University of California, San Francisco. 2019. Available at: http://hivinsite.ucsf.edu/InSite?page=cftg-0202. Accessed August 19, 2019.
35. Harawa NT, Sweat J, George S, Sylla M. Sex and condom use in a large jail unit for men who have sex with men (MSM) and male-to-female transgenders. J Health Care Poor Underserved. 2010;21(3):10711087.
36. Gilmore RW. Golden Gulag: Prisons, Surplus, Crisis, and Opposition in Globalizing California. Berkeley, CA: University of California Press; 2007.
37. Benner K. Federal prisons roll back rules protecting transgender people. New York Times. May 11, 2018. Available at: https://www.nytimes.com/2018/05/ 11/us/politics/justice-departmenttransgender-inmates-crime-victims.html. Accessed August 19, 2019.
38. Bettcher T, Brown S, Buckman S, Davis M, Duenas F. Recommended model policies and standards for the Los Angeles Police Department's interaction with transgender individuals. Los Angeles, CA: Los Angeles City Human Relations Commission; 2010.
39. Kosenko KA, Nelson E. Identifying and ameliorating lesbian, gay, bisexual, and transgender health disparities in the criminal justice system. Am JPublicHealth. 2018;108(8):970-971.
40. White Hughto JM, Clark K, Altice F, Reisner S, Kershaw T, Pachankis J. Improving correctional healthcare providers' ability to care for transgender patients: development and evaluation ofa theory-driven cultural and clinical competence intervention. Soc Sci Med. 2017; 195:159-169.

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US Hospitals Stepping Up to End Youth Violence

Barna, Mark

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FULL TEXT

Across the United States hospital-based violence intervention programs are working to interrupt the cycle of violence among high-risk youths. Such programs, which are growing in popularity, partner with community organizations with experience working with adolescents in disadvantaged neighborhoods where shootings and other violent acts routinely take place.

The programs are an effective way to prevent gun violence, research shows. In fact, they were cited as one of the policies that work by the American Public Health Association and the Bloomberg American Health Initiative at the Johns Hopkins Bloomberg School of Public Health during a September forum on gun violence prevention.

The hospital-based programs are important because of the high rates of injury recidivism among adolescents in disadvantaged neighborhoods. Injured youths are 25% to 60% more likely to suffer another assaultrelated trauma, according to a 2018 study in Annals of Emergency Medicine.

Adolescents in disadvantaged urban neighborhoods are most at risk of experiencing intentional violence, according to a 2019 study in the Journal of Surgical Research. Contributing to the violence are social determinants, such as

poverty, a failing school system, housing issues, and a lack of adequate health care. Home violence and child abuse also contribute, the study said.

Exploring social determinants and ways to prevent youth violence led to the rapid growth of hospital-based intervention programs. In 1995, only two programs existed. Today there are more than 40 in the United States, with more than a dozen preparing to launch, Fatimah Loren Muhammad, executive director of the Health Alliance for Violence Intervention, told The Nation's Health.

-Mark Barna

Read the full article in The Nation's Health at http://thenationshealth.aphapublications.org/ content/50/1/1.2.

DETAILS

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Occupational and Environmental Medicine: Public Health and Medicine in the Workplace

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ABSTRACT (ENGLISH)

Occupational medicine is unique in medicine because it focuses on the interface of the workplace and health. Occupational medicine physicians combine individual patient care with prevention and a population-based health approach and may be engaged in all aspects of workers' health and the workplace. They may spend more time addressing issues in healthy workers, workers' groups, employers, or companies because only 45% of their time is used to address injured or ill patient issues.1 Important occupational health issues that need to be addressed worldwide include working conditions; the built environment; and chemical, biological, physical, and psychosocial hazards.2 Today, the specialty encompasses workers' wellness, disease prevention, and environmental issues in addition to occupational injury and illness care.

FULL TEXT

Occupational medicine is unique in medicine because it focuses on the interface of the workplace and health. Occupational medicine physicians combine individual patient care with prevention and a populationbased health approach and may be engaged in all aspects of workers' health and the workplace. They may spend more time addressing issues in healthy workers, workers' groups, employers, or companies because only 45% of their time is used to address injured or ill patient issues.1 Important occupational health issues that need to be addressed worldwide include working conditions; the built environment; and chemical, biological, physical, and psychosocial hazards.2 Today, the specialty encompasses workers' wellness, disease prevention, and environmental issues in

addition to occupational injury and illness care.

HISTORY

Even before becoming one of the three preventive medicine specialties established for board certification in 1953, occupational medicine had a long and rich history. It developed first as "industrial medicine and surgery" in response to the Industrial Revolution and the introduction of the first governmentsponsored program of social insurance (i.e., workers' compensation) and to the need for helping workers and their families achieve better health through education and prevention. It has evolved to include toxicology and hazard recognition, driven by technology and continually emerging new hazards, maturing through epidemiology driven by the need to recognize and quantify the effect of occupational illness and disease. Over time, the specialty emphasized its relevance in environmental issues by reframing itselfas "occupational and environmental medicine" (OEM). OEM physicians recognize the need to minimize or prevent health effects from a variety of bothworkplace and environmental hazardous exposures and coordinate practices that improve workplace and environmental health.

OEM practice has advanced significantly in the past 50 years, even though the core foundation remains clinical medicine, including musculoskeletal injury care, preplacement and surveillance evaluations, and fitness-forduty evaluations. OEM practice expanded in the wake of the Occupational Safety and Health Act of 1970, which brought improved prevention and detection of work-related injuries and illnesses resulting from enforceable permissible exposure limits and medical surveillance requirements for designated exposures. Although some Occupational Safety and Health Act standards (e.g., lead) have not been updated to reflect current medical evidence, the National Institute for Occupational Safety and Health may provide exposure limits that reflect more current medical evidence. The Americans With Disabilities Act of 1990 and subsequent amendments emphasized the need to put workers with disabilities on a more equal and fair footing. It has improved OEM physicians' ability to base fitness-to-work decisions on essential job functions and bring employees back to work or keep them at work, which is increasingly important given our aging and diverse workforce. The critical nature of safe and early return to work or stay at work is a basic principle of caring for the injured worker within OEM.

OEM has always existed in dualities as both a clinical specialty for injured workers and a population-based practice for health management, with work injury care financed primarily by workers' compensation. This sense of always facing in two directions is reflected in the history of the specialty, which at times has been a powerful engine for progressive reform and workers' rights and at other times may have reflected paternalistic and potentially repressive policies of some employers.

PRESENT DAY

Increasing awareness that the OEM physician can affect overall worker health, workers' families, and their environment has resulted in an expanded breadthof this medical specialty. The National Institute for Occupational Safety and Health recently established a program, Total Worker Health, which promotes a comprehensive approach to worker well-being by protecting safety and enhancing health and productivity for the benefit of workers, employers, and the nation.3 OEM physicians are increasingly asked to optimize all aspects of workers' health. The World Health Organization also advocates for safe, healthy, and decent work for all workers and for the protection of their families from loss. The World Health Organization stresses the importance of a healthier and safer workplace to prevent disease and as a prerequisite to attain some of their Sustainable Development Goals such as ensuring healthy lives and promoting well-being, sustainable economic growth, and decent work for all.

The American College of Occupational and Environmental Medicine (ACOEM) represents OEM specialists who champion the health of workers, safety of workplaces, and quality of environment even as the workplace changes. Increased use of automation and a shift from manufacturing to service-based workers have coincided with downsizing of traditional corporate medical departments.4 Recently, only 15% to 26% of ACOEM members listed corporations as their primary work setting (American College of Occupational and Environmental Medicine, unpublished membership data, October 22, 2019).4 Most OEM physicians work in clinical settings (52%- 57%), whereas others work in government jobs (9%), academic settings (7%-9%), consulting (5%-11%), and other settings.1,4 ACOEM physician members are highly trained with 43% to 47% board certified in occupational medicine

and 65% to 71% board certified in another specialty (American College of Occupational and Environmental Medicine, unpublished membership data, October 22, 2019).4 ACOEM publishes numerous guidance documents, position statements, and evidence-based guidelines including guidance for treatment and evaluation of law enforcement officers. ACOEM also creates evidence-based guidelines (MD Guidelines; https://acoem.org/PracticeResources/Practice-GuidelinesCenter/MDGuidelines%C2% AE) addressing treatment of a variety ofwork-related conditions.

Over the years, OEM training has mirrored the balance of individual and population practice, but maintaining residency programs has been a challenge, primarily because of inconsistent funding. In the United States, 25 accredited OEM residency programs currently exist; at least 18 occupational medicine programs have closed since 2000, although this trend seems to have leveled. Changes within the last three years to OEM training requirements allow programs to include a Postgraduate Year One training year to facilitate the entrance of medical school graduates and provides the option for midcareer physicians to transition to OEM with advanced standing.5 Residents usually have completed another residency program or have had significant clinical work experiences, a benefit to OEM. Although many practicing OEM physicians have not completed an OEM residency program, they provide a significant amount of clinical OEM care in the United States at a high level of competency. ACOEM has educational programs to help these and all practitioners improve their competency in occupational health.

In 2019, the National Academy of Medicine recommended adopting work system changes that create healthy, positive work environments for health care workers to lessen burnout.6 This could serve as a model for managing the workplace going forward, and OEM physicians are well suited to lead the way based on their training, experience, and expertise.

FUTURE

The continuous emergence of new chemical, infectious, and environmental hazards; advances in manufacturing and technology; pollution; climate change; substance use issues; and other events that affect the environment and workplace have increased the need for trained OEM physicians who can meet these demands. OEM practice continues to respond to new technology, to work organization changes such as the increased use of artificial intelligence and automation, to changing regulations, and to demographic trends such as the aging of the workforce. As OEM physicians respond to future challenges, the specialty will need to keep up with new developments and continue to be the champions at the forefront of worker health and the environment. OEM practice will continue to expand its scope in prevention while maintaining its role in the care of injured workers. ÂfPU

Beth Baker, MD, MPH
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CONTRIBUTORS

All authors provided discussion and input on the elements within the editorial. B. Baker provided significant contributions regarding the current state of occupational and environmental medicine, to include American College of Occupational and Environmental Medicine information. D. Kesler provided significant contributions regarding occupational and environmental medicine competencies and residency training. T. Guidotti provided significant contributions regarding the history and the legal elements of occupational medicine.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to disclose.

Sidebar

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References

REFERENCES
1. Harber P, Rose S, Bontemps J, et al. Occupational medicine practice: activities and skills of a national sample. J Occup Environ Med. 2010;52(12):1147-1153.
2. Wolf J, Prüss-Ustün A, Ivanov I, et al. Preventing Disease Through a Healthier and Safer Workplace. Geneva, Switzerland: World Health Organization; 2018. Available at: https://www.who.int/ quantifying_ehimpacts/publications/ healthier-workplace/en. Accessed October 20, 2019.
3. National Institute for Occupational Safety and Health. What is Total Worker Health? Available at: https://www.cdc.gov/niosh/twh/default.html. Accessed October 22, 2019.
4. Baker BA, Dodd K, Greaves IA, Zheng CJ, Brosseau L, Guidotti T. Occupational medicine physicians in the United States: demographics and core competencies. J Occup Environ Med. 2007;49(4):388-400.
5. Accreditation Council for Graduate Medical Education. ACGME Program Requirements for Graduate Medical Education in Preventive Medicine. 2019. Available at: https://www.acgme. org/Portals/0/PFAssets/ProgramRequirements/380-Preventive_Medicine_ 2019.pdf?ver=2018-08-21-130637-697. Accessed November 27, 2019.
6. National Academy ofMedicine, Committee on System Approaches to Improve Patient Care by Supporting Clinician Well-Being. Taking Action Against Clinician Burnout: A Systems Approach to Professional Well-Being. Washington, DC: National Academies Press; 2019. Available at: http://www. nationalacademies.org/hmd/Reports/2019/taking-action-against-clinicianburnout.aspx. Accessed November 11, 2019.

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New Systematic Therapies and Trends in Cutaneous Melanoma Deaths Among US Whites, 1986–2016

Berk-Krauss, Juliana, MD [1] ; Stein, Jennifer A, MD, PhD [2] ; Weber, Jeffrey, MD, PhD [3] ; Polsky, David, MD, PhD [4] ; Geller, Alan C, RN, MPH [2] [1] The State University of New York Downstate Medical Center, Brooklyn [2] The Ronald O. Perelman Department of Dermatology, New York University School of Medicine, New York, NY. [3] Department of Medicine, New York University School of Medicine [4] Department of Social and Behavioral Sciences, Harvard TH Chan School of Public Health, Boston, MA.

ProQuest document link

ABSTRACT (ENGLISH)

Objectives. To determine the effect of new therapies and trends toward reduced mortality rates of melanoma. Methods. We reviewed melanoma incidence and mortality among Whites (the group most affected by melanoma) in 9 US Surveillance, Epidemiology, and End Results registry areas that recorded data between 1986 and 2016.

Results. From 1986 to 2013, overall mortality rates increased by 7.5%. Beginning in 2011, the US Food and Drug Administration approved 10 new treatments for metastatic melanoma. From 2013 to 2016, overall mortality decreased by 17.9% (annual percent change [APC]= -6.2%; 95% confidence interval [CI]= -8.7%, -3.7%) with sharp declines among men aged 50 years or older (APC = -8.3%; 95% CI= -12.2%, -4.1%) starting in 2014. This recent, multiyear decline is the largest and most sustained improvement in melanoma mortality ever observed and is unprecedented in cancer medicine. Conclusions. The introduction of new therapies for metastatic melanoma was associated with a significant reduction in population-level mortality. Future research should focus on developing even more effective treatments, identifying biomarkers to select patients most likely to benefit, and renewing emphasis on public health approaches to reduce the number of patients with advanced disease. (Am J Public Health. 2020;110: 731-733. doi:10.2105/AJPH.2020.305567)

FULL TEXT

Headnote

Objectives. To determine the effect of new therapies and trends toward reduced mortality rates of melanoma. Methods. We reviewed melanoma incidence and mortality among Whites (the group most affected by melanoma) in 9 US Surveillance, Epidemiology, and End Results registry areas that recorded data between 1986 and 2016. Results. From 1986 to 2013, overall mortality rates increased by 7.5%. Beginning in 2011, the US Food and Drug Administration approved 10 new treatments for metastatic melanoma. From 2013 to 2016, overall mortality decreased by 17.9% (annual percent change [APC]= -6.2%; 95% confidence interval [CI]= -8.7%, -3.7%) with sharp declines among men aged 50 years or older (APC = -8.3%; 95% CI= -12.2%, -4.1%) starting in 2014. This recent, multiyear decline is the largest and most sustained improvement in melanoma mortality ever observed and is unprecedented in cancer medicine.

Conclusions. The introduction of new therapies for metastatic melanoma was associated with a significant reduction in population-level mortality. Future research should focus on developing even more effective treatments, identifying biomarkers to select patients most likely to benefit, and renewing emphasis on public health approaches to reduce the number of patients with advanced disease. (Am J Public Health. 2020;110: 731-733. doi:10.2105/AJPH.2020.305567)

Mortality rates for many cancers have declined gradually since the early 1990s, but the overall melanoma mortality rate had been rising. Increases in melanoma mortality were highest among older individuals, particularly men.1 Since 2011, the US Food and Drug Administration (FDA) approved 10 new therapies for the treatment ofmetastatic melanoma, including first- and secondgeneration immune checkpoint blocking antibodies (anti-CTLA-4 [T-lymphocyte-associated protein 4] and anti-PD-1 [programmed death protein 1], respectively) and B-RAF protooncogene (BRAF) and mitogen-activated protein kinase kinase (MEK) inhibitors, as well as talimogene laherparepvec.2 We investigated whether these drugs may have had an effect on population-level mortality data because 6 of these 10 agents were approved between 2011 and 2014.

METHODS

We examined the most recent melanoma incidence and mortality data from the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program. We used SEER·Stat Version 3.8.53 to collect incidence data from the 9 US SEER registry areas (Atlanta, GA; Connecticut; Detroit, MI; Hawaii; Iowa; New Mexico; San Francisco-Oakland, CA; Seattle-Puget Sound, WA; and Utah) that recorded data between 1986 and 2016, the most recent year available, covering approximately 9.4% of the US population. We limited our analysis of incidence data to White individuals, because more than 90% of melanoma in the United States occurs among this population.1 We coded incident melanomas ofthe skin according to the International Classification of Diseases for Oncology, Third Edition (ICD-O-3; Geneva, Switzerland: World Health Organization; 2000), histological tumor classification. We obtained overall age-adjusted incidence rates for men and women aged 20 years or older stratified into 10-year increments (melanoma is rare among individuals younger than 20 years). We used SEER·Stat to collect mortality data from the National Center for Health Statistics national database of death certificates.4 We selected melanoma

of the skin as cause of death, which was determined by the ICD codes and rules in use at the time of death.5 The mortality analysis was limited to White persons, stratified by age and sex, from 1986 to 2016, the most recent year available. We also used SEER's Incidence-Based Mortality database to examine stage at diagnosis of fatal melanomas in those aged 20 years or older. Stage at diagnosis was stratified by localized, regional, and distant disease via the SEER historic stage A recode. Cases were selected by the melanoma of the skin ICD-O-3 site recode and cause of death.

We used the Joinpoint Regression Program 4.5.01 to analyze incidence and mortality trends. The software generated joined linear segments on a log scale. We set the maximum number of possible joinpoints to 5, based on the number of data points in the series.6 A permutation test was used to determine the location of the joinpoints, when the change in trend was statistically significant.7 The slope of each line was recorded as the annual percent change (APC) with 95% confidence intervals (CIs). APCs were considered statistically significantly different from zero when P values were less than .05.

RESULTS

Between 1986 and 2016, incidence rates of melanoma for the White population aged 20 years or older increased by 108.0% with an APC of 2.7% (95% CI = 2.5%, 2.9%). Incidence rates increased in men aged 50 years or olderby 178.4% with an APC of 3.4% (95% CI = 3.2%, 3.7%) and in women aged 50 years or older by 142.1% with an APC of 3.2% (95% CI = 3.0%, 3.5%). Since 2005, the overall age-adjusted APC declined slightly, from 3.2% to 1.7% (Figure A, available as a supplement to the online version of this article at http://www.ajph.org).

For cutaneous melanoma mortality, we found 2 distinct trends over the past 30 or more years. Between 1986 and 2013, overall mortality increased by 7.5% with an APC of 0.2% (95% CI = 0.1%, 0.3%). Between 1986 and 2014, mortality among men aged 50 years or older increased by 35.4% with 2 statistically significant APC increases of 1.9% (95% CI = 1.5%, 2.3%) and 1.7% (95% CI = 1.1%, 2.2%) over most of the period. Between 1986 and 2013, mortality among women aged 50 years or older increased by 4.2% with an APC of 0.2% (95% CI = 0.1%, 0.4%).

By contrast, between 2013 and 2016, overall mortality rates declined sharply by 17.9%. The APC decreased by 6.2% in the general population (95% CI = -8.7%, -3.7%; Figure 1), 8.3% among men aged 50 years or older (starting in 2014; 95% CI = -12.2%, -4.1%), and 5.8% among women aged 50 years or older (95% CI = -8.9%, -2.5%). The decrease between 2013 and 2016 was seen in nearly every 10-year age subset (Figure B, available as a supplement to the online version of this article at http://www.ajph.org) despite an overall incidence rate that rose slightly and decreased for patients initially diagnosed with local, regional, or distant disease (Figure C, available as a supplement to the online version of this article at http:// www.ajph.org).

DISCUSSION

Our analysis of more than 30 years of US cancer data suggests that the long-term trend of increasing melanoma mortality has reversed. The decline was driven by substantial decreases in mortality among men aged 50 years or older beginning in 2014 and among women aged 50 years or older beginning in 2013. This 4-year decline in melanoma mortality of 17.9% surpasses the most pronounced 4-year declines for 4 other major cancers: prostate (14%), breast (8%), lung (8%), and colon cancer (5%).4

At least 2 possible reasons account for this decline: improved treatments for advanced disease and education and early detection resulting in migration toward earlier-stage melanomas with a greater chance of surgical cure. For the latter, SEER data indicated that the median tumor thickness decreased from 0.73 millimeters to 0.58 millimeters between 1989 and 2009, likely reflecting improved education and early detection by the public and professionals.8 This small decrease is not associated with changes in prognosis, so it is unlikely to be driving the mortality reduction.

The dramatic multiyear decline in mortality coincided with the introduction of multiple new and efficacious treatments for metastatic melanoma. Currently, 5-year survival ranges between 30% and 50% compared with historical estimates ofless than 10%.9 11 Given the increased incidence of melanoma throughout this period (19862016) and the lack of stage migration, these data strongly suggest that the mortality decline was the result of the extended survival associated with these treatments. This conclusion was supported by Dobry et al.,12 who identified a 31% relative improvement in overall survival of 17 975 hospital-based metastatic melanoma patients who presented for

treatment after the FDA's initial approvals, compared with before 2011. However, during the last year those data were available (2015), only 37% of those stage IV patients received advanced therapies. Determining a true count ofindividuals who go untreated is vital to public health planning to ensure that access to new treatments is more widely available.

This analysis had limitations. Although mortality data were reported for all 50 states, only the original 9 SEER sites provided incidence data for the full 30 or more years. Use ofpopulation-based statistics does not provide patient-level treatment details, so the proportion of melanoma patients who actually received the new treatments is unknown. We also lacked tumor thickness data, which could have provided better information on recent trends in stage migration.

PUBLIC HEALTH IMPLICATIONS

To our knowledge, this is the first report of a statistically significant, multiyear reduction in the mortality rate of cutaneous melanoma across an entire nation. It shows progress in translating clinical trial survival data into improvements in population-level mortality. To accelerate these trends and improve overall patient outcomes, continued investment in medical and public health research should focus on (1) developing even more effective treatments; (2) identifying biomarkers to select patients most likely to benefit from particular therapies, while sparing others the risk of the potentially severe toxicities and high costs of treatment; and (3) renewing emphasis on public health approaches, such as raising public and professional awareness of melanoma and its early warning signs, especially in adults aged 50 years or older, to reduce the number of patients who require treatment of advanced disease. /4JPI-I

CONTRIBUTORS

D. Polsky and A. C. Geller contributed equally to this article. J. Berk-Krauss, D. Polsky, and A. C. Geller designed the study and collaborated on the first draft ofthe article. J. Berk-Krauss performed the statistical analysis. D. Polsky and A. C. Geller assisted J. Berk-Krauss with refining the analysis and interpreting results. All of the authors assisted with editing the article.

CONFLICTS OF INTEREST

D. Polsky has the following potential conflicts of interest to disclose: in-kind laboratory services and support from Bio-Rad Laboratories and contract research with Novartis. J. Weber has the following potential conflicts ofinterest to disclose: consultant to Merck, GSK, Genentech, BMS, Astra Zeneca, Incyte, Celldex, CytoMx, Takeda, and Sellas; equity in Altor, CytoMx, Protean, and Biond; named on a PD1 patent by Biodesix; and named on a CTLA4 patent by Moffitt Cancer Center.

HUMAN PARTICIPANT PROTECTION

Because the study involved only cancer registry data, it did not require institutional review board approval.

Sidebar

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References

REFERENCES

1. Geller AC, Miller DR, Annas GD, Demierre MF, Gilchrest BA, Koh HK. Melanoma incidence and mortality among US Whites, 1969-1999. JAMA. 2002; 288(14):1719-1720.

2. National Cancer Institute. Drugs approved for melanoma. June 2019. Available at: https://www.cancer.gov/ about-cancer/treatment/drugs/melanoma. Accessed November 18, 2019.

3. Surveillance, Epidemiology, and End Results (SEER) Program. Available at: http://www.seer.cancer.gov. AccessedMay 12,2019. SEER·StatDatabase: Incidence - SEER 9 Regs Research Data, November 2018 Sub (1975-2016) <Katrina/Rita Population Adjustment> - Linked to County Attributes - Total US, 1969-2017 Counties, National

Cancer Institute, DCCPS, Surveillance Research Program. Released April 2019, based on the November 2018 submission.
4. Surveillance, Epidemiology, and End Results (SEER) Program. Available at: http://www.seer.cancer.gov. AccessedMay 12,2019. SEER·StatDatabase: Mortality - All COD, AggregatedWith State, Total US (1969-2016) <Katrina/Rita Population Adjustment>, National Cancer Institute, DCCPS, Surveillance Research Program. Released December 2018. Underlying mortality data provided by National Center for Health Statistics (http://www.cdc.gov/nchs).
5.Jemal A, Ward EM, Johnson CJ, et al. Annual report to the nation on the status of cancer, 1975-2014, featuring survival. J Natl Cancer Inst. 2017;109(9).
6. National Cancer Institute. Surveillance Research Program. Average Annual Percent Change (AAPC) and Confidence Interval. Bethesda, MD: National Cancer Institute; 2017. Available at: https://surveillance.cancer.gov/help/joinpoint/setting-parameters/method-andparameters-tab/number-of-joinpoints. Accessed June 5, 2019.
7. Kim HJ, Fay MP, Feuer EJ, Midthune DN. Permutation tests for joinpoint regression with applications to cancer rates. Stat Med. 2000;19(3):335-351.
8. Shaikh WR, Dusza SW, Weinstock MA, Oliveria SA, GellerAC, HalpernAC. Melanoma thickness and survival trends in the United States, 1989 to 2009. J Natl Cancer Inst. 2015;108(1):pii: djv294.
9. Robert C, Grob JJ, Stroyakovskiy D, et al. Five-year outcomes with dabrafenib plus trametinib in metastatic melanoma. N Engl J Med. 2019;381(7):626-636.
10. Larkin J, Chiarion-Sileni V, Gonzalez R, et al. Fiveyear survival with combined nivolumab and ipilimumab in advanced melanoma. N Engl J Med. 2019;381(16): 1535-1546.
11. Balch CM, Gershenwald JE, Soong SJ, et al. Final version of 2009 AJCC melanoma staging and classification. J Clin Oncol. 2009;27(36):6199-6206.
12. Dobry AS, Zogg CK, Hodi FS, Smith TR, Ott PA, Iorgulescu JB. Management of metastatic melanoma: improved survival in a national cohort following the approvals ofcheckpoint blockade immunotherapies and targeted therapies. Cancer Immunol Immunother. 2018; 67(12):1833-1844.

DETAILS

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Global News

Kingsbury, Diana [1] ; Puac-Polanco, Victor [2] ; Dávila, Mila González [2] [1] Kent State University, Kent, OH [2] Columbia University, New York, NY

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FULL TEXT

Mixed Method Evaluation of the Saving Mothers Project in Tanzania

Postpartum hemorrhage and sepsis are main contributors to the high maternal mortality in Tanzania. Oral misoprostol, an oral prostaglandin, has been recommended as an alternative to injectable medications for

postpartum hemorrhage prevention. Between 2015 and 2017, the Saving Mothers Project trained community health workers in the Bunda and Tarime districts to distribute clean birth kits with misoprostol among pregnant women and educate them on safe birthing and the use of health care facilities. To evaluate this project, 2406 women were interviewed on their experiences at the time of childbirth. Almost all women used components of the kit, and 83% used misoprostol after delivery. Among those who did not use misoprostol, almost all received an oxytocin injection. Also, deliveries at health care facilities were high among participants (83%).

Citation. Webber GC, Chirangi BM, Magatti NJ. Challenges and successes of distributing birth kits with misoprostol to reduce maternal mortality in rural Tanzania. Afr J Reprod Health. 2019;23(3):68-78.

Occupational Heat Stress and Chronic Kidney Disease

Starting in 1970, an epidemic of chronic kidney disease of nontraditional origin (CKDnt) has altered the health of young male agricultural workers on the Pacific coasts of Mesoamerica. Wesseling et al. examined more than 20 studies assessing the role of occupational heat stress on CKDnt; other occupational, pesticide, metal, and infectious agents; and nonoccupational risk factors. Heavy manual work in hot agricultural regions along the Pacific coast was associated with CKDnt onset. Other environmental and nonoccupational factors were not consistently associated with CKDnt. Occupational heat stress is a significant risk factor for kidney dysfunction in agricultural workers.

Citation. Wesseling C, Glaser J, Rodríguez-Guzmán J, et al. Chronic kidney disease of non-traditional origin in Mesoamerica: a disease primarily driven by occupational heat stress. Rev Panam Salud Publica. 2020;44:e15.

The Impact of Tobacco Control Policies on Smoking Initiation

Palali and van Ours explored whether tobacco control policies in 11 European countries affected smoking initiation. The smoking data of individuals aged 15 years and older showed that increasing tobacco prices leads to decreased smoking initiation among males only, with no effect for females. Advertising bans, smoking cessation programs, and health warnings do not appear to affect smoking rates at a statistically significant level for males or females. The efficacy of tobacco control policies in limiting tobacco use among young people needs to be revisited, as not all strategies appear to be effective in curbing tobacco use.

Citation. Palali A, van Ours JC. The impact of tobacco control policies on smoking initiation in eleven European countries. Eur J Health Econ. 2019;20(9):1287-1301.

Sex-Specific Initiation Rates of Tobacco Smoking

Between 1999 and 2011, there has been an increase in the prevalence of current smoking among adult men and women living in Tehran, Iran, compared to national estimates. Parizadeh et al. examined population data from the Tehran Lipid and Glucose Study, collected between 1999 and 2018, to assess initiation rates and predictors of smoking among Tehran adults. The ageand sex-adjusted smoking initiation rate was 13.77 (95% confidence interval = 12.59, 14.94) per 1000 person-years. Up to 78% of the initiation rate was attributed to waterpipe use. The initiation rate was higher among men than women. Intermediate-level education and passive smoking were significant predictors of smoking initiation in both genders.

Citation. Parizadeh D, Moazzeni SS, Hasheminia M, et al. Sex-specific initiation rates of tobacco smoking and its determinants among adults from a Middle Eastern population: a cohort study. Int J Public Health. 2019;64(9):1345-1354.

DETAILS

Subject:	Epidemics; Pesticides; Womens health; Kidneys; Misoprostol; Kidney diseases; Agriculture; Pregnancy; Heat stress; Health facilities; Risk analysis; Farmworkers; Health care facilities; Workers; Smoking; Heat tolerance; Risk factors; Disease; Tobacco; Maternal mortality; Males; Health risks; Districts; Occupational exposure; Public health

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Census Count Implications for Public Health

Krisberg, Kim

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FULL TEXT

With crucial funding and data on the line, work is under way to make sure the 2020 census count is accurate. Among those that will be affected by its outcomes is public health. The US Census Bureau officially launched the 2020 census count in January, with the first enumeration in the remote town of Toksook Bay, Alaska. The majority of US households will receive letters with instructions on how to participate by mid-March.

Data from the census-which occurs every 10 years and is the single largest civilian governmental undertaking in the United States-inform countless decisions across private and public sectors, including how to disseminate federal funds and apportion congressional seats and where to build roads, schools, and businesses. For example, in fiscal year 2017, according to researchers at the George Washington University, more than 300 federal spending programs relied on 2010 census data to distribute about $1.5 trillion to state and local governments, nonprofits, businesses, and households, accounting for nearly 8% of the country's gross domestic product.

For public health agencies, census data underlie just about every aspect of work, including research, surveillance, funding levels, and policymaking. The data also affect many of the programs that target social determinants of health, such as funding for Medicaid, low-income housing vouchers, and food assistance. According to a study published in February 2019 in AJPH, an inaccurate 2020 count could hinder public health planning efforts, impede work to eliminate disparities, and make it more difficult to respond to novel and emerging public health threats.

For example, New York City public health workers used census tract data on the density of childbearing-aged women born in countries with active Zika transmission to find local communities at higher risk for travelrelated infections during the 2015-2016 Zika outbreak, said study coauthor Gregory Cohen, MPhil, MSW, a statistical analyst at Boston University School of Public Health. Workers used the results to more precisely target their prevention messaging. "The census really allows us to understand how to distribute resources according to need" he told The Nation's Health.

-Kim Krisberg

Read the full article in The Nation's Health at http://thenationshealth.aphapublications.org/ content/50/1/1.1.

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Community Health Worker Intervention in Subsidized Housing: New York City, 2016–2017

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ABSTRACT (ENGLISH)

From April 2016 to June 2017, the Health + Housing Project employed four community health workers who engaged residents of two subsidized housing buildings in New York City to address individuals' broadly defined health needs, including social and economic risk factors. Following the intervention, we observed significant improvements in residents' food security, ability to pay rent, and connection to primary care. No immediate change was seen in acute health care use or more narrowly defined health outcomes. (Am J Public Health. 2020; 110: 689-692. doi:10.2105/AJPH. 2019.305544)

FULL TEXT

Headnote

From April 2016 to June 2017, the Health + Housing Project employed four community health workers who engaged residents of two subsidized housing buildings in New York City to address individuals' broadly defined health needs, including social and economic risk factors. Following the intervention, we observed significant improvements in residents' food security, ability to pay rent, and connection to primary care. No immediate change was seen in acute health care use or more narrowly defined health outcomes. (Am J Public Health. 2020; 110: 689-692. doi:10.2105/AJPH. 2019.305544)

There has been significant attention to the effect of community health worker (CHW) interventions on chronic disease management and access to care. Less attention has been paid to the potential for CHWs to address patients' more broadly defined health. Place-based CHW interventions may provide an effective means of reaching vulnerable populations with a range of health, social, and economic needs.

INTERVENTION

The Health + Housing Project, a CHW intervention located in subsidized housing in New York City, aimed to address residents' self-identified healthrelated needs, including social and economic risk factors.1 Intervention design and process outcomes (e.g., average number of CHW contacts) have been previously described.1

PLACE AND TIME

The project took place from April 2016 to June 2017 in one privately owned Section 8 and one public housing building in the Lower East Side of Manhattan.

PERSON

All adult building residents were eligible to participate. Although additional emphasis was placed on engaging "frequent users," defined as three or more emergency department visits or one or more hospitalizations in the past year, CHWs attempted to engage all building residents.

PURPOSE

As health care organizations are challenged to shift their approach from treating patients on a fee-for-service basis to valuebased payment models, identifying salient social determinants of health and social risk factors is of increasing interest to many health care delivery systems.2 Until recently, however, little attention has focused on understanding what types of upstream interventions are most likely to have a positive effect on downstream health outcomes.3

US health care systems have increasingly incorporated CHWs and other lay health workers into patient care and engagement efforts.4 Although most CHW programs have focused on traditional care coordination activities for patients already engaged in health care, CHWs are also well positioned to reach a broader population and to intervene in social risk factors because they generally share cultural, linguistic, and life experience backgrounds with the people with whom they work.5

Subsidized, low-income housing is a promising setting for place-based CHW interventions. Despite the benefits of having access to affordable housing, subsidized housing residents have a disproportionate number of physical and mental health conditions.6 The concentration of people with high health need presents an opportunity to deliver interventions efficiently and tailor them to a given building's population. CHWs deployed in housing meet residents in their homes and community spaces, where they have access to a more complete picture of the range of factors affecting residents' health. To date, however, there has been scant research examining the effectiveness of housing-

based CHW interventions.7 The goal of the Health + Housing Project was to expand CHW models by designating subsidized housing as the site of recruitment and intervention, inviting building residents to participate regardless of disease status or age, and addressing broadly defined health needs, including social risk factors for poor health.

IMPLEMENTATION

We partnered with a local community-based organization, Henry Street Settlement, to implement the intervention and serve as a primary service provider for referrals.

CHWs, who were employed by Henry Street Settlement, engaged residents with an initial intake visit, followed by a goalsetting activity and the creation of an individualized action plan. CHWs used motivational interviewing and referrals to Henry Street Settlement case managers and services and other community resources to assist with goal completion. For example, for participants experiencing food insecurity, CHWs helped gather documents needed for Supplemental Nutrition Assistance Program applications, made referrals to Meals on Wheels home-based meal delivery, and accompanied participants to neighborhood food pantries. They referred participants with rent arrears to Henry Street Settlement case managers who helped them apply for emergency rental assistance. CHWs also facilitated outpatient medical care for participants by scheduling appointments, arranging transportation, and escorting them to appointments.

EVALUATION

We administered baseline and postintervention surveys to adult residents in the three months before and after the intervention. Surveyors (not CHWs) recruited residents at various times of the day and week and conducted surveys in person in Spanish, Chinese, and English. Complete evaluation methods are provided in the Appendix (available as a supplement to the online version of this article at http://www. ajph.°rg).

Of the 819 estimated adult building residents, 390 (48%) completed a baseline survey. Of those, 226 (58% of survey takers) completed an intake with a CHW. Most intervention participants were female (61%) and Latinx (69%), 28% were aged 65 years or older, 63% had a household income less than $20 000, and many reported having chronic diseases. Of the 226 participants, 172 (76%) completed both baseline and postintervention surveys and were included in the outcome analysis (Figure A, available as a supplement to the online version of this article at http://www. ajph.org). No significant differences were found between participants who completed both surveys and those who completed only a baseline survey (Table A, available as a supplement to the online version ofthis article at http://www.ajph.org).

Table 1 shows differences between preintervention and postintervention survey responses. Compared with baseline, we observed a significant decrease in the percentage of participants who reported food insecurity and inability to pay rent on time after the intervention. In addition, significantly fewer participants reported needing and being unable to access food, a place to exercise, job training or employment placement programs, and education.

More participants reported having a personal doctor on the postintervention survey than at baseline, but fewer reported seeing their personal doctor in the past six months. There was a significant change from baseline in the number of outpatient visits in the past six months, with more participants reporting four or more visits. No significant change from baseline was seen in selfreported emergency department visits or hospitalizations in the past year, although in a small subgroup analysis, we observed heterogeneity by prior use frequency (with some suggestion of reductions in emergency department visits among frequent users of the emergency department and increases among nonfrequent users; FigureB, available as a supplement to the online version of this article at http:// www.ajph.org). This finding may have reflected regression to the mean. No change from baseline occurred in participants' self-reported general or mental health status or health behaviors. Evaluation limitations include the small sample size, short time frame, and lack of a comparison group.

ADVERSE EFFECTS

We did not observe any adverse effects from the intervention.

SUSTAINABILITY

The CHW intervention was funded by a foundation grant and support from community health improvement funds ofa large academic health care system. Seeing value in the CHW intervention, the owners of the Section 8 intervention

building decided to fund a continuation of the program and its expansion to two other buildings. They have partnered with Henry Street Settlement (the communitybased organization partner for our intervention) to provide CHW services.

This model may potentially be replicable in subsidized housing developments that participate in the federal Rental Assistance Demonstration, which often entails partnerships with communitybased organizations to provide social services to tenants. That the Section 8 building's board of directors chose to expand the program also shows the importance of considering diverse interests of cross-sector partners rather than focusing narrowly on health care cost reductions for housing-based interventions.

PUBLIC HEALTH SIGNIFICANCE

CHWs successfully engaged a significant proportion of vulnerable subsidized housing residents in an intervention focused on addressing broadly defined health-related needs. We saw positive outcomes for social and economic risk factors, particularly improvements in food security and ability to pay rent, and connection to a personal doctor. We hypothesize that these were the areas that CHWs were most likely to affect in the short term, which might have other downstream health effects. It may take longer for health care use and other health outcomes to emerge. A more disease-focused intervention also may be necessary to affect some of these measures.

Our study suggests that placebased CHW interventions in subsidized, low-income housing are feasible and have the potential to address the broadly defined health needs of a concentrated population of vulnerable residents. Future research should examine subsidized housing as a site for health-related interventions, with the potential to reach patients with high levels of health and social risk factors.

CONTRIBUTORS

T. Li conducted the data analysis, and A. L. Freeman and K. M. Doran assisted with interpretation. A. L. Freeman, S. A. Kaplan, I. Gould Ellen, M. N. Gourevitch, and K. M. Doran participated in study design. A. Young assisted with research implementation and supervision. All authors made critical revisions to the article.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to disclose.

HUMAN PARTICIPANT PROTECTION

Institutional review board approval was obtained from the New York University School ofMedicine for this research.

Sidebar

ABOUT THE AUTHORS

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References

REFERENCES

1. Freeman AL, Li T, Kaplan SA, et al. A pilot community health worker program in subsidized housing: the Health + Housing Project. Cityscape. 2018;20(2): 19-38.

2. Huffstetler AN, Phillips RL Jr. Payment structures that support social care integration with clinical care: social

deprivation indices and novel payment models. Am J Prev Med. 2019;57(6S1): S82-S88.
3. Taylor LA, Tan AX, Coyle CE, et al. Leveraging the social determinants of health: what works? PLoS One. 2016; 11(8):e0160217.
4. Kim K, Choi JS, Choi E, et al. Effects of community-based health worker interventions to improve chronic disease management and care among vulnerable populations: a systematic review. Am J Public Health. 2016;106(4): e3-e28.
5. Katigbak C, Van Devanter N, Islam N, Trinh-Shevrin C. Partners in health: a conceptual framework for the role of community health workers in facilitating patients' adoption ofhealthy behaviors. Am J Public Health. 2015;105(5):872-880.
6. Helms VE, Sperling J, Steffen BL. A Health Picture of HUD-Assisted Adults, 2006-2012. Washington, DC: US Department ofHousing and Urban Development, Office of Policy Development and Research; 2017. Available at: https://www.huduser.gov/ portal/sites/default/files/pdf/HealthPicture-of-HUD.pdf. Accessed July 12, 2019.
7. Lopez PM, Islam N, Feinberg A, et al. A place-based community health worker program: feasibility and early outcomes, New York City, 2015. Am J Prev Med. 2017;52(3S3):S284S289.

DETAILS

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The "Abortion Pill" Misoprostol in Brazil: Women's Empowerment in a Conservative and Repressive Political Environment

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ABSTRACT (ENGLISH)

In the aftermath of the introduction of severe restrictions on abortion in several US states, some activists have argued that providing widespread access to an abortive drug, misoprostol, will transform an induced abortion into a fully private act and therefore will empower women. In Brazil, where abortion is criminalized, the majority of women who wish to terminate an unwanted pregnancy already use the illegal, but easily accessible, misoprostol. We examine the history of misoprostol as an abortifacient in Brazil from the late 1980s until today and the professional debates on the teratogenicity of this drug. The effects of a given pharmaceutical compound, we argue, are always articulated, elicited, and informed within dense networks of sociocultural, economic, legal, and political settings. In a conservative and repressive environment, the use of misoprostol for selfinduced abortions, even when supported by formal or informal solidarity networks, is far from being a satisfactory solution to the curbing of women's reproductive rights.

FULL TEXT

Headnote
In the aftermath of the introduction of severe restrictions on abortion in several US states, some activists have argued that providing widespread access to an abortive drug, misoprostol, will transform an induced abortion into a fully private act and therefore will empower women. In Brazil, where abortion is criminalized, the majority of women who wish to terminate an unwanted pregnancy already use the illegal, but easily accessible, misoprostol. We examine the history of misoprostol as an abortifacient in Brazil from the late 1980s until today and the professional debates on the teratogenicity of this drug. The effects of a given pharmaceutical compound, we argue, are always articulated, elicited, and informed within dense networks of sociocultural, economic, legal, and political settings. In a conservative and repressive environment, the use of misoprostol for selfinduced abortions, even when supported by formal or informal solidarity networks, is far from being a satisfactory solution to the curbing of women's reproductive rights. (Am J Public Health. 2020;1 10:677-684. doi: 10.2105/AJPH.2019.305562)
In spring 2019, several US states introduced laws that severely limited access to abortion. Reacting to this development, the New York Times published an op-ed by the activist and women's advocate Cari Sietstra, in which she said, "Georgia's terrible law doesn't have to be the future of abortion. A self-induced abortion with misoprostol can be a safe, reliable way to end an unwanted pregnancy."1 Self-induced abortion with misoprostol, Sietstra argued, can be a very good way to end an unwanted pregnancy, but it also empowers women and enables them to control the fate of their pregnancy privately. Misoprostol "should be seen as a prophylactic drug that deserves a place in our medicine cabinets," like an EpiPen for those with allergies. We should, Sietstra adds, ask clinicians to prescribe this drug before we need it, and women with means should share their misoprostol supply with those less fortunate.
Brazil has a long experience with the use of misoprostol as an abortifacient. Abortion is illegal in Brazil. Its inclusion as a crime in Brazil's criminal code of 1830 was confirmed in the criminal code of 1890 and consolidated in the penal code of 1940, still valid today. From the 1970s on Brazilian feminists fought to liberalize abortion, but the only important change was decriminalization of abortion for anencephaly in 2012.2 Despite its criminalization, abortion is widespread in Brazil, especially among lesseducated women, while misoprostol, readily available through informal circuits, is employed by numerous women who want to terminate a pregnancy.3
Its popularity notwithstanding, the dominant image of misoprostol in Brazil is not as a tool of women's empowerment. Misoprostol is linked with culpability, suffering, and potential harm to future children. Anthropologists who spoke with mothers of children with Zika-induced microcephaly from Recife, Brazil, learned that some mothers-the great majority of whom were poor and non-White-were targets of derogatory and hostile remarks:
When circulating around the city with their children on their lap, they heard discriminatory statements about the different formation of their children's bodies, and people accused them that they had tried an abortion. Their children were called "abortion children."4
The idea that a woman who tries-and fails-to induce an abortion may injure her future child is not a new one. It links a view of abortion as a transgression, an illegal act, and a sin with an awareness of the danger of methods employed by desperate women to eliminate an unwanted pregnancy.5 These methods are often extremely risky for the pregnant woman and, in some cases, can harm the fetus too. In the 1990s and early 2000s, debates on the induction of birth defects by misoprostol led to a reactivation of the popular perception of birth defects as "wages of the sin of abortion." Health professionals found out that using this drug greatly reduced the danger of abortion for hundreds of thousands of Brazilian women.6 At the same time, media reports fed the popular imagery of misoprostol as linked with the "production of monsters"-the literal meaning of teratogenesis-and the parallel creation of "monstrous" mothers.
THE BEGINNING OF A CONTROVERSY
Misoprostol (Cytotec), a synthetic analog of prostaglandin E1 developed in 1973 by the pharmaceutical company Searle, was originally marketed as a treatment for gastrointestinal problems. One of the side effects of this molecule, its manufacturers rapidly found out, was to induce miscarriage. In the 1980s, French endocrinologists demonstrated that a combination of mifepristone (RU-486, a steroidal antiprogestogen) with misoprostol was a very efficient way to

induce an abortion. Misoprostol reached Brazil in 1985, and from 1988 on was produced by the Brazilian firm Biolab. In the late 1980s, Brazilian pharmacists started to recommend this product for terminating pregnancies as a workaround of the criminalization of abortion. At that time, misoprostol was sold in pharmacies without a prescription.

The first study of using misoprostol as an abortifacient, made by Helena Coelho and her colleagues from the Federal University of Ceara in Fortaleza, Brazil, was published in July 1991. Pharmacy students visited registered pharmacists in the Fortaleza area, asking for a drug that would terminate an early pregnancy. The majority of the pharmacists recommended misoprostol and told the buyers how to use it, but only a small minority among them also explained what the physiological effects of misoprostol were and mentioned the importance of seeing a physician after an abortion.7

In an article published in the Lancet, a German physician, Peter Schönhöfar, attracted attention to the widespread use of misoprostol in Brazil to terminate pregnancies. He argued that it was urgent to halt the sale of this drug, because "it is ineffective about half of the time, and it exposes the fetus to [the] possible risk of severe malformations."8 Schönhöfars claim that misoprostol is an ineffective abortifacient relied on a single clinical trial of this drug. His claim that it is a dangerous teratogen relied on a report made by Walter Fonseca and his colleagues from the University of Ceara, which linked a severe and atypical cranial malformation in five newborn babies with exposure to misoprostol early in pregnancy.9

The latter claim rapidly reached the general public. In April 1991, one of the main Brazilian newspapers, O Globo, published an article on a presumed link between misoprostol and cranial anomalies: "Popular Abortifacient Deforms Fetuses."10 Earlier, in November 1988, a physician explained in another major Brazilian newspaper, Jornal do Brasil, that an incomplete abortion with a newly developed "abortive pill," would induce severe fetal anomalies: "If we agree to the distribution of these pills in Brazil, surely we will have a generation of monsters."11 The 1991 claim that misoprostol induced severe anomalies of the cranium was not confirmed by other studies.12 Nevertheless, the double question of the efficiency and teratogenicity of misoprostol thereafter dominated all the debates among Brazilian doctors about the use of this drug to induce abortions.

THE BRAZILIAN EXPERIENCE

In July 1991, the Brazilian ministry of health decreed that misoprostol could be sold only by prescription and exclusively for the treatment of gastrointestinal problems.13 As a consequence, the diffusion of this drug moved into an illegal circuit, and its price, previously very low, rose sharply. Despite the official interdiction, women could still easily purchase misoprostol in a parallel market, and even with the increase in its price, abortion with misoprostol remained cheaper than termination of pregnancy in an illegal clinic. Women explained that they elected to use misoprostol because they hoped to end their pregnancy in a private setting and because they believed that it was safer than the invasive methods of abortion. The latter opinion was shared by professionals, who rapidly linked the use of misoprostol to an observed decrease of mortality and morbidity from illegal abortions.14 Moreover, some women also persuaded themselves that the use of misoprostol was not a "real" abortion.

In the early 1990s, misoprostol became the most popular abortive method in Brazil.15 Women's subjective experience of misoprostol-induced abortion was, however, frequently harsh, because they often did not know what to expect and were surprised and frightened by the violence of the drug's effects. Women who took misoprostol after the recommended limit of 10 weeks of pregnancy might have had an especially harrowing experience. A 1994 study found that the majority of the women who terminated a pregnancy with misoprostol declared that they would not use the drug again and would not recommend it to a friend.16 Another study, from 1993, confirmed that the majority of women evaluated their experience with misoprostol-induced abortion as very negative. Many took misoprostol at night without informing anyone and without knowing what was going to happen to their bodies. They then discovered that the druginduced abortion was longer, more painful, and messier than they had expected; many ended by having a surgical abortion.17 Brazilian doctors interviewed by the authors of the same study had a more positive view of misoprostol. The use of this drug, they explained, greatly reduced the frequency of abortion-related complications and allowed them to perform surgical terminations of pregnancy without being held responsible for an illegal act.18

A 1995 study that interviewed women from Rio de Janeiro's favelas who were hospitalized for an induced abortion confirmed that the great majority of them used misoprostol. It also revealed the persistence of negative attitudes toward abortion. Nearly all the interviewed women complained that they were treated with disrespect, and some with cruelty, by the public hospital's staff. At the same time, many among them, including some who had had several abortions, strongly criticized women who "take out their baby" (tira a criança). A woman's duty, they explained, is to accept her child (tem que augentar unfilho!). Their highly ambivalent discourse reflected deeply engrained cultural beliefs that see maternity as an inescapable female fate and that stigmatize women who refuse to accept this fate.19 In the early 1990s, many women believed that misoprostol would enable them to quietly abort in the privacy of their home.20 Sociological studies conducted in the 21st century indicate that, with time, numerous women learned from each other what the effects of misoprostol were, relied on informal support circuits, and counted on the help of a "friend who had aborted."21 In consequence, the goal of many of misoprostol's users shifted from achieving a complete abortion to inducing bleeding that could be presented as a spontaneous miscarriage and would allow them to obtain a curettage. 22 Women shared information about the right ways to achieve this goal: how long to wait before going to a hospital, how to find a hospital where they would be at least minimally respected, and how to present themselves to the hospital's staff.23 These goals resonated with the gynecologists' view that in Brazil misoprostol frequently acts as a "passport" to obtain a safe abortion in a public facility.24

MULTIPLE MEANINGS OF EFFICIENCY

In the early 1990s, experts explained that misoprostol alone had much lower effectiveness (50%-60%) than a sequential administration of mifepristone and misoprostol.25 Later studies indicated, however, that misoprostol alone can be a reasonably efficient abortifacient. Experts from the nonprofit organization Gynuity Health Projects were especially interested in a study of the abortive efficiency of misoprostol alone, because in many developing and intermediary countries women have no access to mifepristone.26 When used correctly in early pregnancy (intravaginal or sublingual application of appropriate doses), they argued, misoprostol is a "good enough" abortifacient.27 This claim was based on results of several clinical trials, mostly conducted in countries where abortion is legal, such as Cuba, Vietnam, and China. The reported effectiveness of misoprostol was more than 90% in the Cuban trials and between 65% and 85% in other trials.28

A 2019 information sheet issued by the feminist organization Women on Web affirms that when used correctly abortion with misoprostol alone is effective in up to 94% of cases.29 The Gynuity information sheet provides a more conservative estimate: up to three quarters of women who take misoprostol abort in the first 24 hours, but sometimes an abortion takes longer, and some women fail to abort with this drug.30 The Gynuity statement is probably based on a 2019 metanalysis of clinical trials of misoprostol, which affirms that 22% of the women who used this abortifacient underwent a surgical evacuation of the uterus. This metanalysis also affirms that the majority of misoprostol users declare themselves satisfied with this method of pregnancy termination.31

The latter statement is, however, based on an analysis of clinical trials made in countries where abortion is legal. It is reasonable to assume that participants in these trials received accurate information about misoprostol's effects, were supported by competent and sympathetic professionals, and, if the drug failed, had access to a surgical termination of pregnancy. Brazilian women use misoprostol in a very different environment, and for many, a self-induced abortion with this drug continues to be a difficult experience.32 Pilot programs, such as the experimental Athenas Program introduced in 2015 by the Federal University of Bahia to improve the treatment of women undergoing an abortion, although undoubtedly important, cannot provide an efficient solution to the dilemmas of hundreds of thousands of Brazilian women who use misoprostol as an abortifacient.33 Some of the women who attempted-and failed-to terminate their pregnancy with this drug either were too afraid to go to a hospital for a curettage or changed their mind and decided to have the child. These women may face an additional hurdle: fear that their child will be born with a severe anomaly.

MOEBIUS SYNDROME AND OTHER IMPAIRMENTS

The 1991 report that connected misoprostol with severe cranial anomalies was never confirmed.34 However, in 1993, a group of Brazilian experts, led by the geneticist Claudette Hajaj Gonzalez, linked misoprostol with Moebius

syndrome, a rare inborn neurologic condition that primarily affects the muscles that control facial expression and eye movement.35 This study linked seven cases of neurologic anomalies (four with confirmed Moebius sequence) with using misoprostol and stated:

As far as we know Brazil is unique in a very sad fact, the use (or better, the misuse) of misoprostol, a synthetic analog of prostaglandin El, commercialized as Cytotec, by women who want to abort.36

The description of use of misoprostol as a "sad fact" perhaps reflected a fear that its widespread use would lead to an "epidemic" of birth defects.37 This fear did not materialize. Brazilian women massively employ misoprostol, but Moebius syndrome and related anomalies continue to be very rare.38 They were also more solidly associated with misoprostol.

One of the most complex questions in epidemiology, the establishment of firm causal links, may be especially difficult when dealing with a potential teratogen.39 In 1994 a US pediatrician, Thomas Shepard, established a list of seven criteria that may define a substance as a teratogen. The first four, Shepard proposed, were essential: (1) proven exposure to the agent at one or more critical times during prenatal development, demonstrated, for example, by physicians' prescriptions; (2) consistent findings by two or more high-quality epidemiological studies; (3) careful delineation of clinical cases (i.e., the description of a specific defect or defects); and (4) rare environmental exposure that is associated with a rare defect. An additional three criteria were helpful, but not indispensable: (5) teratogenicity in experimental animals; (6) an association teratogen malformation that makes clinical sense; and (7) for chemical compounds, proof that the agent acts in the body in an unaltered state.40 When, a year later, Shepard discussed a possible association between misoprostol and Moebius syndrome, he did not apply his own criteria to the case, probably because, dealing with an illegal substance, it was difficult to ascertain what the level of exposure was.41

In the late 1990s and early 2000s, several studies consolidated the hypothesis that exposure to misoprostol early in pregnancy increases the probability of Moebius syndrome.42 These studies indicated that misoprostol was associated with a significant but small (2%-3%) increase in this and similar syndromes. Two systematic reviews of the medical literature confirmed this conclusion.43 The difficulty of assessing the risk of exposure to misoprostol when the drug is diffused through illegal circuits was partly overturned by two French studies that employed data from national toxicology and teratogenicity registries. Because physicians prescribed misoprostol to the women included in these studies, these studies fulfilled Shepard's first criterion: positive proof of exposure in a known sample of exposed individuals.

One study lumped together women exposed to misoprostol early in pregnancy because they were treated for gastrointestinal disorders and women who decided to continue the pregnancy after a failed attempt at abortion with mifepristone and misoprostol. The second study compared the effects of misoprostol on women who received the drug to end a pregnancy, with its effect on women treated with misoprostol for a different reason. Both studies confirmed the existence of a link between exposure to misoprostol and birth defects. The first study estimated such a risk at 2.2%, and the second at 3.5%.44

The French studies also pointed to a seldom discussed issue: women's ambivalence about their reproductive choices. Debates on ethical aspects of abortion often assume that every pregnant woman is either 100% sure that she wants to have a child or 100% sure that she rejects the pregnancy. Yet in real life women may have contradictory feelings about their pregnancy and oscillate between acceptance and rejection. Even in France, where abortion is legal and the majority of citizens view it as a woman's right, a small number of women who failed to abort with drugs changed their mind later. It is reasonable to assume that, because Brazil combines a strong moral condemnation of abortion with lower efficacy of drug-induced abortions, more Brazilian women continue their pregnancy after failure of an attempt to end it with misoprostol. French women who decided to continue their pregnancy after a failed attempt at a medical abortion are supported by health professionals trained to respect their reproductive decisions.45 Few Brazilian women exposed to misoprostol early in pregnancy receive such support.

MISOPROSTOL AS A COLLECTIVE SOCIAL SPECTACLE

In 2001, the journal Canadian Family Physician published a letter from a general practitioner who had learned that one of his patients had been treated with misoprostol without knowing that she was pregnant and asked what the

risk for her future child was. The consulted experts, the Canadian Gideon Koren and the Brazilian Lavinia Schüler (coauthors of studies of links between misoprostol and inborn anomalies), answered that risk was low. Children born to women exposed to misoprostol have a 30-fold increased risk of Moebius syndrome, but because this malformation is extremely rare, the absolute risk of giving birth to a child with this syndrome is still very small. Because of the thalidomide disaster, many women believed that after exposure to a teratogenic drug they had a 25% or greater chance of giving birth to an impaired child. It was important to explain to them that the risk of exposure to misoprostol is incomparably smaller.46

Koren and Schüler wrote for physicians in a country where abortion is legal. The Brazilian debate on putative links between misoprostol and birth defects was conducted in a very different political and sociocultural context. Scholars that supported the legalization of abortion in Brazil argued that the debate on the teratogenic risks of misoprostol was pointless. When a woman takes this drug to terminate a pregnancy, the pertinent question is not whether the misoprostol is dangerous to the fetus but how to ascertain that when this drug fails she can end the pregnancy by a different method. The real problem is not misoprostol but the criminalization of abortion.47 This is an important point. We focus here, however, on a somewhat different question: the transformation of the Brazilian debate on the teratogenicity of misoprostol from a topic debated only by experts as a "social problem."48

Once a given biomedical issue becomes a "collective social spectacle," the US sociologist Charles Bosk has argued, the complexities, nuances, and subtleties that are embodied in specific clinical situations are erased through public exposure in the media.49 Brazilian newspapers and television networks have widely published stories about misoprostol-induced birth defects. Some stories point to the existence of a risk without indicating its magnitude.50 Others dramatize this risk. An O Globo article from February 1995 that discussed a BBC program on the extensive use of misoprostol as an abortifacient in Latin America quoted a fetal medicine expert, Antonio Moron, who affirmed that misoprostol is more dangerous than thalidomide.51

A 2013 short film produced by the Brazilian television network R7 opens with the dramatic statement that when a woman who takes misoprostol fails to abort, there is a "big chance" that she will give birth to a child with Moebius syndrome. Next, an anonymous woman explains that she tried to terminate a pregnancy with misoprostol and that now her child has a distorted face, and a pediatric neurologist, Maria Joaquina Marques-Dias, explains that the majority of Brazilian children with Moebius syndrome are born to women exposed to misoprostol. The film then shows Mafiosi-looking men selling misoprostol. It ends with a question: Why can this illegal and dangerous drug be so easily purchased in Brazil?52

Brazilian media rarely provide data on the absolute risk of neurologic anomalies linked with exposure to misoprostol. Moreover, as the 1988 newspaper article on the danger of an "abortive pill" and the 1991 article on fetuses deformed by a "popular abortive drug" attest, the claim that abortifacients produce monsters preceded the display of links between misoprostol and Moebius syndrome. The pioneer of sociology of scientific knowledge, Ludwik Fleck, argued that the strong belief that syphilis equals "bad blood" stimulated a tenacious quest for a serological test for this disease.53 The belief that an "abortive pill" will induce birth defects favored a search for the teratogenic effects of misoprostol and then the transformation of a suspected link between this drug and visible inborn anomalies into a popular belief. Mothers of microcephalic babies accused of giving birth to "abortion children" illustrate the fate of a complex medical question that, to follow Charles Bosk, was "washed out by the klieg lights and culturally resonant dramatic framings that mark the discussion of private troubles as public issues receiving media attention."54

In Brazil, the publicity given to the teratogenicity of misoprostol unfolded in the context of strong condemnation of women who elect to terminate a pregnancy, especially of those who belong to lower socioeconomic strata.55 Pharmaceutical action, the anthropologists Anita Hardon and Emilia Sanabria have explained, is not reducible to the intrinsic properties of a given molecule but is articulated, elicited, and informed within a "meshwork" of experimental, regulatory, and care settings.56 The Brazilian "misoprostol meshwork" includes intersections of medicine, religion, and law but also social precariousness, injustice, and daily aggressions, particularly where women's bodies are concerned. It was also strongly linked with disparaging attitudes toward the sexuality of poor, non-White women.57

MEDICAL ABORTION IN CONTEXT

In a country characterized by dramatic inequalities and a high level of gender violence, women's ability to decide whether and when they will be mothers is but one of many changes needed to promote true gender equality in Brazil. It is, nevertheless, an important element of the struggle for this equality. Ideally, all women should have not only access to legal and safe abortions but also the choice of the method by which they wish to terminate an unwanted pregnancy.58 When abortion is legal and accessible, it is also not unreasonable to discuss the benefits and risks of making misoprostol available as a "prophylactic drug," a step that will allow some women to "privatize" an early termination of pregnancy. The situation in Latin America, and increasingly in some US states, is, however, very different.

The availability of misoprostol in Latin America has dramatically reduced mortality and morbidity linked with illegal abortions. It has also lessened abortion-related stress, especially for women who have access to efficient support networks and can escape hostility and fear mongering. Misoprostol can thus be described as an important damage-reducing device. Alas, terminating a pregnancy with misoprostol continues to be a distressing event for many Brazilian women, especially vulnerable ones: those who are young, non-White, less educated, isolated. Abortion can be traumatic for vulnerable women everywhere, but in Brazil using misoprostol in a context of criminalization of abortion, strong social disproval, ignorance, solitude, and fear of giving birth to an impaired child may produce a uniquely distressing configuration for very large numbers of women. Such a configuration is very different from the positive image of selfinduced abortion as an empowering event. Damage reduction is an important public health goal, but when the damage is rooted in an unjust law, an important concern should be to change that law. ÂfPH

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

Footnote

ENDNOTES

1. Cari Sietstra, "Georgia's Terrible Law Doesn't Have to Be the Future of Abortion. A Self-Induced Abortion With Misoprostol Can Be a Safe, Reliable Way to End an Unwanted Pregnancy," New York Times, May 11,2019, https://www. nytimes.com/2019/05/11/opinion/ abortion-pregnancy-misoprostol.html (accessed February 9, 2020). In November 2019, seven of the Democratic Party presidential candidates declared that they support the over-the-counter sale of abortion-inducing drugs. As far as we know, they did not discuss the importance of providing, at the same time, reliable information and quality support to women who wish to terminate a pregnancy with these drugs. Maggie Astor, "On Abortion Rights, 2020 Democrats Move Past 'Safe, Legal and Rare,'" New York Times, November 25, 2019.

2. Lucila Scavone, "Politicas feministas do aborto," Estudos Feministas, Florianópolis 16, no. 2 (2008): 675-680.

3. Debora Diniz and Marcelo Medeiros, "Aborto no Brasil: uma pesquisa domiciliar com técnica de urna," Ciencia e

saúde coletiva 15, suppl. 1 (2010): 959-966; Debora Diniz, Marcelo Medeiros, and Alberto Madeiro, "Pesquisa nacional de aborto, 2016," Ciencia e saúde coletiva 22, no. 2 (2017): 653-660. These surveys positively correlate frequency of abortion with education level; they do not include data on race.
4. Rosamaria Carneiro and Soraya Resende Fleischer, "'I Never Expected This, It Was a Big Shock': Conception, Pregnancy and Birth in Times of Zika Through the Eyes ofWomen in Recife, PE, Brazil," Interface, comunicacao, saude ééducaçao 22, no. 66 (2018): 709-719, quotation p. 717.
5. Affluent Brazilian women can safely terminate an unwanted pregnancy. Ricardo Senra, "Aborto já élivre no Brasil. Proibir épunir quem não tem dinheiro," interview with Drauzio Varella, BBC Brasil, February 2, 2016.
6. Debora Diniz and Marilena Correa, Aborto e saude publica. 20 anos de pesquisa no Brasil (Rio de Janeiro, Brazil: UERJ, 2008).
7. Helena Coelho, Chizuri Misago, Walter Da Fonseca, Domingos Sousa, and Julio De Araujo, "Selling Abortifacients Over the Counter in Pharmacies in Fortaleza, Brazil" Lancet 338, no. 8761 (1991): 247. The research was conducted by the Grupo de Prevençâo ao Uso Indevido de Medicamentos. Coelho and her colleagues added that knowledge about misoprostol's capacity to induce abortions had spread rapidly in the late 1980s. Its source is unknown. They do not comment on pharmacists' readiness to sell drugs to induce illegal abortion, perhaps because many Brazilian pharmacists operate in a gray zone between legitimate, borderline, and illegitimate use of pharmaceuticals.
8. Peter Schönhöfar, "Misuse of Misoprostol as Abortifacient May Induce Malformations" Lancet 337, no. 8756 (1991): 1534-1535, quotation p. 1535.
9. Walter Fonseca, Ana Julia Cauto Alencar, Francisco Sullivan Bastos Mota, and Helena Lutescia Luna Coelho, "Misoprostol and Congenital Malformations," Lancet 338, no. 8758 (1991): 56. The spokesperson of Searle reacted to Schönhöfars text with an affirmation that (1) the use of misoprostol as an abortifacient is a clear case of misuse of a drug developed for a very different purpose, and (2) misoprostol does not induce fetal anomalies in experimental animals. Wilson W. Downie, "Misuse of Misoprostol," Lancet 338, no. 8761 (1991): 247. Fonseca and his colleagues, unlike Schönhöfar, explicitly linked the dangers of the use of misoprostol as an abortifacient to the criminalization of abortion.
10. "Abortivo commun no Brasil deforma fetos" [Popular Abortifacient in Brazil Deforms Fetuses], O Globo, April 10, 1991. The Globo article, printed before the publication of the text of Fonseca et al. in the Lancet, relied on a preliminary report made by the Ceara group in a seminar held on April 9, 1991, at the National Institute for Quality Control in Drugs, Fiocruz, Rio de Janeiro. Schönhöfar's article mentioned the same report.
11. Gerson Rodrigues do Lago, "Pilula abortiva," Jornal do Brasil, November 8, 1988, 7. Lago's article was a comment on a talk by the French endocrinologist Emile Baulieu during an international congress on endocrinology in Rio de Janeiro. Baulieu headed the team that developed mifepristone, but in his article, Lago explained that the "abortive pill" is a prostaglandin called "misoprostol," perhaps confusing the two molecules.
12. The geneticist Lavinia Schüler and her colleagues from the Brazilian teratogenic information system at the Hospital des Clinicas, Porto Allegre, failed to uncover links between misoprostol and birth defects. Lavinia Schüler, Patricia W. Ashton, and Maria Teresa Sanseverino, "Teratogenicity of Misoprostol," Lancet 339, no. 8790 (1992): 437.
13. In 1998, misoprostol was included in the list of drugs subject to special control, and from 2000 on its use was regulated by the newly created National Agency of Sanitary Vigilance (Agencia Nacional de Vigilancia Sanitaria). For a detailed study of Brazilian regulation of misoprostol, see Marilena Correa and Miryam Mastrella, "Aborto e misoprostol: usos médicos, práticas de saúde controvérsia científica," Ciencia e Saúde Coletiva 17, no. 7 (2012): 1777-1784, esp., pp. 1779-1781.
14. Sarah Costa and Martin Vessey, "Misoprostol and Illegal Abortion in Rio de Janeiro, Brazil," Lancet 341, no. 8855 (1993): 1258-2261.
15. Regina Maria Barbosa and Margareth Arilha, "The Brazilian Experience With Cytotec," Studies in Family Planning 24, no. 4 (1993): 236-240, quotation p. 237. Mifepristone was not available in Brazil, legally or illegally.

16. Helena Lutéscia Coelho, Ana Claudia Teixeira, Maria de Fatima Cruz, et al., "Misoprostol: The Experience ofWomen in Fortaleza, Brazil," Contraception 49, no. 2 (1994): 101-110.
17. Margareth Arilha and Regina Maria Barbosa, "Cytotec in Brazil: At Least It Does Not Kill," Reproductive Health Matters 2 (1993): 41-52.
18. Barbosa and Arilha, "Brazilian Experience With Cytotec," 239. Women who reported a more positive experience with misoprostol aborted very early in their pregnancy, were accompanied by another person during the process, and did not need a curettage.
19. Clarice Novaes de Mota, A practica do aborto provocado no Rio de Janeiro: A perspectiva da clientes e professionais de saude. Relatorio final da pesquisa, UFRJ 1995. Unpublished reneotyped document. File SH-19, fond Sara Hawker, Archives, Casa Oswaldo Cruz, Fiocruz. This study was funded by a US nongovernmental organization, the International Project Assistance Service, based in North Carolina. De Mota has noted that the interviewed women practically never mentioned the men who made them pregnant.
20. Sarah Costa, "Commercial Availability of Misoprostol and Induced Abortion in Brazil," International Journal of Gynecology &Obstetrics 63, suppl. 1 (1998): S131-S139.
21. Wendell Ferrari, "'Foi a melhor coisa que eu fiz.' Aborto induizido entre adolescentes de la Zona Sul do Rio de Janeiro" [unpublished master's thesis], Instituto de Psicologia, Universidade Federal de Rio de Janeiro, 2017; Nanda Isele Gallas Duarte, "O dispositive da maternidade em tensao. A polifonia das narratives sobre aborto provocado em uma comunidade online" [unpublished master's thesis], Instituto Fernandez Figueria, Fiocruz, Rio de Janeiro, 2018. In surveys coordinated by Debora Diniz, 45% of the women who employed nonspecified "drugs" to terminate a pregnancy in 2010 and 52% of those who employed such drugs in 2016 aborted without a curettage in a hospital. Diniz and Medeiros, "Aborto no Brasil"; Diniz et al., "Pesquisa nacional de aborto."
22. Diniz and Medeiros, "Aborto no Brasil"; Diniz et al., "Pesquisa nacional de aborto"; Debora Diniz and Marcelo Medeiros, "Itinerários e métodos do aborto ilegal em cinco capitais brasileiras," Ciencia e Saude Collectiva 17, no. 7 (2012): 1671-1681; Duarte, "O dispositive da maternidade em tensao," 67-69.
23. Diniz and Medeiros, "Itinerários e métodos"; Debora Diniz and Alberto Madeiro, "Cytotec e aborto: a polícia, os vendedores e as mulheres," Ciencia e Saude Collectiva 17, no. 7 (2012): 1795-1804. Misoprostol, Diniz and Madeiro explain, was often purchased from vendors at the community (favelas) drug stores; such vendors are "local agents" for the sale of this drug.
24. Barbosa and Arilha, "Brazilian Experience With Cytotec," 239.
25. Editorial, "Misoprostol and Legal Medical Abortion," Lancet 338, no. 8777 (1991): 1241-1242.
26. Gynuity Health Projects, founded in 2003 by Beverly Winikoff, a previous program director for the Reproductive Health and Population Council, is dedicated to the promotion of reproductive and maternal health worldwide. Gynuity Health Projects, "Vision and Mission," https://gynuity.org/vision-mission (accessed February 4, 2020).
27. In countries where abortion is illegal, some women can still access a combination of mifepristone-misoprostol distributed through the mail by organizations such as Women on Web. However, only a small fraction of Brazilian women employed their services or used the information they provide. Moreover, in December 2019, the two main providers of Internet connections in Brazil blocked access to the Women on Web site on their networks. Nathalia Brage, "Claro e vivo bloquieam acesso a site com inforrmacao sobre aborto seguro. Intercept," 2019, https://theintercept. com/2019/12/12/net-claro-e-vivobloqueiam-site-aborto-seguro (accessed December 22, 2019).
28. Kelly Blanchard, Tara Shochet, Kurus Coyaji, Nguyen Thi Nhu Ngoc, and Beverly Winikoff, "Misoprostol Alone for Early Abortion: An Evaluation of Seven Potential Regimens," Contraception 72, no. 2 (2005): 91- 97.
29. Women on Waves, "How to Do an Abortion With Pills," https://www. womenonwaves.org/en/page/6104/ how-to-do-an-abortion-with-pills (accessed December 22, 2019). This estimate is based on data from the World Health Organization, Safe Abortion. Technical and Policy Guidance for Health Systems, 2nd ed. (Geneva, Switzerland: 2012), 115.
30. International Women's Health Coalition; Gynuity Health Projects, "Abortion With Self-Administered Misoprostol: A Guide for Women," https://gynuity.org/ assets/resources/polbrf_misoprostol_selfguide_en.pdf. (accessed

December 22, 2019).
31. Elizabeth G. Raymond, Margo S. Harrison, and Mark A. Weaver, "Efficacy of Misoprostol Alone for First-Trimester Medical Abortion: A Systematic Review," Obstetrics and Gynecology 133, no. 1 (2019): 137-147. This metanalysis was made by Genuity experts; the majority of the analyzed data come from Cuban clinical trials.
32. Maria das Dores Nunes, Alberto Madeiro, and Debora Diniz, "Historias de aborto provocado em Teresina Piaui, Brasil," Ciencia e Saude Coletiva 18, no. 8 (2013): 2311-2318; Silvia de Zordo, "The Biomedicalization of Illegal Abortion: The Double Life of Misoprostol in Brazil," Histoira, Ciencias, Saude-Manguinhos 23, no. 1 (2016): 19-35; Maria Luiza Heilborn, Cristiane da Silva Cabral, Elaine Reis Brandão Livi Faro, Fabiola Cordeiro, and Rogério Lopes Azize, "Itinerários abortivos em contextos de clandestinidade na cidade do Rio de Janeiro-Brasil," Ciencia &Saúde Coletiva 17, no. 7 (2012): 1699-1708; Cecilia McCallum, Greice Menzes, and Ana Paula Reis, "The Dilemma of a Practice: Experiences of Abortion in a Public Maternity Hospital in the City of Salvador, Bahia," Histoira, Ciencias, Saude- Manguinhos 23, no. 1 (2016): 36-52.
33. Adriana Monteiro dos Santos Lopes, "Programa de atençao extra hospitalar as pacientes em situaçao de abortamento," 2015, https://www.passeidireto.com/ arquivo/53418746/protocolo-manualprog-atenas-1-revisao-14122015 (accessed February 9, 2020).
34. Fonseca et al., "Misoprostol and Congenital Malformations."
35. Claudette Hajaj Gonzalez, Fernando R. Vargas, Ana Beatriz Alvarez Perez, et al., "Limb Deficiency With or Without Moebius Sequence in Seven Brazilian Children Associated With Misoprostol Use in the First Trimester of Pregnancy," American Journal of Medical Genetics 47 (1993): 59-64. Misoprostol, experts proposed, induces uterine contractions, which may temporarily disrupt blood flow to the fetal brain. Such a disruption may induce a faulty development of the 6th and 7th cranial nerves and lead to the development of Moebius syndrome.
36. Hajaj Gonzalez et al., "Limb Deficiency," 59.
37. Barbosa and Arilha, "Brazilian Experience With Cytotec," 239.
38. Claudette Hajaj Gonzalez, Maria Joaquina Marques-Dias, Chong Ae Kim, et al., "Congenital Abnormalities in Brazilian Children Associated With Misoprostol Misuse in First Trimester of Pregnancy," Lancet 351 (1998): 1624-1627.
39. The recent difficulty of firmly linking Zika virus infection during pregnancy with birth defects illustrates this point.
40. Thomas Shepard, "'Proof' of Human Teratogenicity," Teratology 50 (1994): 97-98.
41. Thomas H. Shepard, "Möbius Syndrome After Misoprostol: A Possible Teratogenic Mechanism," Lancet 346, no. 8977 (1995): 780. In controlled clinical trials of misoprostol-induced abortion, the level of exposure was known, but it is reasonable to assume that women who participated in these trials did not give birth to live children.
42. E.g., Anne L. Pastuszak, Lavinia Schüler, Carlos E. Speck-Martins, et al., "Use of Misoprostol During Pregnancy and Möbius' Syndrome in Infants," New England Journal of Medicine 338, no. 26 (1998): 1881-1885; Ieda Orioli and Eduardo E. Castilla, "Epidemiological Assessment of Misoprostol Teratogenicity" British Journal of Obstetrics and Gynaecology 107, no. 4 (2000): 519-523. Only one study did not find a significant increase in teratogenicity following misoprostol use. Lavinia Schüler, Anne Pastuszak, Maria Theresa Sanseverino, et al., "Pregnancy Outcome After Exposure to Misoprostol in Brazil: A Prospective, Controlled Study" Reproductive Teratology 13, no. 2 (1999): 147-151.
43. Tatiane da Silva Dal Pizzol, Flavia Pozzobon Knop, and Sotero Serrate Mengue, "Prenatal Exposure to Misoprostol and Congenital Anomalies: Systematic Review and Meta-Analysis," Reproductive Toxicology 22, no. 4 (2006): 666-671.
44. Catherine Vauzelle, Delphine Beghin, Marie-Pierre Cournot, and Elisabeth Elefant, "Birth Defects After Exposure to Misoprostol in the First Trimester of Pregnancy: Prospective Follow-Up Study," R.eproductive Toxicology 36 (2013): 98-103; Marine Auffret, Nathalie Bernard-Phalippon, Joelle Dekemp, et al., "Misoprostol Exposure During the First Trimester of Pregnancy: Is the Malformation Risk Varying Depending on the Indication?" European Journal of Obstetrics, Gynecology and Reproductive Biology 207 (2016): 168-192. These studies followed, respectively, 235 and 265 exposed women. An earlier French study indicated that mifepristone alone does not induce birth defects.

45. Approximately half of the French women exposed to misoprostol early in pregnancy who learned that the fetus had structural anomalies decided to continue the pregnancy; the other half elected a termination. Vauzelle et al., "Birth Defects After Exposure to Misoprostol"; Auffret et al., "Misoprostol Exposure During the First Trimester."
46. Gideon Koren and Lavinia Schüler, "Taking Drugs During Pregnancy: How Safe Are the Unsafe?" Canadian Family Physician 47, no. 5 (2001): 951-953.
47. Kelly Blanchard, Beverly Winikoff, and Charlotte Ellertson, "Use of Misoprostol During Pregnancy and Möbius' Syndrome in Infants," N Engl J Med 339, no. 21 (1998): 1553-1554; Helena Lutéscia Coelho, "Misoprostol: a soluçao nao étão simples," Revista de Saúde Pública 32, no. 4 (1998): 394-395; Correa and Mastrella, "Aborto e misoprosto."
48. Stephen Hilgartner and Charles L. Bosk, "The Rise and Fall of Social Problems: A Public Arenas Model," American Journal of Sociology 94, no. 1 (1988): 53-78.
49. Charles L. Bosk, "Bioethics, Raw and Cooked: Extraordinary Conflict and Everyday Practice," Journal of Health and Social Behavior 51, suppl (2010): S133-S146.
50. E.g., Jairo Bouer, "Pilula para aborto causa lesôes em feto quando falha," Folka de Sao Paolo, July 11, 1994; Paulo Cesar Nascimento, "Vendido ilegalmente, medicamento causa malformaçöes congenitas," Journal de Unicamp, August 17, 2003.
51. "Remedio contre ulcera deforma fetos," O Globo, February 4, 1995.
52. R7; Fala Brasil, "Causa de paralisia facial em crianças, Cytotec évendido livremente no Brasil," 2013, http://recordtv.r7.com/fala-brasil/videos/causade-paralisia-facial-em-criancas-cytotec-evendido-livremente-no-brasil-06102018 (accessed December 22, 2019). The film creates confusion between the (probably accurate) statement that the majority of Brazilian children with Moebius syndrome are born to mothers who have attempted to terminate the pregnancy with misoprostol and the (grossly misleading) statement that women who continue the pregnancy after taking the drug have a "big chance" of giving birth to an impaired child.
53. Ludwik Fleck, Genesis and Development of a Scientific Fact. Chicago, IL: Chicago University Press, 1979 (1935).
54. Bosk, "Bioethics, Raw and Cooked," 136.
55. On disparaging attitudes toward lower class women's sexuality and their sexual "irresponsibility" that leads to unwanted pregnancies, see Emilia Sanabria, "From Sub- to Super-Citizenship: Sex Hormones and the Body Politic in Brazil," Ethnos 75, no. 4 (2010): 377-401; de Zordo, "Biomedicalization of Illegal Abortion."
56. Anita Hardon and Emilia Sanabria, "Fluid Drugs: Revisiting the Anthropology of Pharmaceuticals," Annual Review of Anthropology 46 (2017): 117-132.
57. This point is developed by de Zordo, "Biomedicalization of Illegal Abortion"; Sanabria, "From Sub- to Super-Citizenship"; and Heilborn et al., "Itinerarios abortivos."
58. Drug-induced abortion, which is, e.g., strongly recommended by the British Pregnancy Advisory Service for all abortions up to 10 weeks, is a very good choice for some, but not all, women because individual reactions to abortive drugs are variable and cannot be fully predicted. See testimonies on the Web site Women on Web (mostly of women who terminated a pregnancy in countries where abortion is illegal), https://www.womenonweb.org/en/page/488/i-hadan-abortion (accessed December 22, 2019) and the Web site of the Pregnancy Choices Directory (mostly of women from the United Kingdom, where abortion is legal). "Abortion Stories," https://www.pregnancychoicesdirectory.com/ peoplesstories/abortion (accessed December 22, 2019).

DETAILS

Subject:	Abortion; Birth defects; Womens health; Pregnancy; Criminalization; Teratogenicity; Misoprostol; Women; Empowerment; Fetuses; Womens rights; Reproductive rights; Pharmaceutical industry; Drug stores; Professionals; Oppression; States

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First, Prevent Harm: Eliminate Firearm Transfer Liability as a Lethal Means Reduction Strategy

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ABSTRACT (ENGLISH)

The US suicide rate is at its highest since World War II1; suicides are the second leading cause of death among persons aged 10 to 34 years and the 10th leading cause in the United States overall. By 2017, the number of suicide deaths had risen to 47 173 and, when combined with opioid overdoses, produced a three-year decline in US life expectancy for the first time in 50 years.2

In the United States, firearms are used in less than 6% of suicide attempts but are the mechanism of death in more than 50% of completed suicides.3 State suicide rates vary more than threefold, with the majority of the difference accounted for by firearm suicides. Although the preponderance of suicide attempts involve intentional overdoses, firearms have a 55-fold higher lethality rate,4 making it imperative to understand mechanisms for preventing firearm suicide attempts.

The commentary by Gibbons et al. (p. 685), in this issue of AJPH, speaks to the challenges of one key mechanism of firearm suicide reduction, namely the temporary surrender of firearms. Extreme risk protective order legislation has become the de jour mechanism, with 18 states enacting such laws as of February 2020. These laws remove firearms from owners via an involuntary mechanism and necessitate families' engagement with a complicated court system. The use of these laws has been highly variable. In a period of a year and a half, Florida had more than 2000 "red-flag" orders, whereas over a similar period California had less than 200-but each state has roughly 2.5 million firearm-owning households.5,6

FULL TEXT

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An option for suicide prevention is voluntary temporary surrender of firearms. These weapons are typically entrusted to family, friends, gun retailers, or law enforcement. On the surface, this appears to be a simple solution if gun owners are willing to relinquish their firearms. However, as Gibbons et al. point out, profound legal and liability issues must be considered. For example, among the 20 states that require universal background checks (along with the District of Columbia), only 14 provide exemptions during times of crisis such as suicidal ideation. But what happens when the crisis has passed and it is time to return the firearm?

Under current law, it would be extremely difficult to hold any party who accepts a firearm during a suicide crisis-whether family, friends, gun retailers, or law enforcement organizations -liable for negligently transferring the weapon back to the individual who relinquished it. Thus, it is both ironic and unfortunate that gun retailers and law enforcement organizations report fearing potential liability for storing and then returning firearms under federal and state law. Such fears likely stem from popular assumptions that one can sue anyone successfully for anything in America. In fact, the law places the legal responsibility on the person who attempts or commits suicide and thus makes it difficult to hold anyone liable for helping to cause that behavior.

This framework protects family or friends who temporarily hold a firearm and then return it, so long as these individuals act as reasonable stewards who ensure that firearms are appropriately stored and do not return them in the midst of a clear suicide crisis. In addition, it is particularly difficult to sue both gun retailers and law enforcement organizations, the very entities we hope will become community partners in suicide prevention.

Although responsibility is placed upon the individual who makes the suicide attempt, there are a few exceptions to this rule. For example, if someone undertakes a legal duty to watch over another to prevent selfharm and breaches this duty through unreasonable conduct, that caretaker can be held liable. If an act of suicide is the product of an "irresistible impulse" associated with brain trauma from a prior injury (such as a car accident), the person responsible for that injury can be held liable for the suicide as well. Neither of these exceptions nor any others neatly fit with transfer-back liability for family, friends, gun retailers, or law enforcement organizations.

It also matters whom one seeks to sue. Under common law, a gun retailer could face liability for breaching a legal duty to keep a firearm safe and, in theory, for transferring the firearm back to the owner when the owner is manifesting suicidal behaviors. The vast majority of liability for negligence, however, could be eliminated through a release. Moreover, gun retailers enjoy substantial legal protections; Congress and several state legislatures have passed laws immunizing gun retailers from liability related to criminal acts by third parties that use their products. Law enforcement organizations are even more difficult to sue. They enjoy immunity for discretionary acts, such as when the police release potentially dangerous individuals after assessing them and determining that they are not a danger to themselves or others. Law enforcement can, however, be held liable for not following mandatory protocols (e.g., state laws establishing particular transferback time frames for holding a firearm for an individual).

Educating gun retailers and law enforcement organizations about these limitations on liability might correct misconceptions about transfer-back liability. Congress and state legislatures could offer further protections by establishing clear protocols for firearm storage and transfer-back, together with model releases that individuals, retailers, and law enforcement could use to eliminate liability.

Thus, sound policies that provide detailed guidance on transfer-back protocols are the most urgent need to facilitate voluntary surrender. Ideally, such policies should incorporate guidance created by mental health professional associations or developed by legislatively appointed committees that include mental health practitioners, judges, law enforcement representatives, and gun retailers, among others. A release protecting family, friends, gun retailers, and law enforcement organizations that comply with the transfer-back protocol could certainly be part of that statutory scheme and should explicitly disclaim liability for determining whether individuals are a danger to themselves or others. Any such protocol should prioritize ease of compliance. For example, a protocol that requires owners to provide a letter from a mental health professional before retrieving firearms would function as a deterrent to voluntary relinquishment of firearms during a psychiatric crisis.

Another sticking point is how to navigate state laws requiring background checks for temporary transfers between private parties. It is ironic that the state laws most conducive to reducing firearm fatalities are the same state laws

that erect barriers to temporary transfers in moments of suicide crisis. One solution is that universal background check laws should be paired with exclusions around temporary transfers related to suicidality.

To maximize efficacy, comprehensive public education campaigns should describe the details and implications of any legal reforms to both gun owners and potential transfer-back recipients. Existing partnerships, such as that between the American Shooting Sports Foundation and the American Foundation for Suicide Prevention, may heighten the credibility and perceived efficacy of transferback reforms. These efforts could incorporate health care providers offering lethal means counseling, who could refer gun owners to "partner organizations" that have agreed to receive and store firearms for owners in crisis.

Suicide is not inevitable. Beyond the clear value of therapy and emotional support, one ofthe best ways to prevent suicidal individuals from taking their own lives is to provide a mechanism for efficient and protected lethal means reduction. It is far better for our society to proactively enact such protections now than to look back and say "I wish we had done more" after the fact. Á¡P4

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CONTRIBUTORS

Both authors contributed equally to this editorial.

CONFLICTS OF INTEREST

The authors report no conflicts ofinterest.

Sidebar

Correspondenceshould besent to Eric W. Fleegler, MD, MPH, Boston Children'sHospital Division of Emergency Medicine, 300 Longwood Ave, Boston, MA, 02115 (e-mail: eric.fleegler@childrens.harvard.edu). Reprints can be ordered at http://www.ajph.org by clicking the "Reprints" link.

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References

REFERENCES

1. Ducharme J. US suicide rates are the highest they've been since World War II. Available at: https://time.com/5609124/ us-suicide-rate-increase. Accessed March 7, 2020.
2. Centers for Disease Control and Prevention. Death rates and life expectancy at birth. Available at: https://data.cdc.gov/ NCHS/NCHS-Death-rates-and-lifeexpectancy-at-birth/w9j2-ggv5/data. Accessed March 7, 2020.
3. Miller M, Azrael D, Barber C. Suicide mortality in the United States: the importance of attending to method in understanding population-level disparities in the burden of suicide. Annu Rev Public Health. 2012;33:393-408.
4. Spicer RS, Miller TR. Suicide acts in 8 states: incidence and case fatality rates by demographics and method. Am J Public Health. 2000;90(12):1885-1891.
5. Olmeda R. Thousands of guns taken under red flag law, but South Florida lags in applying it. Available at: https://www.sun-sentinel.com/news/crime/flne-red-flag-law-review-20190921ygedayoyybaczmpzrrsy7kssdu-story. html. Accessed March 7, 2020.
6. Gutierrez M. Jerry Brown vetoes California bill to expand gun restraining orders. Available at: https://www.sfchronicle.com/politics/article/JerryBrown-vetoes-California-bill-toexpand-gun-13261282.php. Accessed March 7, 2020.

DETAILS

Subject:	Legislation; Law enforcement; Protocol; Liability; Small arms; Firearm laws &regulations; State laws; Firearms; Drug overdose; Fatalities; Life expectancy; Suicide; Prevention; Public health; Mental health; Suicides &suicide attempts; Reduction; Life span; Households; Death &dying; Opioids; Lethality; Overdose
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Being an Environmental Health Officer

Greenberg, Michael, PhD [1] [1] Edward J. Bloustein School, Rutgers University, New Brunswick, NJ

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ABSTRACT (ENGLISH)

Being an Environmental Health Officer Environmental Public Health: The Practitioner's Guide Paul L. Knechtges, Gregory D. Kearney, and Beth A. Resnick, Eds. Washington, DC: APHA Press; 2018 740 pp; $90 ISBN: 978-0-87553-293-6 eISBN: 978-0-87553-294-3

FULL TEXT

Being an Environmental Health Officer Environmental Public Health: The Practitioner's Guide Paul L. Knechtges, Gregory D. Kearney, and Beth A. Resnick, Eds. Washington, DC: APHA Press; 2018 740 pp; $90 ISBN: 978-0-87553-293-6 eISBN: 978-0-87553-294-3

Working as an environmental health officer (EHO) in one of approximately 2800 US city, county, and tribal nation health departments is challenging. Many of us know EHOs as public health inspectors and sanitarians. Today, "environmental health officer" is a more accurate job title. Having taught some classes for EHOs, I am amazed at how much has been added to their job responsibilities.

EVOLUTION OF THE POSITION

Rather than provide a list of responsibilities, which Knechtges et al. do in their book, I illustrate the challenge with an example. Glen Belnay, a colleague and friend, was the health officerfora rural New Jersey township that became suburban in the 1970s. When he started, one of his standard jobs was inspecting restaurants and engaging in other food-related safety activities. He dealt with septic tanks, communicable disease outbreaks, and pest control. Each is part of traditional health officer practice.

Belnay worked for his community for 45 years, retiring in 2019. His jobs multiplied, which is really the story told by the practitioner guide. Belnay worked closely with the city planner to choose places in the town to locate multifamily housing and retailing to avoid sprawl. He collected data that led to part of a farm becoming a Superfund hazardous waste site. He worked on building a successful argument to remove a large quantity of elemental mercury that had been stored in the town for decades and eventually was shipped to an isolated US government facility in Nevada. As new suburbanites built large single-family homes, Belnay dealt with complaints that odors from nearby farms were interfering with use of new and expensive homes, depressing their resale value. Then there was the issue of new transmission towers that some claimed caused cancer (Remember electromagnetic fields and cancer?). These are only some of the new challenges EHOs now face.

In other places across the United States, health officers work with their colleagues on food security, providing affordable housing, redeveloping brownfield sites and grayfield sites, and helping school districts expand their physical plant. EHOs increasingly work with urban planners (see Greenberg and Schneider1). In essence, the job and tasks follow the issues. I think of EHOs as a local community's family doctor- that is, they have to be prepared to deal with everything from the consequences of automobile traffic to zoonotic disease outbreaks like Salmonella when horses and other animals interact with people. In essence, EHOs identify, evaluate, and try to control environmental risks.

THE PRACTITIONER'S GUIDE

EHOs do not need to be an expert on every issue. But they must understand biology, chemistry, environmental science and technology, food safety, radiation safety, risk analysis, urban planning, and risk communications. They need to be part detective, part law officer to take action, and they need to work with public and private entities to be successful because some of their work angers businesses and property owners when additional costs are incurred. They must acquire multidisciplinary knowledge and apply it in practice. In short, EHOs need carefully crafted synopses of massive literatures. I praise Knechtges, Kearney, and Resnick, as well as 25 other contributors for writing Environmental Public Health: The Practitioner's Guide. When I taught portions of the sanitarian course, each of the instructors assembled a set of readings. In New Jersey, the students received multiple thick loose-leaf books of reading material. One large volume is a much better option as a main text.

Knechtges et al.'s 25-chapter, 740-page book is divided into three sections. The first consists of five chapters that summarize the history of the sanitary movement, and the legal, science, and organizational bases of public health. Part 2 offers chapters about processes widely used by EHOs: surveillance, risk analysis, toxicology, and risk communication. The book's third part highlights 16 programs and services provided by EHOs. These include traditional ones like food safety, pest and vector control, wastewater disposal and septic systems, housing, noise, safe drinking water, air quality, and occupational safety. Other issues have emerged as major challenges in the past 25 years, including environmental justice; climate change; hazardous chemical, biological, and nuclear waste; and public health emergencies. These existed for decades, but now are more prevalent EHO responsibilities.

The 25 chapters vary considerably in depth. The chapters that introduce toxicology, food safety, foodborne illness, safe drinking water, indoor and outdoor air pollution, and noise are detailed. Some chapters offer a list of resources and suggested reading, as well as references in the text. Some of the chapters could have used more depth. For example, the radiation protection chapter would have been more complete had it included the Department of Energy's role with nuclear waste and plutonium disposition, which are issues in some states. Also, EHOs will need to supplement what the book offers about solid and hazardous waste, healthy communities, and the legal framework of public health. I do not mean to be critical because those are well-written chapters. I do mean to point out that a book written by so many authors about such a large literature will present chapters of varying depth. Robert Friis's excellent four-volume set, The Praeger Handbook of Environmental Health,2 epitomizes wide variations in chapters written by dozens of authors.

Overall, I would use Environmental Public Health: The Practitioner's Guide as a basic text for EHOs and supplement it with pieces from government Web sites, as well as private, not-forprofit, and business sources. Overall, Environmental Public Health: The Practitioner's Guide is a valuable contribution that will still be relevant in a decade. While the content of this book represents a major improvement over what has been available in the past, the reality is that many public health professionals expect continuing evolution of the job. Specifically, I think many readers of this journal will be disappointed if by the year 2030 the upstream determinants of health model developed by the Robert Wood Johnson Foundation has not been fully incorporated into public health practice at the local level, which means directly working with urban planners, school systems, the local economic development officer, road department, and many others. Furthermore, we expect the health officer to play a much more central role working with doctors and other medical care practitioners in response to federal mandated requirements related to the Affordable Care Act. In short order, I expect health officers will need to increase the breadth and depth of their knowledge and rely on staff to perform many of the inspections and other traditional functions of the EHO. They will need ongoing continuing education focused on organizational management and technical training focused on those subjects that are most directly relevant to enhancing public health and quality of life in the community. The EHO job should become more complicated and oriented to joint management of public health and public health-related assets. >4JPI-I

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CONFLICTS OF INTEREST

The author reports no conflict of interest.

Sidebar

Correspondence should be sent to Michael Greenberg, Bloustein School, Rutgers, 33 LivingstonAve, New Brunswick, NJ 08901-1958 (e-mail: mrg@ejb.rutgers.edu). Reprints can be ordered at http://www.ajph.org by clicking the "Reprints" link.

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References

REFERENCES

1. Greenberg MR, Schneider D. Urban Planning and Public Health: A Critical Partnership. Washington, DC: APHA Press; 2017.

2. Friis R, ed. The Praeger Handbook of Environmental Health. Santa Barbara, CA: Prager Press; 2012.

DETAILS

Subject:	Food safety; School districts; Housing; Urban planning; Water pollution; Radioactive wastes; Drinking water; Air pollution; Environmental health; Community; Outdoor air quality; Toxicology; Food security; Book reviews; Handbooks; Food; Indoor air pollution; Noise; Brownfields; Noise pollution; Epidemics; Public health; Brownfield sites; Employment; Conflicts of interest; Illnesses; Foodborne diseases; Radiation; Risk assessment
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Black–White Differences in Cardiovascular Disease Mortality: A Prospective US Study, 2003–2017

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ProQuest document link

ABSTRACT (ENGLISH)

Objectives. To determine factors that explain the higher Black:White cardiovascular disease (CVD) mortality rates among US adults. Methods. We analyzed data from the Reasons for Geographic and Racial Differences in Stroke study from 2003 to 2017 to estimate Black:White hazard ratios (HRs) for CVD mortality within subgroups younger than 65 years and aged 65 years or older. Results. Among 29 054 participants, 41.0% who were Black and 54.9% who were women, 1549 CVD deaths occurred. Among participants younger than 65 years, the demographic-adjusted Black:White CVD mortality HR was 2.23 (95% confidence interval [CI] = 1.87, 2.65) and 1.21 (95% CI = 1.00,1.47) after full adjustment. Among participants aged 65 years or older, the demographic-adjusted Black:White

CVD mortality HR was 1.58 (95% CI = 1.39, 1.79) and 1.12 (95% CI = 0.97, 1.29) after full adjustment. When we used mediation analysis, socioeconomic status explained 21.2% (95% CI = 13.6%, 31.4%) and 38.0% (95% CI = 20.9%, 61.7%) of the Black:White CVD mortality risk difference among participants younger than 65 years and aged 65 years or older, respectively. CVD risk factors explained 56.6% (95% CI = 42.0%, 77.2%) and 41.3% (95% CI = 22.9%, 65.3%) of the Black:White CVD mortality difference for participants younger than 65 years and aged 65 years or older, respectively. Conclusions. The higher Black:White CVD mortality risk is primarily explained by racial differences in socioeconomic status and CVD risk factors. (Am J Public Health. 2020;110: 696-703. doi:10.2105/AJPH.2019.305543)

FULL TEXT

Headnote

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Methods. We analyzed data from the Reasons for Geographic and Racial Differences in Stroke study from 2003 to 2017 to estimate Black:White hazard ratios (HRs) for CVD mortality within subgroups younger than 65 years and aged 65 years or older.

Results. Among 29 054 participants, 41.0% who were Black and 54.9% who were women, 1549 CVD deaths occurred. Among participants younger than 65 years, the demographic-adjusted Black:White CVD mortality HR was 2.23 (95% confidence interval [CI] = 1.87, 2.65) and 1.21 (95% CI = 1.00,1.47) after full adjustment. Among participants aged 65 years or older, the demographic-adjusted Black:White CVD mortality HR was 1.58 (95% CI = 1.39, 1.79) and 1.12 (95% CI = 0.97, 1.29) after full adjustment. When we used mediation analysis, socioeconomic status explained 21.2% (95% CI = 13.6%, 31.4%) and 38.0% (95% CI = 20.9%, 61.7%) of the Black:White CVD mortality risk difference among participants younger than 65 years and aged 65 years or older, respectively. CVD risk factors explained 56.6% (95% CI = 42.0%, 77.2%) and 41.3% (95% CI = 22.9%, 65.3%) of the Black:White CVD mortality difference for participants younger than 65 years and aged 65 years or older, respectively.

Conclusions. The higher Black:White CVD mortality risk is primarily explained by racial differences in socioeconomic status and CVD risk factors. (Am J Public Health. 2020;110: 696-703. doi:10.2105/AJPH.2019.305543)

Although cardiovascular disease (CVD) mortality rates have declined over the past several decades in the United States,1,2 studies have consistently demonstrated higher rates of CVD mortality among Black compared with White adults.2-4 Racial differences in factors associated with increased CVD risk exist in several domains including socioeconomic status (SES),5 psychosocial factors,6 CVD risk factors (i.e., systolic blood pressure, total and high-density lipoprotein cholesterol) included in the Pooled Cohort risk equations (used to determine 10-year risk for a CVD event),1 and other clinical risk factors (e.g., body mass index) with a higher prevalence among Blacks compared with Whites.7 These differences may contribute to the disparity in CVD mortality.

Although previous studies have found higher rates of CVD mortality for Black compared with White adults,2 4 they have not identified reasons for this difference. Understanding reasons for these differences is useful because race is a category that is socially and historically constructed, with little of the contribution to differences between Blacks and Whites in health outcomes resulting from genetic factors.8 Identifying modifiable factors contributing to higher Black:White CVD mortality rates has the potential to provide policymakers and clinicians information to prioritize directions for interventions aimed at eliminating this difference.

The Williams model of racial differences in health provides a useful framework to study the unequal Black:White CVD mortality rate.8 This model proposes that certain basic causes such as historical, political, and legal structures in the United States lead to racial differences in SES.8 SES then influences exposure to other nonbiological causes of poor health such as psychosocial factors and access to medical care. This leads to differences in biological processes (e.g., CVD risk factor development) and ultimately differences in health outcomes (e.g., CVD mortality).8 The purpose of this study was to compare CVD mortality rates in Black and White adults, and to determine whether the higher prevalence of low SES, psychosocial factors, and CVD and other clinical risk factors among Blacks

compared with Whites explained the differences. Also, we determined the percentage of the difference in Black:White CVD mortality explained by each of these categories by using mediation analysis. For comparison, we also conducted analyses to determine if a racial difference in nonCVD mortality was present and to identify risk factors that might explain this difference.

METHODS

The Reasons for Geographic and Racial Differences in Stroke (REGARDS) study enrolled a population-based cohort of30 239 community-dwelling, non-Hispanic, Black and White adults aged 45 years or older from across the United States between 2003 and 2007. It was designed to examine reasons for the higher rate of stroke mortality among Blacks compared with Whites and among residents of the Southeastern United States compared with the rest of the contiguous United States.9,10 Residents of the Stroke Buckle (coastal plain region of North Carolina, South Carolina, and Georgia) and the Stroke Belt (remainder of North Carolina, South Carolina, and Georgia, and Alabama, Mississippi, Tennessee, Arkansas, and Louisiana) regions of the United States and Black adults were oversampled. The outcome of coronary heart disease is being investigated in an ancillary study. The final analytic sample included 29 054 participants. Exclusions are listed in Table A (available as a supplement to the online version of this article at http://www.ajph.org).

Baseline Data Collection

Information on medical history and health status were collected at baseline with a computer-assisted telephone survey. This was followed by an in-home examination during which blood pressure, height, and weight were measured; an electrocardiogram was performed; and fasting blood and urine samples were collected following standardized protocols. Race, age, sex, education, income, health insurance status, relationship status, current cigarette smoking, antihypertensive medication use, antihyperglycemic medication use, insulin use, and aspirin use were self-reported.9 The definitions and measurement protocols for history of CVD, depressive symptoms, stress, systolic and diastolic blood pressure, total and highdensity lipoprotein cholesterol and triglycerides, high-sensitivity C-reactive protein, diabetes, body mass index (weight in kilograms divided by the square of height in meters), albumin-to-creatinine ratio, and estimated glomerular filtration rate are presented in Table B (available as a supplement to the online version of this article at http:// www.ajph.org).

Identification and Adjudication of Deaths

Participant deaths were detected through online sources (e.g., the Social Security Death Index), the National Death Index, and by report of deceased study participants' proxies or next of kin during semiannual follow-up calls. Cause of death was adjudicated with information from death certificates, medical records, and autopsy reports. All cases were reviewed independently by 2 clinician-adjudicators, and disagreements were resolved by committee (Table B).11 The main underlying cause of death was defined as the 1 disease or injury that precipitated the events resulting in death. CVD-related mortality included sudden cardiac death, myocardial infarction, heart failure, stroke, other cardiac, not cardiac but other CVD (e.g., ruptured aortic aneurysm), and pulmonary embolism. Non-CVD-related mortality included all other causes of death (i.e., cancer; infection; chronic lung disease; other noncardiac or nonstroke death; unclassified death; dementia; accident, injury, suicide, or homicide; end-stage renal disease; and liver disease). For the current analysis, participants were followed from their baseline examination, 2003 to 2007, to their death or December 31, 2016, for those who did not die.

Statistical Analyses

We conducted all analyses for participants younger than 65 years and aged 65 years or older separately for 3 main reasons: (1) Black adults develop risk factors for CVD mortality at earlier ages compared with White adults,12 (2) previous research reports a decrease in Black:White mortality disparities as age increases,5,13 and (3) focusing on populations younger than 65 years and aged 65 years or older separately allows for different policy implications. We also tested the statistical interaction between race and age group (aged< 65 years and ‡65 years separately) in an overall model and found statistically significant racial differences in CVD and non-CVD mortality by age group (P< .001). We calculated participant characteristics and CVD and non-CVD mortality rates for Blacks and Whites separately. We calculated cumulative incidence curves for CVD and non-CVD mortality separately among adults

younger than 65 years and those aged 65 years or older (Figure A, available as a supplement to the online version of this article at http://www. ajph.org).

Utilizing cause-specific hazards to account for competing risks, we calculated hazard ratios (HRs) for CVD and non-CVD mortality separately, comparing Black and White participants. To include participants with incomplete data (Table C, available as supplement to the online version ofthis article at http://www.ajph.org), we imputed missing covariates with 20 data sets by using chained equations.14 The base model included adjustment for sociodemographic covariates including age, sex, and region of residence. The fully adjusted model included adjustment for SES (education, income, and insurance status), psychosocial factors (relationship status, depressive symptoms, and stress), CVD risk factors used in the Pooled Cohort risk equations (systolic blood pressure, antihypertensive medication use, diabetes, cigarette smoking, total and high-density lipoprotein cholesterol), and additional clinical risk factor biological processes variables of disease severity (high-sensitivity C-reactive protein, albuminuria, body mass index, statin use, insulin use, aspirin use, and history of CVD). We repeated this analysis for the 5 most common causes of death in the current study and stratified by history of CVD. We also conducted a post hoc analysis, testing for evidence of a race-by-age (modeled as a continuous variable) interaction on CVD and non-CVD mortality separately among participants younger than 65 years and those aged 65 years or older.

We conducted mediation analyses for multiple mediators by using the inverse odds ratio weighting methodology.15 We created multiple mediator categories (SES, psychosocial factors, CVD risk factors, and additional clinical risk factors) by using the Williams model of racial differences in health as a guide.8 Briefly, this mediation utilized predicted probabilities of exposure (i.e., race) based on each mediator covariate group and age, sex, and region of residence.15 We estimated the ßcoefficient for the association of race with mortality from a Cox regression model with and without weighting. This allows for the decomposition of total effects of the exposure variable on the outcome into direct and indirect effects. We calculated the weights by the inverse of the odds of exposure.16 We estimated the percent mediation as the percent change between the ßcoefficients with and without weights applied. Confidence intervals (CIs) for these percent changes were nonparametrically estimated from the 2.5th and 97.5th percentiles from the distribution of 2000 bootstrapped samples.15 We conducted analyses with SAS version 9.4 (SAS Institute, Cary, NC).

RESULTS

Black participants were less likely to be male and to live in the Stroke Buckle compared with Whites (Table 1). Compared with White participants, Black participants were more likely to have less than a highschool education, a household income less than $20 000 per year, no health insurance, depressive symptoms, and high stress. Also, Black participants were more likely than were White participants to not be living with a significant other, to smoke cigarettes, to be taking antihypertensive medication, to have diabetes and be taking insulin, and to have a high-sensitivity C-reactive protein greater than 3 milligrams per liter, an albumin-to-creatinine ratio greater than 30 milligrams per gram, and an estimated glomerular filtration rate less than 60 milliliters per minute per 1.73 square meters. Mean systolic blood pressure was higher among Black compared with White participants.

Disease Mortality Rates

There were 1549 CVD and 4108 nonCVD deaths in the current study (Table D, available as a supplement to the online version ofthis article at http://www.ajph.org). Mean follow-up time for CVD mortality among adults younger than 65 years and for nonCVD mortality among adults younger than 65 years and those aged 65 years or older was 8.9 years (maximum 13.9 years). Follow-up time for CVD mortality among adults aged 65 years or older was limited to 6.0 years (maximum 6.9 years) to avoid violating the proportional hazards assumption. Sudden death and myocardial infarction accounted for the majority of CVD deaths while cancer and infection accounted for the majority of non-CVD deaths. Among participants younger than 65 years, the CVD mortality rate was 5.6 (95% CI = 5.0, 6.2) and 2.7 (95% CI = 2.4,3.1) per 1000 person-years among Black and White participants, respectively (Table 2). For participants aged 65 years or older, the CVD mortality rate was 14.2 (95% CI = 12.9, 15.5) and 10.5 (95% CI = 9.7, 11.4) among Black and White participants, respectively. Non-CVD related mortality rates were 9.0 (95% CI = 8.2, 9.8) and 6.4 (95% CI = 5.9, 7.0) per 1000 person-years among Black and White participants younger than 65 years,

respectively, and 25.3 (95% CI = 23.9, 26.8) and 24.9 (95% CI = 23.8, 26.0) among Black and White participants aged 65 years or older, respectively. Table E (available as a supplement to the online version of this article at http://www.ajph.org) presents mortality rates for subtypes of CVD and non-CVD mortality.

Black:White Hazard Ratios for Mortality

Among participants younger than 65 years, the sociodemographic- (age, sex, and region) adjusted Black:White HR for CVD mortality was 2.23 (95% CI = 1.87, 2.65; Table 2). The fully adjusted BlackWhite HR for CVD mortality was 1.21 (95% CI = 1.00,1.47). For participants aged 65 years or older, the sociodemographicand fully adjusted Black: White HRs for CVD mortality were 1.58 (95% CI= 1.39, 1.79) and 1.12 (95% CI = 0.97, 1.29), respectively. For non-CVD mortality, among participants younger than 65 years, the sociodemographic-adjusted and fully adjusted BlackWhite HRs were 1.51 (95% CI = 1.33, 1.71) and 0.90 (95% CI = 0.78, 1.03; Table 2). Among participants aged 65 years or older, the sociodemographic and fully adjusted Black:White HRs for nonCVD mortality were 1.16 (95% CI = 1.08, 1.25) and 0.88 (95% CI = 0.81, 0.96), respectively. Table F (available as a supplement to the online version of this article at http://www.ajph.org) presents results progressively adjusted for sociodemographic factors, SES, psychosocial factors, CVD risk factors, and clinical risk factors. Tables G and H (available as supplements to the online version of this article at http://www.ajph. org) present HRs for the association of individual covariates from the fully adjusted models with CVD mortality and non-CVD mortality, respectively. Table I (available as a supplement to the online version of this article at http://www.ajph.org) presents HRs for CVD and non-CVD mortality stratified by history of CVD.

In posthoc analysis testing for evidence of a race-by-age (modeled as a continuous variable) interaction on CVD and non-CVD mortality separately, the association of Black compared with White race with increased CVD mortality risk was weaker as age increased among those aged 65 years or older (P< .001), but there was no evidence of effect modification for those younger than 65 years (P = .191). For non-CVD mortality, among adults younger than 65 years, the association of Black compared with White race with increased non-CVD mortality risk was weaker as age increased (P< .001), but there was no evidence of effect modification for those aged 65 years or older (P = .197).

For individual causes of CVD mortality, the largest sociodemographic-adjusted Black:White HR among adults younger than 65 years was for stroke (2.83; 95% CI = 1.78, 4.50; and fully adjusted HR of 1.61; 95% CI = 0.97, 2.69), and among adults aged 65 years or older it was for myocardial infarction (1.78; 95% CI = 1.46, 2.18; and fully adjusted HR of 1.26; 95% CI = 1.00, 1.58; Table 3). For non-CVD mortality, in both age groups, the largest sociodemographic-adjusted Black:White HR was for infection among adults younger than 65 years (1.80; 95% CI = 1.33,2.44; and fully adjusted HR of 0.85; 95% CI = 0.61, 1.20) and aged 65 years or older (1.31; 95% CI = 1.11, 1.55; and fully adjusted HR of 0.89; 95% CI = 0.74,1.08). TableJ (available as a supplement to the online version ofthis article at http://www.ajph.org) presents results for individual causes of mortality progressively adjusted for sociodemographic factors, SES, psychosocial factors, CVD risk factors, and clinical risk factors.

Mediation Analysis Comparing Black:White Mortality

Among participants younger than 65 years and those aged 65 years and older, SES explained 21.2% (95% CI= 13.6%, 31.4%) and 38.0% (95% CI = 20.9%, 61.7%), respectively, of the Black:White difference in CVD mortality (Table 4). CVD risk factors explained 56.6% (95% CI = 42.0%, 77.2%) and 41.3% (95% CI = 22.9%, 65.3%) of the difference in CVD mortality for adults younger than 65 years and those aged 65 years or older, respectively. All risk factors combined explained 76.4% (95% CI = 56.5%, 107.5%) and 61.1% (95% CI = 31.5%, 97.8%) of the excess risk for Black:White CVD mortality among participants younger than 65 years and those aged 65 years or older, respectively. For both age groups, the excess risk for non-CVD mortality was completely explained when we assessed all risk factors investigated simultaneously (Table 4).

DISCUSSION

In the current study, CVD mortality rates were higher among Black compared with White adults. The Black:White HR for CVD mortality was larger for participants younger than 65 years compared with participants aged 65 years or older. SES and modifiable CVD risk factors explained a substantial amount of the excess CVD mortality among Black compared with White participants. There was also increased non-CVD mortality risk among Black compared

with White participants.

Previous studies have reported an increased risk of mortality among Blacks compared with Whites for CVD mortality overall in the United States.2-4 The current study adds to these findings by documenting the presence of a Black:White difference in CVD mortality in a contemporary cohort and identifying factors that explain this difference. Similar to previous studies,10,13,17,18 BlackWhite differences were present for the most common subtypes of CVD mortality in the current study: sudden death, myocardial infarction, and stroke. The increased Black:White risk for sudden death was similar to a recent study that used data from the Atherosclerosis Risk in Communities (ARIC) study and may be explained by increased prevalence of CVD risk factors, particularly hypertension.17 However, factors related to SES such as longer ambulance response time, lower likelihood of bystander cardiopulmonary resuscitation, and limited access to highperforming hospitals have also been reported as reasons for the risk difference.17

The Black:White HR for CVD mortality was larger for participants younger than 65 years compared with those aged 65 years or older. Exposure to low SES and the earlier development of CVD risk factors among Black adults may explain this finding.1,12 In the Coronary Artery Risk Development in Young Adults (CARDIA) study, the cumulative incidence of hypertension after 20 years of follow-up among Black women and men was 37.6% and 34.5%, respectively, and among White women and men was 12.3% and 21.4%, respectively.12 The finding that the Black:White relative risk for CVD mortality was smaller at older age is consistent with previous studies.5,13 Providing health insurance, a nonbiological cause of health disparities in the Williams model, among Black adults younger than 65 years may be a valuable strategy to reduce CVD mortality through the pathway of earlier detection and treatment of CVD risk factors.19 Implementation of the Affordable Care Act increased the number ofBlack adults with insurance and access to care in the United States by 7% between 2011 and 2014.20 Although the US government provides Medicare insurance for adults aged 65 years or older in the United States, Black adults in this age group are more than twice as likely to report not being able to see a doctor because of cost.21 The prevalence of low income among Black adults in the current study was more than twice that of White participants. To decrease the Black:White difference in CVD mortality among adults aged 65 years or older, policymakers should consider providing subsidies for Medicare beneficiaries with low income who are not eligible for Medicaid.

Using mediation analysis, we identified CVD risk factors and SES as main contributors to the Black:White difference in CVD mortality risk. These data suggest that preventing the development ofCVD risk factors could substantially reduce the Black:White disparity in CVD mortality. For diabetes prevention, cultural tailoring of the Diabetes Prevention Program, an effective weight loss and exercise intervention that lowers risk of diabetes development among adults with prediabetes, has shown promise, and the Diabetes Prevention Program has been effectively implemented in community-based locations including predominantly Black churches.22 For treatment, antihypertensive medication and statin therapy both reduce CVD risk23,24 and have been shown to be cost-effective.25,26 However, control of blood pressure and use of statin therapy is less common among Black adults compared with White adults.27,28 Systems-level interventions may decrease this disparity in care. For example, the Kaiser Permanente health system in Southern California implemented an integrated health system model for hypertension treatment that resulted in control rates of greater than 80% among Black patients.29 This is in stark contrast with national blood pressure control rates of 64.7% among Black adults taking antihypertensive medication.27

Low SES is associated with an increased risk for development of CVD risk factors and CVD events.1 In the current study, racial differences in SES explained a substantial proportion of the excess CVD mortality risk experienced among Blacks compared with Whites. This finding supports the pathway of the effect of race on health described in the Williams model wherein social systems of inequality contribute to lower SES for Blacks compared with Whites.8 Subsequently, limited resources and exposure to negative health risk factors among individuals with low SES have an effect on biological processes and ultimately health outcomes.8 Policy and intervention strategies such as housing voucher programs may result in improvements in health for individuals with low SES.30 Voucher programs designed to allow relocation from high-poverty to low-poverty neighborhoods have demonstrated long-term impact

on financial and educational attainment.30 Also, CARDIA study participants who moved from high-poverty to lowpoverty neighborhoods and did not move back had a 5-millimeters-of-mercury decrease in systolic blood pressure compared with those who remained in high-poverty neighborhoods.31 Previous studies reported that Black adults who live in integrated neighborhoods have similar prevalence of CVD risk factors to Whites.7 However, housing segregation and discrimination still occurs even for Black adults with financial means. 32

In the current study, risk of non-CVD mortality was also higher for Black compared with White participants. Two factors that explained a large percentage ofthe difference in CVD mortality, CVD risk factors and SES, also explained a large portion ofthe difference in non-CVD mortality. One explanation for this finding could be that the leading cause of non-CVD mortality in the current study, infection, is often a result of hospital admissions because of CVD comorbidities.33 In the National Health and Nutrition Examination Survey Mortality Study, the adjusted relative risk for infection-related mortality was 2.0 and2.8 for adults with versus without diabetes and with versus without heart failure, respectively.33 Higher body mass index is associated with an increased risk of cancer.34 Therefore, it is possible that preventing and treating the development of CVD risk factors could result in reductions in the Black:White difference in non-CVD mortality.

Strengths and Limitations

Strengths of the current study include use of adjudicated cause of death and the enrollment of Black and White adults from across the United States. Information on SES and clinical risk factors were collected via standardized procedures. A large number of mortality events allowed for investigation of CVD and non-CVD causes of mortality separately.

However, several limitations should be considered. Although the REGARDS study identified cause of death through a structured adjudication process, the gold standard for classifying events, it is possible that the cause of some mortality outcomes could have been misclassified. Risk factors were only available at baseline. The assessment of depressive symptoms and stress used in the current study is based on the previous week and month, respectively, before measurement and was only conducted once during baseline. Previous studies have reported stronger associations between psychological factors assessed over longer periods of time, rather than once, and outcomes.35 Therefore, the association of these psychological measures with the racial difference in Black:White mortality outcomes may be underestimated. The REGARDS study contains participants from all 48 continental US states and Washington, DC; however, it is not a nationally representative sample because it only includes Whites and Blacks.

Public Health Implications

Higher CVD mortality rates for Black compared with White adults remain despite an overall decrease in CVD mortality rates over the past several decades in the United States.2 4 In the current study, differences in SES and CVD risk factors explained a substantial proportion of the mortality difference. Additional efforts toward the prevention and treatment of modifiable CVD risk factors including hypertension, dyslipidemia, diabetes, and cigarette smoking among Black adults are needed to reduce the Black:White difference in CVD mortality. Implementing national policies aimed at addressing social determinants of health could also potentially decrease the Black:White difference in CVD mortality risk.

CONTRIBUTORS

G. S. Tajeu led the writing, conceptualized and supervised the study, and assisted with the analyses. M. M. Safford conceptualized the study, interpreted the data and revised the manuscript critically for important intellectual content. G. Howard, V.J. Howard, and R.M. Tanner interpreted the data and revised the manuscript critically for important intellectual content. L. Chen and D. L. Long completed the analyses. P. Muntner conceptualized and supervised the study, and interpreted the data and revised it critically for important intellectual content.

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Note. The content is solely the responsibility of the authors and does not necessarily represent the official views of the NINDS, NIA, NHLBI, NIDDK, or NIH. Representatives of NINDS have been involved in the review of the article but not directly involved in the collection, management, analysis, or interpretation of the data.

CONFLICTS OF INTEREST

M. M. Safford and P. Muntner receive grant support from Amgen Inc.

HUMAN PARTICIPANT PROTECTION

Institutional review board approval was obtained for the REGARDS study, and participants provided written informed consent at baseline.

Sidebar

ABOUT THE AUTHORS

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References

REFERENCES

1.MozaffarianD, BenjaminEJ, GoAS, etal. Heartdisease and stroke statistics-2016 update: a report from the American Heart Association. Circulation. 2016;133(4): e38-e360.

2. Sidney S, Quesenberry CP Jr, Jaffe MG, et al. Recent trends in cardiovascular mortality in the United States and public health goals. JAMA Cardiol. 2016;1(5):594-599.

3. Davey Smith G, NeatonJD, Wentworth D, StamlerR, StamlerJ. Mortality differences between Black andWhite men in the USA: contribution of income and other risk factors among men screened for the MRFIT. MRFIT Research Group. Multiple Risk Factor Intervention Trial. Lancet. 1998;351(9107):934-939.

4. Howard G, Peace F, Howard VJ. The contributions of selected diseases to disparities in death rates and years of life lost for racial/ethnic minorities in the United States, 1999-2010. Prev Chronic Dis. 2014;11:E129.

5. Sautter JM, Thomas PA, Dupre ME, George LK. Socioeconomic status and the Black-White mortality crossover. Am J Public Health. 2012;102(8):1566-1571.

6. Duru OK, Harawa NT, Kermah D, Norris KC. Allostatic load burden and racial disparities in mortality. J Natl Med Assoc. 2012;104(1-2):89-95.

7. LaVeist T, Pollack K, Thorpe R Jr, Fesahazion R, Gaskin D. Place, not race: disparities dissipate in southwest Baltimore when Blacks and Whites live under similar conditions. Health Aff (Millwood). 2011;30(10):1880-1887.

8. Williams DR. Race and health: basic questions, emerging directions. Ann Epidemiol. 1997;7(5):322-333.

9. Howard VJ, Cushman M, Pulley L, et al. The Reasons for Geographic and Racial Differences in Stroke study: objectives and design. Neuroepidemiology. 2005;25(3): 135-143.

10. Safford MM, Brown TM, Muntner PM, et al. Association of race and sex with risk of incident acute coronary heart disease events. JAMA. 2012;308(17): 1768-1774.

11. Halanych JH, Shuaib F, Parmar G, et al. Agreement on cause of death between proxies, death certificates, and clinician adjudicators in the Reasons for Geographic and Racial Differences in Stroke (REGARDS) study. Am J Epidemiol. 2011;173(11):1319-1326.

12. Levine DA, Lewis CE, Williams OD, et al. Geographic and demographic variability in 20-year hypertension incidence: the CARDIA study. Hypertension. 2011;57(1):39-47.
13. Howard G, Moy CS, Howard VJ, et al. Where to focus efforts to reduce the Black-White disparity in stroke mortality: incidence versus case fatality? Stroke. 2016; 47(7):1893-1898.
14. White IR, Royston P, Wood AM. Multiple imputation using chained equations: issues and guidance for practice. Stat Med. 2011;30(4):377-399.
15. Tchetgen Tchetgen EJ. Inverse odds ratio-weighted estimation for causal mediation analysis. Stat Med. 2013; 32(26):4567-4580.
16. Nguyen QC, Osypuk TL, Schmidt NM, Glymour MM, Tchetgen Tchetgen EJ. Practical guidance for conducting mediation analysis with multiple mediators using inverse odds ratio weighting. Am J Epidemiol. 2015; 181(5):349-356.
17. Zhao D, Post WS, Blasco-Colmenares E, et al. Racial differences in sudden cardiac death. Circulation. 2019; 139(14):1688-1697.
18. White AD, Rosamond WD, Chambless LE, et al. Sex and race differences in short-term prognosis after acute coronary heart disease events: the Atherosclerosis Risk in Communities (ARIC) study. Am Heart J. 1999; 138(3 pt 1):540-548.
19. Herman WH, Ye W, Griffin SJ, et al. Early detection and treatment of type 2 diabetes reduce cardiovascular morbidity and mortality: a simulation of the results of the Anglo-Danish-Dutch Study of Intensive Treatment in People With Screen-Detected Diabetes in Primary Care (ADDITION-Europe). Diabetes Care. 2015;38(8): 1449-1455.
20. Chen J, Vargas-Bustamante A, Mortensen K, Ortega AN. Racial and ethnic disparities in health care access and utilization under the Affordable Care Act. Med Care. 2016;54(2):140-146.
21. Cunningham TJ, CroftJB, Liu Y, Lu H, Eke PI, Giles WH. Vital signs: racial disparities in age-specific mortality among Blacks or African Americans-United States, 1999-2015. MMWR Morb Mortal Wkly Rep. 2017; 66(17):444-456.
22. Boltri JM, Davis-Smith M, Okosun IS, Seale JP, Foster B. Translation of the National Institutes of Health Diabetes Prevention Program in African American churches. J Natl Med Assoc. 2011;103(3):194-202.
23. Wright JT Jr, Williamson JD, Whelton PK, et al. A randomized trial of intensive versus standard bloodpressure control. N Engl J Med. 2015;373(22):2103-2116.
24. Yusuf S, Bosch J, Dagenais G, et al. Cholesterol lowering in intermediate-risk persons without cardiovascular disease. N Engl J Med. 2016;374(21):2021-2031.
25. Pandya A, Sy S, Cho S, Weinstein MC, Gaziano TA. Cost-effectiveness of 10-year risk thresholds for initiation of statin therapy for primary prevention of cardiovascular disease. JAMA. 2015;314(2):142-150.
26. Bress AP, Bellows BK, King JB, et al. Cost-effectiveness of intensive versus standard blood-pressure control. N Engl J Med. 2017;377(8):745-755.
27. Yoon SS, Gu Q, Nwankwo T, Wright JD, Hong Y, Burt V. Trends in blood pressure among adults with hypertension: United States, 2003 to 2012. Hypertension. 2015;65(1):54-61.
28. Zweifler RM, McClure LA, Howard VJ, et al. Racial and geographic differences in prevalence, awareness, treatment and control of dyslipidemia: the Reasons for Geographic and Racial Differences in Stroke (REGARDS) study. Neuroepidemiology. 2011;37(1):39-44.
29. Sim JJ, Handler J, Jacobsen SJ, Kanter MH. Systemic implementation strategies to improve hypertension: the Kaiser Permanente Southern California experience. Can J Cardiol. 2014;30(5):544-552.
30. Chetty R, Hendren N, Katz LF. The effects of exposure to better neighborhoods on children: new evidence from the Moving to Opportunity experiment. Am Econ Rev. 2016;106(4):855-902.
31. Kershaw KN, Robinson WR, Gordon-Larsen P, et al. Association of changes in neighborhood-level racial residential segregation with changes in blood pressure among Black adults: the CARDIA Study. JAMA Intern Med. 2017;177(7):996-1002.
32. Pager D, Shepherd H. The sociology of discrimination: racial discrimination in employment, housing, credit, and

consumer markets. Annu Rev Sociol. 2008; 34(1):181-209.
33. Bertoni AG, Saydah S, Brancati FL. Diabetes and the risk of infection-related mortality in the US. Diabetes Care. 2001;24(6):1044-1049.
34. Renehan AG, Tyson M, Egger M, Heller RF, Zwahlen M. Body-mass index and incidence of cancer: a systematic review and meta-analysis of prospective observational studies. Lancet. 2008;371(9612):569-578.
35. Spruill TM, Butler MJ, Thomas SJ, et al. Association between high perceived stress over time and incident hypertension in Black adults: findings from the Jackson Heart Study. J Am Heart Assoc. 2019;8(21):e012139.

DETAILS

Subject:	Socioeconomic status; Socioeconomic factors; Public health; Demographics; Racial differences; Cardiovascular diseases; Risk factors; Mortality rates; Mortality; Risk analysis; Heart diseases; Adults; Confidence intervals; Subgroups; Health risk assessment; Cardiovascular disease; Disease; Socioeconomics; Mediation; Diabetes; Body mass index; Cholesterol; Stroke; African Americans; Blood pressure; Lipoproteins; Age groups; Antihypertensives; Race; Psychological aspects; White people; High density lipoprotein; Mortality risk
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Russian Twitter Accounts and the Partisan Polarization of Vaccine Discourse, 2015–2017

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ABSTRACT (ENGLISH)

Objectives. To understand how Twitter accounts operated by the Russian Internet Research Agency (IRA) discussed vaccines to increase the credibility of their manufactured personas. Methods. We analyzed 2.82 million tweets published by 2689 IRA accounts between 2015 and 2017. Combining unsupervised machine learning and network analysis to identify "thematic personas" (i.e., accounts that consistently share the same topics), we analyzed the ways in which each discussed vaccines. Results. We found differences in volume and valence of vaccine-related tweets among 9 thematic personas. Pro-Trump personas were more likely to express antivaccine sentiment. Anti-Trump personas expressed support for vaccination. Others offered a balanced valence, talked about vaccines neutrally, or did not tweet about vaccines. Conclusions. IRA-operated accounts discussed vaccines in manners consistent with fabricated US identities. Public Health Implications. IRA accounts discussed vaccines online in ways that evoked political identities. This could exacerbate recently emerging partisan gaps relating to vaccine misinformation, as differently valenced messages were targeted at different segments of the US public. These sophisticated targeting efforts, if repeated and increased in reach, could reduce vaccination rates and magnify health disparities.

FULL TEXT

Headnote

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discussed vaccines to increase the credibility of their manufactured personas.
Methods. We analyzed 2.82 million tweets published by 2689 IRA accounts between 2015 and 2017. Combining unsupervised machine learning and network analysis to identify "thematic personas" (i.e., accounts that consistently share the same topics), we analyzed the ways in which each discussed vaccines.
Results. We found differences in volume and valence of vaccine-related tweets among 9 thematic personas. Pro-Trump personas were more likely to express antivaccine sentiment. Anti-Trump personas expressed support for vaccination. Others offered a balanced valence, talked about vaccines neutrally, or did not tweet about vaccines.
Conclusions. IRA-operated accounts discussed vaccines in manners consistent with fabricated US identities.
Public Health Implications. IRA accounts discussed vaccines online in ways that evoked political identities. This could exacerbate recently emerging partisan gaps relating to vaccine misinformation, as differently valenced messages were targeted at different segments of the US public. These sophisticated targeting efforts, if repeated and increased in reach, could reduce vaccination rates and magnify health disparities. (Am J Public Health. 2020;110:718-724. doi:10.2105/AJPH.2019.305564)
In this study, we examined the ways in which the personas underlying Twitter accounts operated by the Russian Internet Research Agency (IRA) discussed vaccines between 2015 and 2017. We build on research demonstrating the IRA's efforts to sow public discord around vaccines,1 as well as preliminary qualitative analysis of their general Twitter activity.2 We demonstrate how anti- and provaccination IRA messages were used strategically to enhance the credibility of manufactured IRA "personas" in ways that could benefit the organization's attempts to intervene in subsequent political discussions including those surrounding the 2016 US presidential election. As a result, such activity can increase the partisan polarization around vaccines.
Using unsupervised machine learning3,4 and network analysis,5,6 we modeled IRA Twitter personas as thematic communities,2 groups of users that share the same thematic characteristics (discuss similar topics) and examined the ways in which their distinctive messaging about vaccination served each persona type, with a focus on pro-Trump and anti-Trump personas. We argue that vaccine-related content carried by specific Twitter personas has the potential to bolster partisan polarization around vaccines, resulting in a spiraling effect on vaccine hesitancy among specific US subpopulations.
Since mid-2014, the Russian government has operated a sophisticated online network of social media accounts to sow discord in the US political system and, before his election, to bolster the presidential candidacy of Donald J. Trump. This activity was conducted by the IRA, a Russian company based in St Petersburg and linked to the Russian government.2 While engaging in political issues that could directly influence the elections,7,8 IRA accounts have also used social media platforms such as Twitter to discuss a wide range of nonpolitical topics,2 from popular culture9 to genetic engineering,10 fracking,11 and, starting in early 2015, the safety and efficacy of vaccines.1 A previous study by Broniatowski et al., which analyzed 889 tweets by IRA accounts that used the hashtag #VaccinateUS, found that IRA accounts posted information both for and against vaccines.1 They suggested that the IRA's aim was to sow discord and deepen disagreements among people in the United States.
A later study by Linvill et al.2 observed that IRA discussions of political and nonpolitical topics were neither homogenous nor random. Using a qualitative analysis of almost 4000 tweets in the month leading to the elections, they identified 4 distinct types of accounts, differing in thematic content. They labeled these "right trolls," "left trolls," "newsfeed," and "hashtag gamers." The majority of activity that they isolated focused on nonpolitical content to camouflage their political intention. In other words, nonpolitical messages were used to bolster the credibility of their allegedly US accounts, by adhering to what Linvill et al.2 dubbed "personas."
Like Linvill et al.,2 we used the term persona not in its conventional usage,12 as a mask or performance aimed at projecting an improved image of the self.13 Instead, we focused on what we call "thematic personas," types of social media accounts that are consistent in their use of specific topics and discourses. These thematic masks are built, in part, by the use of specific language patterns native to and, hence, impersonating, a target group. For example, accounts that attempt to attract likely Trump supporters will be more likely to discuss topics that are (at least stereotypically) associated with his followers (e.g., the Second Amendment) or use terms such as MAGA (Make

America Great Again). Some of these topics are strictly political, in the sense that they relate to policy (e.g., gun control), while others are nonpolitical but nonetheless associated with the culture of political American subpopulations,14 embodied in preferences for food, art, music, sports, hashtags, and, as we demonstrate here, health topics such as vaccines.

While important for our understanding of the IRA's use ofTwitterpersonas, the analysis by Linvill et al.2 of 4 broad IRA personas is limited specifically in its ability to understand the discourse around topics such as vaccines, as the topic played a relatively small role in the general IRA activity (1968 tweets out of roughly 3 million) and therefore is not likely to be included in small samples used for qualitative analysis. Such analysis requires computer-assisted methods able to extract all mentions of vaccines and estimate their use among different personas. In addition, Linvill et al. only examined 1 month of IRA activity, out of more than 3 years online. Lastly, some groups of users might be too small to observe with a limited random sample of tweets used in qualitative analyses (e.g., our analysis identified an African American persona that was absent from previous work).

In this study, we harnessed the full data set of IRA activity over 3 years and used unsupervised machine learning and network analysis to identify 9 distinct thematic personas based on accounts' language tendencies. We demonstrate that each persona discussed vaccines in ways that were congruent with the general purpose of the persona. Simply put, pro-Trump accounts talked about vaccines in ways that are different from anti-Trump ones, and the difference was congruent with recent tendencies of conservatives to oppose, and liberals to support, vaccines.15 This method allowed us to also extend the work of Broniatowski et al.1 by contextualizing the IRA vaccine discourse they identified within the general IRA activity. We demonstrate how IRA accounts discussed vaccines not only to sow discord among people of the United States1 but also to flesh out the personalities of their "American" accounts in a credible way. Based on our findings, we argue that, by selectively catering to people with different political orientations, IRA activity could result in an increase in partisan polarization around vaccines that, in turn, could affect vaccine hesitancy, especially among susceptible subpopulations of conservatives and African Americans.

We addressed 3 research questions. The first extends the work of Linvill et al.6 to the full data set of IRA activity while allowing the automated unsupervised algorithm to identify personas they did not find in their qualitative analysis. The second and third extend the work of Broniatowski et al.1 by connecting the vaccine discourse to the IRA thematic personas:

1. What thematic personas did the IRA employ between 2015 and 2017?
2. Did these personas differ in the extent to which they engaged with the vaccine debate?
3. Did these personas differ in their attitudes regarding vaccines?

METHODS

Our data set included 2 827 928 Englishlanguage tweets from 2689 accounts identified by Twitter as operated by IRA,16 posted between January 1, 2015, and December 31, 2017, on Twitter.

We conducted analysis in 3 stages: (1) topic modeling of the textual data, (2) a novel thematic user network approach developed for this study to chart user thematic communities, and (3) manual coding of vaccine-related tweets for valence (neutral, provaccine, or antivaccine). Additional details regarding the method used such as model fit indicators and hyperparameter tuning can be found in the elaborated methodological report in Appendix A (available as a supplement to the online version of this article at http:// www.ajph.org). For replication and transparency purposes, we provide the R script used for preprocessing, topic modeling, and networking via the researchers' Github page (https://github.com/DrorWalt/ AJPH2020). Data are publicly available at Twitter's election integrity database.16

Topic Modeling

To address research question 1 and identify thematic personas among IRA accounts in an inductive way (i.e., not limited to the personas found by Linvill et al.2), we combined topic modeling and network analysis. Topic modeling is an unsupervised machine learning method for the analysis of textual data.3 Topic models are aimed at extracting a set of topics from which a corpus could be created.17 "Topics" are statistical entities, representing the probability that specific words will tend to belong to the same thematic unit based on the linguistic assumption of co-occurrence

(i.e., words that tend to appear frequently in the same documents share thematic meaning). Every document is composed as a mixture of all topics.18

In this work, we used latent Dirichlet allocation and Gibbs sampling.17 Using 10-fold cross-validation and comparing the perplexity scores of multiple models, we chose to focus on an optimal model of 60 topics (a = 0.01). To interpret and label topics, we examined the words with the highest loading on each topic, the words that are both prevalent and exclusive to each topic (FREX words19), and the full tweets that were most representative of each topic. The top 20 unique words for each topic alongside their assigned labels can be found in Appendix B (available as a supplement to the online version ofthis article at http://www.ajph.org).

Network Analysis

For each IRA account, we calculated the amount of language associated with each topic. This allowed us to calculate the similarity between accounts in terms of discussed topics, using cosine similarity over the topic-user matrix. We used the topical similarity scores between accounts to create a thematic network, where each node represents a single account. Importantly, the network does not describe social connections (e.g., liking, retweeting, following) but rather a thematic similarity relationship, in which accounts that tend to post about similar topics are more strongly connected, and are spatially closer to each other. We used a community detection algorithm (Louvain20) to segment our network to distinct thematic communities. Our algorithm identified 9 communities.

To understand the content posted by accounts employing different personas, 2 independent coders qualitatively content analyzed a sample of 100 tweets representing each community or persona (n = 900 tweets) and labeled them. These tweets can be found in Appendix C (available as a supplement to the online version of this article at http:// www.ajph.org). In addition, the full code we provide can be combined with the publicly available data set provided by Twitter.

Volume and Valence

To address research question 2, for each community, we counted the share of vaccine-related content out of the total community activity. We used the string "vaccin" and identified 1968 tweets from 270 accounts in our whole sample. In addition, we also calculated the share of users that mentioned vaccines at least once, out of the community's total number of users.

Lastly, to address research question 3 and assess the valence of tweets mentioning vaccines in each community, 2 independent coders manually analyzed whether the reference was antivaccine, provaccine, orneutral or irrelevant (KrippendorfFs a = 0.85) for a sample of 50 tweets per each of the 7 communities (n = 350) that mentioned vaccines at least once (as detailed in Results, 2 of the 9 communities never discussed vaccines).

RESULTS

We identified 60 topics and 9 thematic personas. Figure 1 presents the top words for each of the thematic personas. Based on the qualitative open-ended analysis of tweets from each community, we labeled the 9 thematic communities:

1. hard news,
2. anti-Trump,
3. pro-Trump,
4. youth talk and celebrities,
5. African Americans and Black Lives Matter,
6. mixed international topics,
7. Ukraine,
8. soft news, and
9. retweets of various topics and hashtag games.

Figure 2a shows the results of this analysis, with each node representing an IRA account; the edges between nodes representing how often different accounts talked about similar topics; the colors representing membership in a thematic community, as identified by a Louvain algorithm; and the size of nodes representing reach in terms of total retweets of all their communication between 2015 and 2017.

After thematically mapping the different IRA personas (research question 1), we assessed whether accounts in each community ever talked about vaccines and, if so, how often (research question 2). Each node in Figure 2b represents an IRA account; the edges between nodes indicate how often different accounts talked about the same topics; red nodes are accounts that tweeted about vaccines at least once; and black nodes accounts that never did so in the period analyzed. As can be seen in Figure 2, vaccine discourse was limited to specific areas of the graph and was more common (in terms of number of accounts that ever talked about vaccines) in some personas than others.

Lastly, we analyzed a sample of50 vaccinerelated tweets for each community to determine the valence toward vaccines (pro-, anti-, or neutral). The volume and valence per persona can be seen in Table 1. We elaborate more on our findings in the following paragraphs.

The first persona type engaged mostly with links to hard news online updates (e.g., war, terrorism). Only 2% of these accounts ever talked about vaccines, and only 0.04% of all their tweets were about them. When talking about vaccines, these accounts tended to provide links to news articles without expressing their own opinion (60%).

We found a similar user ratio for the second persona, which focused on liberal and antiTrump content. Here the rate of vaccine tweets was slightly higher (about 0.5%). Importantly, tweets seemed to be mostly provaccine (38%) or neutral (52%), reporting on developments in regulation, legislation, and life-saving operations globally or locally. Only 10% were coded antivaccine.

For the third persona, representing proTrump discourse (with accounts having relatively higher reach), many of the accounts using the persona talked about vaccines- 17% of these accounts mentioned vaccines at least once. However, while many accounts under the persona talked about vaccines, vaccines accounted for only 0.04% of their tweets. On average, they expressed mostly antivaccine sentiment (54% of vaccine tweets). Thus, the anti-Trump persona was dedicated to supporting vaccines, while the pro-Trump persona opposed them.

Accounts belonging to the fourth persona immersed themselves in topics often associated with youths, such as celebrities (many of which are Russian-related such as Maria Sharapova or Alexander Nevsky). Tellingly, these alleged young users never talked about vaccines.

The fifth persona imitated African American users, both in topics (e.g., Black Lives Matter activism and African American celebrities such as Talib Kweli) and language (e.g., stereotypical use of the n-word). While less negative toward vaccines then the "proTrump" persona, this persona exhibited a balance between antivaccine messages, directed mostly against corporations and the government (40%), and provaccine ones (36%). Like the pro-Trump persona, many accounts using this persona tweeted about vaccines at least once (11%), but this content accounted for only 0.03% of their total tweets. Another similarity to the pro-Trump persona was the existence ofa relative high number of high-reach users-that is, users with large number of total retweets for their overall communication between 2015 and 2017.

The sixth persona focused on a mixture of international topics, including some conversation about the Russian-Ukrainian conflict and the 2011 Fukushima nuclear disaster. Ten percent of the accounts using this persona tweeted about vaccines at least once, accounting for 0.09% of their tweets. As was the case in the persona imitating the African American community, sentiment toward vaccines was balanced with 42% of tweets coded as antivaccine, 44% as provaccine, and 14% as neutral.

As the figures indicate, the seventh persona exhibited a unique thematic pattern. These accounts focused almost exclusively on Ukraine, highlighting the alleged injustice of the US stance on the conflict between Russia and Ukraine, the immorality of its people (e.g., Ukraine aiding Nazi brigades), and the failures of the Ukrainian government. This persona did not tweet about vaccines at all.

The eighth persona focused on soft news updates (e.g., health, sports, and local topics). Twenty-two percent of these accounts mentioned vaccines at least once, and roughly 1 out of every 1000 tweets created by this persona type was about vaccines. However, their vaccine tweets tended to be neutral (78%), with only 16% pro- and 6% antivaccine.

Finally, accounts using the ninth persona did not focus on 1 specific topic, instead focusing their activity on

retweeting others and on engagement with trendy hashtag games (viral online prompts encouraging users to create content around a specific premise or topic-for example, prompts promoted by the popular Comedy Central show @midnight). Their vaccine-related content (13% of users but only 2 in every 10 000 tweets) was more pro- (46%), than anti- (32%) vaccine, and extensively used the #VaccinateUS hashtag, a finding consistent with that of Broniatowski et al.1

DISCUSSION

Using the full data set of more than 3 million tweets published by IRA accounts on Twitter between 2015 and 2017, we show that the vaccine discourse that was first identified by Broniatowski et al.1 was part of a larger effort to solidify and bolster identifiable thematic personas, probably for a later political use including during the 2016 presidential elections. Our automated analysis identified 9 personas, compared with the 4 found in qualitative research.2 We were able to identify the additional personas because we were working with a higher resolution and larger sample.

Vaccines as Part of Personas' Discourse

Our method identified 9 thematic personas, operationalized through the consistent preference of specific topics and language. This linguistic behavior, we believe, was an attempt to project coherent and reliable personas that do not focus exclusively on the elections and politics (thus avoiding being tagged as suspicious by their Twitter followers). None of the personas dedicated itself exclusively to vaccines, nor to health topics in general. Two were focused on soft and hard news, 2 focused on supporting or opposing presidential candidate Trump, 1 mimicked African Americans with a focus on Black Lives Matter activism, and 2 were mixed in topics, focusing on retweets and the language and interest of younger users. Two personas focused on international issues, 1 focusing solely on the conflict between Russia and Ukraine, and 1 focusing on a larger number of international issues including the Russian- Ukrainian conflict and the 2011 Fukushima nuclear disaster.

Importantly, in line with our argument that different accounts disguised themselves as different personas with different opinions and interests, some personas tweeted about vaccines, while others did not. Among those who did, we identified persona-tied differences in intensity and centrality ofthe vaccine issue, as well as differences in the valence of opinions about vaccines. This finding contextualizes previous findings offered by Broniatowski et al.1 Of particular importance for public health, the pro-Trump personas tended to oppose vaccines, while the anti-Trump ones did not. For example, an account associated with the pro-Trump persona, the supposed conservative Christian @ameliebaldwin, wrote on November 12, 2016, that "Holistic doctors found #autism-causing carcinogens in #vaccines before being murdered." On the contrary, the allegedly African American user @imissobama wrote on January 13, 2017, that "The anti-vax movement can only exist bc few living Americans can recall what polio actually did to ppl. I fear the same is true of fascism."

The personas focused on sharing soft and hard news reports tweeted about vaccines relatively often, but their tweets did not take a position on the issue. Rather, they tended to merely retweet news stories on vaccines, just as they did for other non-vaccine-related issues. Finally, personas focusing on youth issues and Ukraine did not post any tweets about vaccines. Thus, different accounts, aimed at different subpopulations of the US public, shared dramatically different information regarding vaccines.

While beyond the scope of this study, attention should be directed in the future to the dynamics of persona use over time. Our data indicate that a higher level of vaccine-related IRA tweets appeared around the vote on a California bill on mandatory school vaccinations (SB277). Future studies are needed to better understand the strategic use of vaccines and other health topics over time, with a focus on whether it changes around events tied to citizen voting.

In summary, our findings indicate that, in addition to sowing discord, vaccine-related IRA Twitter activity functioned to fashion believable personas. Such behavior could have detrimental effects on public health if targeted to vulnerable vaccine-hesitant communities.

Public Health Implications

Regardless of the motivation behind the Russians' involvement with vaccine discourse online, this behavior could threaten US public health, especially when targeted at specific users. Historically, the antivaccine movement and the

individuals supporting it were not associated with one political party or the other.16 However, like other topics, political polarization can affect attitudes toward vaccination as well. It is worrisome that recent polls and surveys indicated that individuals who identify as conservative have begun shifting against vaccination.16

The partisan polarization of public health issues is cause for concern. Attitudes toward and intentions to follow public health recommendations should be formed as the result of a consideration of risks and benefits, based on scientific, nonpartisan inquiry. The increase in partisan polarization could result in an increase in the number of conservatives who make their judgment of vaccines' safety and necessity not based on the science but based on their political disposition and their perception ofhow the topic aligns with their support for a political leader. Such a phenomenon could be further fueled by misinformation that distorts credible scientific evidence,21 especially in social media and online sources where antivaccination messages are more common than in mainstream media. This, in turn, could increase vaccination hesitancy.

Even if small in magnitude, the intentional Russian spread of antivaccine discourse targeted at specific subpopulations that are susceptible to it (e.g., pro-Trump users and African Americans on Twitter) could be the beginning of a new front in the ongoing informational cyberwar. >4jPI-l

CONTRIBUTORS

AH authors were responsible for the design, analysis, and write-up ofthe study, as well as subsequent revisions. The method for identification of thematic communities was developed by D. Walter and Y. Ophir. The code for the analysis was written by D. Walter.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest.

HUMAN PARTICIPANT PROTECTION

All data are publicly available and released officially by Twitter. Usernames are masked. Therefore, human participant protection was not required.

Sidebar

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References

REFERENCES

1. Broniatowski DA, Jamison AM, Qi S, et al. Weaponized health communication: Twitter bots and Russian trolls amplify the vaccine debate. Am J Public Health. 2018;108(10):1378-1384.

2. Linvill DL, Boatwright BC, Grant WJ, Warren PL. "The Russians are hacking my brain!" Investigating Russia's Internet Research Agency Twitter tactics during the 2016 United States presidential campaign. Comput Human Behav. 2019;99:292-300.

3. Blei DM. Probabilistic topic models. Commun ACM. 2012;55(4):77-84.

4. Maier D, Waldherr A, Miltner P, et al. Applying LDA topic modeling in communication research: toward a valid and reliable methodology. Commun Methods Meas. 2018;12(2-3):93-118.

5. Rubinov M, Sporns O. Complex network measures of brain connectivity: uses and interpretations. Neuroimage. 2010;52(3):1059-1069.

6. Walter D, Ophir Y. News frame analysis: an inductive mixed-method computational approach. Commun Methods Meas. 2019;13(4):248-266.

7. Benkler Y, Faris R, Roberts H. Network Propaganda: Manipulation, Disinformation, and Radicalization in

American Politics. New York, NY: Oxford University Press; 2018.
8. Jamieson KH. Cyberwar: How Russian Hackers and Trolls Helped Elect a President-What We Don't, Can't, and Do Know. New York, NY: Oxford University Press; 2018.
9. Bay M. Weaponizing the haters: the Last Jedi and the strategic politicization ofpop culture through social media manipulation. First Monday. 2018;23(11).
10. Dorius SF, Lawrence-Dill CJ. Sowing the seeds of skepticism: Russian state news and anti-GMO sentiment. GM Crops Food. 2018;9(2):53-58.
11. Gordon G. Russian trolls' post-election task: disrupt Florida and other US energy pipelines. McClatchy DC. May 1, 2018. Available at: https://www.mcclatchydc. com/news/nation-world/national/article210152439. html. Accessed December 18, 2019.
12. Goffman E. The Presentation of Self in Everyday Life: Selections. Garden City, NY: Doubleday Anchor; 1959.
13. Bullingham L, Vasconcelos AC. "The presentation of self in the online world": Goffman and the study of online identities. JInfSci. 2013;39(1):101-112.
14. Young DG. Irony and Outrage: The Polarized Landscape of Rage, Fear, and Laughter in the United States. New York, NY: Oxford University Press; 2019.
15. BaumgaertnerB, Carlisle JE, Justwan F. The influence ofpolitical ideology and trust on willingness to vaccinate. PLoS One. 2018;13(1):e0191728.
16. Twitter. Elections integrity. Data archive. Available at: https://about.twitter.com/en_us/values/electionsintegrity.html#data. Accessed November 9, 2018.
17. Blei DM, Ng AY, Jordan MI. Latent Dirichlet allocation. J Mach Learn Res. 2003;3:993-1022.
18. GrimmerJ, Stewart BM. Text as data: the promise and pitfalls ofautomatic content analysis methods for political texts. Polit Anal. 2013;21(3):267-297.
19. Roberts ME, Stewart BM, Tingley D, et al. Structural topic models for open-ended survey responses. Am J Pol Sci. 2014;58(4):1064-1082.
20. Blondel VD, Guillaume J-L, Lambiotte R, Lefebvre E. Fast unfolding of communities in large networks. J Stat Mech. 2008;2008(10):P10008.
21. Lewandowsky S, Ecker UKH, Seifert CM, Schwarz N, Cook J. Misinformation and its correction: continued influence and successful debiasing. Psychol Sci Public Interest. 2012;13(3):106-131.

DETAILS

Subject:	Research; Vaccines; Partisanship; Public health; Norms; Datasets; Credibility; Internet; Network analysis; Machine learning; Firearm laws &regulations; Immunization; Learning algorithms; Polarization; Methods; Elections; Data mining; Social networks; Health disparities
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Disparities in Distribution of Particulate Matter Emissions from US Coal-Fired Power Plants by Race and Poverty Status After Accounting for Reductions in Operations Between 2015 and 2017

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ABSTRACT (ENGLISH)

Objectives. To investigate potential changes in burdens from coal-fired electricitygenerating units (EGUcfs) that emit fine particulate matter (PM2.5,defined as matter with a nominal mean aerodynamic diameter of< 2.5 mm) among racial/ethnic and economic groups after reduction of operations in 92 US EGUcfs. Methods. PM2.5 burdens calculated for EGUs listed in the 2008, 201 1, and 2014 National Emissions Inventory were recalculated for 2017 after omitting emissions from 92 EGUcfs. The combined influence of race/ethnicity and poverty on burden estimates was characterized. Results. Omission of 92 EGUcfs decreased PM2.5 burdens attributable to EGUs by 8.6% for the entire population and to varying degrees for every population subgroup. Although the burden decreased across all subgroups, the decline was not equitable. After omission of the 92 EGUcfs, burdens were highest for the below-poverty and non-White subgroups. Proportional disparities between White and non-White subgroups increased. In our combined analysis, the burden was highest for the non-White-high-poverty subgroup. Conclusions. Our results indicate that subgroups living in poverty experience the greatest absolute burdens from EGUcfs. Changes as a result of EGUcf closures suggest a shift in burden from White to non-White subgroups. Policymakers could use burden analyses to jointly promote equity and reduce emissions. (Am J Public Health. 2020;110: 655-661. doi:10.2105/AJPH.2019.305558)

FULL TEXT

Headnote

Objectives. To investigate potential changes in burdens from coal-fired electricitygenerating units (EGUcfs) that emit fine particulate matter (PM2.5,defined as matter with a nominal mean aerodynamic diameter of< 2.5 mm) among racial/ethnic and economic groups after reduction of operations in 92 US EGUcfs.

Methods. PM2.5 burdens calculated for EGUs listed in the 2008, 201 1, and 2014 National Emissions Inventory were recalculated for 2017 after omitting emissions from 92 EGUcfs. The combined influence of race/ethnicity and poverty on burden estimates was characterized.

Results. Omission of 92 EGUcfs decreased PM2.5 burdens attributable to EGUs by 8.6% for the entire population and to varying degrees for every population subgroup. Although the burden decreased across all subgroups, the decline was not equitable. After omission of the 92 EGUcfs, burdens were highest for the below-poverty and non-White subgroups. Proportional disparities between White and non-White subgroups increased. In our combined analysis, the burden was highest for the non-White-high-poverty subgroup.

Conclusions. Our results indicate that subgroups living in poverty experience the greatest absolute burdens from EGUcfs. Changes as a result of EGUcf closures suggest a shift in burden from White to non-White subgroups. Policymakers could use burden analyses to jointly promote equity and reduce emissions. (Am J Public Health. 2020;110: 655-661. doi:10.2105/AJPH.2019.305558)

(ProQuest: ... denotes formulae omited.)

Marginalized communities may be at increased risk for exposure to and health effects of particulate matter with a nominal mean aerodynamic diameter of less than or equal to 2.5 micrometers (PM2.5) emitted by industrial facilities. Communities of color and communities affected by poverty are more likely to live near significant sources of air pollution (e.g., industrial facilities)1 or in locations with elevated ambient concentrations2,3 than are communities made up mostly of non-Hispanic people of White race (hereafter White). Recently, Mikati et al.4 found that the burden from all PM2.5-emitting facilities in close proximity to an individual's census block group centroid was 89% higher among non-Hispanic people of Black race (hereafter Black) than among White people. Similarly, the burden among those below the poverty line was 47% higher than among those above the poverty line. The public health ramifications of PM2.5 exposure have been demonstrated in several large-scale epidemiological studies reporting relationships between both short- and long-term PM2.5 exposures and mortality.5-11 Moreover, several studies

have shown highermagnitude health effect associations for Black and Hispanic populations than for White populations12 15 and, in some cases, for populations below the poverty line.14,15

Although air pollution reduction strategies are designed to provide broad public health benefits, these benefits are not always distributed equitably. Gelobter16 examined reductions in total suspended particulate concentrations that were attributable to the National Ambient Air Quality Standards and stratified results from 1970 to 1984 by race and income. He found that the largest reductions consistently occurred among the highest income group and those who were White. However, this analysis was limited to urban areas as a means of controlling for confounding between race and urbanicity. More recently, Nguyen and Marshall17 observed that reductions in diesel particulate matter sources designed to decrease disparities in exposures across the population did not decrease inequities in all locations, where inequity of exposures was defined to mean the average exposure among subgroups (e.g., race/ethnicity orpoverty/nonpoverty) would not be the same.

Coal-fired power plant emissions represent direct PM2.5 sources that present risks to surrounding communities in terms of both exposure to and potential health effects from PM2.5.18 Henneman et al.19 combined National Emissions Inventory (NEI) data for PM2.5 from coal-fired electricitygenerating units (EGUcfs) with the Hybrid Single Particle Lagrangian Integrated Trajectory dispersion model and the Community Multiscale Air Quality Model to predict population-weighted PM2.5 exposures. PM2.5 exposures were predicted to be highest in the Ohio Valley region, and the largest decreases between 2005 and 2012 in PM2.5 exposures overall and exposures due to coal-fired power plants were also found to occur in that region.19 In 2014, roughly 13 000 deaths were reported to be attributable to PM2.5 emitted by EGUcfs.18 Monetary costs of deaths in the United States attributable to PM2.5 from coal-fired power plants range from $30 000 to $150 000 per ton of PM2.5 emitted.20 22

The costs and benefits of electricity generated by EGUcf s have been shown to be inequitably distributed. Tessum et al.18 calculated an inequity index to compare source-specific PM2.5 exposure with PM2.5 attributed to consumption patterns among Black, Hispanic, and White subgroups in the United States. Their results indicated inequities among the Black subgroup, which was exposed to 43% more PM2.5 from EGUcf s than produced via electricity consumption. The Hispanic and White subgroups, respectively, were exposed to 12% and 9% less PM2.5 from EGUcf s than produced via electricity consumption.

Since 2014, 92 US EGUcf facilities have retired operations of at least 1 unit.23-25 The objective of this follow-up to Mikati et al.4 was to investigate how the burden from PM2.5emitting EGUcfs has potentially changed among racial/ethnic and poverty/nonpoverty subgroups after EGUcf closures. We calculated burdens as a result of fossil fuel combustion according to race/ethnicity and poverty status for 2008, 2011, and 2014 and estimated the burden for 2017 by omitting coal-fired power plants with retired operations from our analyses. We compared the 2017 burden with the burdens calculated by randomly classifying coal-fired power plants as closed to assess whether actual closures may have been selected in a nonrandom fashion. Finally, we examined trends in burdens due to fossil fuel combustion according to the combined influence of race/ethnicity and poverty status.

METHODS

The concept of "burden" regarding emissions combines residential proximity to emitting facilities with the magnitude of emissions. This analysis extended the work of Mikati et al.4 by calculating the burden of PM2.5 emitted from EGUcfs on race/ ethnicity and poverty/nonpoverty subgroups and then investigating how the burden has changed as a result of facilities retiring some or all of their operations. The NEI does not report unit-specific emissions within a facility, so it was not possible to omit from our analyses only those emissions attributable to a single unit's closure within a larger facility. Therefore, we assumed that the entire facility was retired, knowing that burdens may have been underestimated at locations where only one unit was retired. Nationwide burdens were recomputed after removal of retired facilities and compared with burdens calculated for 2014 prior to facility closures.

Data Sources

We accessed self-reported 2012 to 2016 population data from the American Community Survey (ACS) at the census block group level.26 Designated ACS race/ethnicity subgroups included White and non-White, which included all other races/ethnicities, Hispanic persons, and Black persons. Similarly, designated income subgroups included

those at or below the poverty line and those above the poverty line. These subgroups were compared with the total population.

The NEI database contains data for point, nonpoint, on-road, nonroad, and event sources submitted to the US Environmental Protection Agency by local, state, and tribal governments.27 We selected stationary anthropogenic point source data for primary PM2.5 emissions (tons per year) from each fossil-fuel EGU reported to the NEI in 2008, 2011, and 2014 using the North American Industry Classification System code for all fossil fuels; a separate code specific to EGUcfs was not available. Ninety-two EGUcfs with retired coal-fired operations during 2015, 2016, and 2017 were identified in 32 states across the nation by using data from the US Energy Information Administration.23 25 Within these 92 facilities, 191 units were permanently shut down.

NEI PM2.5 emissions data for each source in 2008, 2011, and 2014 were merged with demographic data from the 2012 to 2016 version of the ACS at the census block group level into a single data set as follows.26 The location of each facility within the NEI was given by latitude and longitude.27 A facility was then assigned to block groups via the "centroid containment" assignment method described by Mikati et al.4 and originally presented by Boyce and Pastor,28 in which a facility is assigned to any block groups for which its centroid falls within 2.5 miles. Mikati et al.4 performed sensitivity testing of the radius used for these calculations and determined little difference when radii between 0.5 and 5.0 miles were tested. The population counts for each subgroup were assigned to each facility when a block group was mapped to a facility.

Data Analysis

Burdens were calculated for each census block group and then aggregated to the national scale following the procedure detailed in Mikati et al.4 Absolute burden (AB in Equation 1) was defined as the populationweighted average emissions in a block group:

(1) ...

Absolute burden can be calculated for the entire population or for a specific subgroup (e.g., Black or above the poverty line). Proportional burden (PB in Equation 2) was defined as the ratio ofabsolute burden among one subgroup to absolute burden among the total population:

(2) ...

A proportional burden greater than 1.0 signified that the subgroup had a higher absolute burden than the total population. A score of 1.0 in every subgroup would indicate an equitable distribution of emissions.

Initially, 2008, 2011, and 2014 NEI data were used to calculate PM2.5 absolute and proportional burdens attributable to EGUcf s for each subgroup. Next, to obtain the 2017 burden due to PM2.5 emissions from EGUcf s, we omitted EGUcf s that retired operations between 2015 and 201723 25 from units listed in the 2014 NEI when computing burdens as a result of PM2.5 emissions. We estimated 2017 absolute and proportional burdens by omitting PM2.5 emissions associated with the 92 facilities where at least 1 unit had ceased operations from our analysis of 2014 NEI data.

We conducted a sensitivity analysis in which we compared burdens computed after omitting the EGUcfs that were retired with burdens computed after removing EGUcf s at random for each subgroup. Large differences between the burdens computed from actual facility closures and from random closures would indicate inequitable burdens across the population. We conducted a Monte Carlo analysis to assess whether burdens calculated after omission of retired EGUcfs differed from burdens calculated after omission of 92 facilities at random from the 1881 NEI fossil fuel combustion facilities. The simulations were repeated 1000 times. Absolute and proportional burden means and 95% confidence intervals (CIs) from Monte Carlo analyses were plotted alongside those from the full 2014 NEI and reduced EGUcf analyses.

We explored the combined influence of race/ethnicity and poverty status by computing burdens for each subgroup before and after the EGUcf s were retired and comparing the results for each subgroup with those for the total population. It was not possible to identify the numbers of ACS participants fitting into different permutations of race/ethnicity-poverty groupings at the block group level.26 For this reason, we developed the following joint subgroupings:

* Non-White-poverty stratum: block groups that are nationally in the top quartile with respect to both non-White population and individuals living below the poverty line
* Non-White-nonpoverty stratum: block groups that are nationally in the top quartile with respect to both non-White population and individuals living above the poverty line
* White-poverty stratum: block groups that are nationally in the top quartile with respect to both White population and individuals living below the poverty line
* White-nonpoverty stratum: block groups that are nationally in the top quartile with respect to both White population and individuals living above the poverty line Absolute burdens were computed for each of the block groups fitting the previously mentioned criteria, and these burdens were compared with those calculated from the ACS population.26 We used R version 3.1.2 (R Foundation for Statistical Computing, Vienna, Austria) in managing data and conducting our analyses.

RESULTS

Among the 92 facilities with retired units, most were located in the Midwest, including a high concentration of facilities around the Ohio River and the Great Lakes (Figure 1). Eighteen percent of retired facilities were located in block groups in which the proportion ofnon-White individuals was greater than in the US population overall. In comparison, 38% of the US population is nonWhite according to the 2012 to 2016 ACS.26 Fifty-one percent of retired facilities were located in block groups in which the proportion of individuals living below the poverty line was greater than in the US population, whereas 15% of the US population lives below the poverty line according to the 2012 to 2016 ACS results.

Omission of the 92 retired EGUcfs decreased the block group-level absolute burden attributable to EGUcfs in the total population by 8.6%, from 4.09 tons per year to 3.74 tons per year (Table A, available as a supplement to the online version of this article at http://www.ajph.org). The absolute burden also fell for every subgroup after omission of these facilities. The largest decrease in absolute burden occurred in the White subgroup (an 11% reduction, to 3.66 tons per year). A smaller reduction was observed for the non-White subgroup (5.0%, to 3.87 tons per year). Within the non-White subgroup, smaller reductions were observed for the Hispanic (4.4%, to 3.49 tons per year) and Black (6.6%, to 3.59 tons peryear) subgroups. However, the 2014 absolute burdens for these subgroups were lower than those for the White subgroup. Absolute burdens decreased for the above- and below-poverty subgroups by 8.5% (to 3.67 tons per year) and 8.8% (to 4.15 tons per year), respectively. Consequently, the proportional burden decreased slightly, by 2.4%, among the White subgroup (to 0.98) while increasing among the non-White (3.9%, to 1.03), Hispanic (4.5%, to 0.93), and Black (2.2%, to 0.96) subgroups (Table B, available as a supplement to the online version of this article at http://www.ajph.org). Changes in proportional burdens were less than 1% for both the above-poverty (to 0.98) and below-poverty (to 1.11) subgroups.

Absolute and proportional burdens were compared through Monte Carlo simulations of random facility closures (Figure 2). After omission of the 92 retired EGUcfs (among 1880 total facilities), the absolute burden for the overall population was below the average absolute burden predicted from the Monte Carlo simulations. The absolute burdens for the White and Black subgroups and for both income subgroups also fell below the average absolute burden from the simulations. Monte Carlo subgroup-level changes in absolute burden often led to greater disparities in proportional burdens among subgroups. Proportional burdens were above the upper 95% CI in the Monte Carlo analysis for the non-White subgroup, close to the upper 95% CI for the Hispanic subgroup, and below the lower 95% CI for the White subgroup. Results among poverty subgroups showed fewer differences from the Monte Carlo simulations.

Stratified analyses revealed patterns in how EGUcf closures would influence burdens among populations living close to the facilities (Figure 3 and Table C, available as a supplement to the online version of this article at http://www.ajph.org). Absolute burdens were 2.69 tons per year for block groups in the White-nonpoverty stratum and 3.88 tons per year for block groups in the White-poverty stratum. For these strata, retirement ofEGUcfs resulted in an 18% to 33% reduction in absolute burden from 2014 to 2017 and a 70% to 72% reduction from 2008 to 2017. The absolute burden was 3.12 tons per year for block groups in the nonWhite-nonpoverty stratum. Notably, the

absolute burden was lower for both the Black- nonpoverty and Hispanic-nonpoverty strata than for the non-White-nonpoverty stratum. For block groups in the non-White-poverty stratum, the absolute burden was 4.03 tons per year after closure of the EGUcfs. These closures resulted in a 1.4% to 4.2% reduction in the absolute burden from 2014 to 2017 and a 52% to 74% reduction from 2008 to 2017 for non-White subgroups. The absolute burden was nearly identical for the non-White- poverty and Hispanic-poverty strata, especially during 2011 to 2017. However, for the Black-poverty stratum, the burden decreased from 13.40 tons per year in 2008 to 4.84 tons per year in 2017, a 64% reduction. From 2014 to 2017, closures resulted in a 6% reduction in the absolute burden.

DISCUSSION

The overall reduction in the absolute PM2.5 burden attributable to fossil fuel emissions for the entire US population (Figure 2) suggests that reduced EGUcf operations benefit every segment of the population by reducing premature mortality attributable to PM2.5.5 11 Still, changes in absolute burdens for each subgroup suggest that reductions have been greater among those living above the poverty line and among White individuals, although the reductions observed were not significantly different from the cases in which facilities were retired at random (Figure 1). In the nationwide analysis, the difference in absolute burden was largest for the below- and above-poverty subgroups, and that difference did not change between 2014 and 2017. Disparities between proportional burdens in below- and abovepoverty subgroups were unchanged, with a 13% higher proportional burden for the below-poverty subgroup in both 2014 and 2017. Mikati et al.4 and Mohai et al.1 also observed higher burdens for all PM2.5 sources among those below the poverty line compared with those above the poverty line.

Without regard to poverty status, the White subgroup was estimated to have benefited more from reduced EGUcf operations than the non-White subgroup, with the absolute burden well below the central estimate for the Monte Carlo analysis. This finding is consistent with the results of other studies examining the role of race and ethnicity in disproportionate exposure to environmental hazards.1,2,4,29 However, absolute burdens for the Black and Hispanic subgroups attributable to fossil fuel combustion were lower than the absolute burden for the White subgroup in 2014 and continued to be lower after retirement ofEGUcf s. Part ofthe reason for the difference between the non-White subgroup and the Black and Hispanic subgroups may be that the non-White category also encompassed Asian, American Indian/ Alaska Native, Native Hawaiian and Other Pacific Islander, and other racial groups (in total, these subgroups accounted for 22% of the non-White subgroup). The other races subgroup could have included individuals of 2 or more races as well as nonrespondents, adding uncertainty to the absolute burden estimates for the Black and Hispanic subgroups. It was surprising that the Black subgroup did not account for a larger share of the absolute burden given that this subgroup was found by Tessum et al.18 to have the largest exposure to PM2.5 from EGUcfs emissions.

Relative to the absolute burden calculations, a comparison of the 2017 proportional burden estimates with the Monte Carlo analysis suggests that the closures might not have been random but instead were influenced by communities' racial makeup, with the non-White subgroup potentially bearing an increased PM2.5 burden. The 2017 proportional burden was found to fall below the 95% CI of the Monte Carlo analysis for the White subgroup. At the same time, the proportional burden increased beyond the 95% CI of the Monte Carlo analysis for the non-White subgroup and almost increased beyond the 95% CI for the Hispanic subgroup. The proportional burden increased slightly for the Black subgroup but not beyond the Monte Carlo 95% CI. The proportional burden for 2014 emissions data was less than 1% lower for the non-White subgroup than for the White subgroup. Conversely, the burden was nearly 6% higher for the non-White subgroup after omission of EGUcf s with reduced operations. Such increases in proportional burden suggest that the burden ofEGUcf-related PM2.5 emissions may be shifting toward non-White subgroups. As differences between proportional burdens in the White subgroup and each non-White subgroup increased with reductions in EGUcf operations, inequities in burdens appeared to grow.

The stratified analyses shed further light on changes in absolute burdens based jointly on race/ethnicity and poverty status. Unsurprisingly, burdens were greater in the poverty strata than the nonpoverty strata regardless of race, although disparities in PM2.5 absolute burdens both within and between the poverty strata and the nonpoverty strata diminished over the 9-year period. The higher absolute burden for the Black-poverty stratum than for the White-

poverty, non-White-poverty, and Hispanic-poverty strata indicates that the Black-poverty stratum assumed a greater share of the burden after the 92 EGUcfs were removed from the analysis. This was not evident in the Monte Carlo simulations, because the data were not broken down by both race/ ethnicity and poverty status. Differences among the non-White-poverty, Hispanic- poverty, and White-poverty strata's absolute burdens were small in 2017 and therefore should not be overinterpreted in the absence of data from future years.

Our findings suggest that place-based characteristics such as demographic community makeup are important determinants of burden. The White subgroup had a higher absolute burden than did the Black subgroup within the non-White-nonpoverty stratum and a higher absolute burden than did the Hispanic subgroup within the non-White-poverty stratum. Likewise, the Black subgroup had the lowest absolute burden ofany subgroup within the Black-poverty stratum, although that stratum had the highest absolute burden among the race/ethnicity- poverty strata investigated. Mikati et al.4 investigated absolute burdens from all US PM2.5 emissions for different rural-urban commuting area classifications and found similar levels of absolute burden among most race/ethnicity and poverty subgroupings within these classifications but dissimilarities among the classifications themselves. These findings support the conclusion that those living in non-White or impoverished communities are at higher risk, regardless of individual characteristics.

Limitations and Strengths

A limitation of this study is that when EGUcfs appeared in Energy Information Administration reports, we assumed that their operations were fully retired. It is likely that some facilities continued operations at a reduced level. If so, the reductions in absolute burden described here would have been overestimated, and the 2017 absolute burden values would have been underestimated. The true absolute burden values estimated for 2017 on the basis of EGUcf retirements would be somewhere between the burdens computed with the 2014 NEI data and the values presented for 2017. In addition, the NEI data were coded according to the North American Industry Classification System, which groups all fossil fuels together (i.e., coal, petroleum coke, petroleum liquids, natural gas). Therefore, comparisons of absolute burden from 2008, 2011, and 2014 may have been inflated, and the percentage reductions in absolute burden may have been underestimated relative to an analysis drawing only from EGUcfs. However, given that EGUcfs and petroleum-fueled EGUs have been largely supplanted by cleaner-burning and cheaper natural gas generators, the error in absolute burden would be anticipated as small.30 A strength of our study is its insight into the interaction ofrace/ethnicity and poverty with absolute burden, particularly in the context of US utilities replacing coal with natural gas.30

Public Health Implications

Our results suggest that state and local policymakers responsible for implementation of air quality management under the Clean Air Act should consider place-based characteristics in a wider strategy to effect decisions that jointly promote equity and reduce PM2.5 emissions. For example, the Government Code of the State of California was amended in 2016 to require that local planners identify policies seeking to improve environmental quality in communities that have experienced disproportionate impacts of environmental pollution.31 Local planners in California can comply with this code in part by using our burden analysis technique as a basis for recommending which EGUcfs should be prioritized for emissions reductions to determine scenarios that reduce inequities in the burden due to EGUcf -related PM2.5 emissions before policies are implemented. More generally, policymakers can stratify emissions burdens by the socioeconomic and demographic characteristics of geographically defined communities to allow comparisons of different scenarios. This type ofdetailed analysis can then provide a data-driven foundation32 for local policymakers to hold discussions that engage affected community members and environmental justice organizations to make equitable decisions with regard to air pollution sources. ÂfPU

CONTRIBUTORS

J. Richmond-Bryant originated the study, contributed to the statistical analysis, and drafted the article. I. Mikati originated the study, contributed to the statistical analysis, and edited the article. A. F. Benson performed the geographic information systems analysis and produced the map. T. J. Luben and J. D. Sacks provided consultation throughout the study and edited the article.

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References
REFERENCES
1. Mohai P, Lantz PM, MorenoffJ, House JS, Mero RP. Racial and socioeconomic disparities in residential proximity to polluting industrial facilities: evidence from the Americans' Changing Lives Study. AmJ Public Health. 2009;99(suppl 3):S649-S656.
2. Clark LP, Millet DB, Marshall JD. Changes in transportation-related air pollution exposures by raceethnicity and socioeconomic status: outdoor nitrogen dioxide in the United States in 2000 and 2010. Environ Health Perspect. 2017;125(9):097012.
3. Paolella DA, Tessum CW, Adams PJ, et al. Effect ofmodel spatial resolution on estimates of fine particulate matter exposure and exposure disparities in the United States. Environ Sci Technoi Lett. 2018;5(7):436-441.
4. Mikati I, Benson AF, Luben TJ, Sacks JD, RichmondBryant J. Disparities in distribution ofparticulate matter emission sources by race and poverty status. Am J Public Health. 2018;108(4):480-485.
5. Dockery DW, Pope CA III, Xu X, et al. An association between air pollution and mortality in six US cities. N Engl J Med. 1993;329(24):1753-1759.
6. Laden F, Neas LM, Dockery DW, Schwartz J. Association of fine particulate matter from different sources with daily mortality in six US cities. Environ Health Perspect. 2000;108(10):941-947.
7. Pope CA III, Burnett RT, Thurston GD, et al. Cardiovascular mortality and long-term exposure to particulate air pollution: epidemiological evidence of general pathophysiological pathways of disease. Circulation. 2004;109(1):71-77.
8. Krewski D, Burnett R, Jerrett M, et al. Mortality and long-term exposure to ambient air pollution: ongoing analyses based on the American Cancer Society cohort. J Toxicol Environ Health A. 2005;68(13-14):1093-1109.
9. Laden F, Schwartz J, Speizer FE, Dockery DW. Reduction in fine particulate air pollution and mortality: extended follow-up of the Harvard Six Cities study. Am J Respir Crit Care Med. 2006;173(6):667-672.
10. Lepeule J, Laden F, Dockery D, Schwartz J. Chronic exposure to fine particles and mortality: an extended follow-up of the Harvard Six Cities study from 1974 to 2009. Environ Health Perspect. 2012;120(7):965-970.
11. Di Q, Wang Y, Zanobetti A, et al. Air pollution and mortality in the Medicare population. N Engl J Med.

2017;376(26):2513-2522.
12. Nachman KE, Parker JD. Exposures to fine particulate air pollution and respiratory outcomes in adults using two national datasets: a cross-sectional study. Environ Health. 2012;11:25.
13. Basu R, Woodruff TJ, ParkerJD, Saulnier L, SchoendorfKC. Comparing exposure metrics in the relationship between PM2.5 and birth weight in California. J Expo Anal Environ Epidemiol. 2004;14(5):391-396.
14. Bravo MA, Anthopolos R, Bell ML, Miranda ML. Racial isolation and exposure to airborne particulate matter and ozone in understudied US populations: environmental justice applications ofdownscaled numerical model output. Environ Int. 2016;92-93:247-255.
15. Bell ML, Ebisu K. Environmental inequality in exposures to airborne particulate matter components in the United States. Environ Health Perspect. 2012;120(12):1699-1704.
16. Gelobter M. Toward a model of environmental discrimination. In: Bryant B, Mohai P, eds. Race and the Incidence of Environmental Hazards: A Time for Discourse. New York, NY: Westview Press; 1992:64-81.
17. Nguyen NP, Marshall JD. Impact, efficiency, inequality, and injustice ofurban air pollution: variability by emission location. Environ Res Lett. 2018;13(2):024002.
18. Tessum CW, ApteJS, Goodkind AL, et al. Inequity in consumption of goods and services adds to racial-ethnic disparities in air pollution exposure. Proc Natl Acad Sci USA. 2019;116(13):6001-6006.
19. Henneman LRF, Choirat C, Ivey C, Cummiskey K, Zigler CM. Characterizing population exposure to coal emissions sources in the United States using the HyADS model. Atmos Environ. 2019;203:271-280.
20. Goodkind AL, Tessum CW, Coggins JS, Hill JD, Marshall JD. Fine-scale damage estimates of particulate matter air pollution reveal opportunities for location-specific mitigation of emissions. Proc Natl Acad Sci USA. 2019; 116(18):8775-8780.
21. Fann N, Baker KR, Fulcher CM. Characterizing the PM2.5-related health benefits of emission reductions for 17 industrial, area and mobile emission sectors across the US. Environ Int. 2012;49:141-151.
22. Levy J, Baxter L, Schwartz J. Uncertainty and variability in health-related damages from coal-fired power plants in the United States. Risk Anal. 2009;29(7):1000-1014.
23. US Energy Information Administration. Electric power monthly with data for December 2017. Available at: https://www.eia.gov/electricity/monthly/archive/ february2018.pdf. Accessed February 5, 2020.
24. US Energy Information Administration. Electric power monthly with data for December 2016. Available at: https://www.eia.gov/electricity/monthly/archive/ february2017.pdf. Accessed February 5, 2020.
25. US Energy Information Administration. Electric power monthly with data for December 2015. Available at: https://www.eia.gov/electricity/monthly/archive/ february2016.pdf. Accessed February 5, 2020.
26. US Census Bureau. American Community Survey summary file data: 2012-2016 ACS 5-year estimates. Available at: https://www.census.gov/acs/www/data/data-tablesand-tools/data-profiles/2016. Accessed February 5, 2020.
27. US Environmental Protection Agency. 2014 National Emissions Inventory (NEI) data. Available at: https://www.epa.gov/air-emissions-inventories/2014-national-emissionsinventory-nei-data. Accessed February 5, 2020.
28. Boyce JK, Pastor M. Clearing the air: incorporating air quality and environmental justice into climate policy. Clim Change. 2013;120(4):801-814.
29. Mohai P, Saha R. Which came first, people or pollution? Assessing the disparate siting and post-siting demographic change hypotheses ofenvironmental injustice. Environ Res Lett. 2015;10(11):115008.
30. US Energy Information Administration. Fuel competition in power generation and elasticities of substitution. Available at: https://www.eia.gov/analysis/studies/ fuelelasticities. Accessed February 5, 2020.
31. State of California. California Government Code, Title 7, Division 1, Chapter 3, Article 5: authority for and scope of general plans. Available at: https://leginfo. legislature.ca.gov/faces/codes_displayText.xhtml?lawCode= GOV&division=1.&title=7.&part=&chapter=3.&article=5. Accessed February 5, 2020.
32. Minkler M. Linking science and policy through community-based participatory research to study and address health disparities. Am J Public Health. 2010; 100(suppl 1):S81-S87.

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The Occupational Safety and Health Administration's Impact on Employers: What Worked and Where to Go From Here

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ABSTRACT (ENGLISH)

When the OSH Act of 1970 was passed, Congress created the Occupational Safety and Health Administration (OSHA) to ensure safe and healthful working conditions for employees. OSHA did so by setting and enforcing standards and by providing training, outreach, and education.
Early standard setting was aggressive and ambitious, with the incorporation of industry consensus standards and the promulgation of new standards. OSHA's standard setting and enforcement sparked increased membership in safety and health professional organizations, which in turn led to strong demand for obtaining safety or health certification. Additionally, this growth drove the development of a wide variety of safety and health products, in effect creating a new market. Vendors used OSHA standards and enforcement to motivate sales.

FULL TEXT

When the OSH Act of 1970 was passed, Congress created the Occupational Safety and Health Administration (OSHA) to ensure safe and healthful working conditions for employees. OSHA did so by setting and enforcing standards and by providing training, outreach, and education.
Early standard setting was aggressive and ambitious, with the incorporation of industry consensus standards and the promulgation of new standards. OSHA's standard setting and enforcement sparked increased membership in safety and health professional organizations, which in turn led to strong demand for obtaining safety or health certification. Additionally, this growth drove the development of a wide variety of safety and health products, in effect creating a new market. Vendors used OSHA standards and enforcement to motivate sales.
In the early days ofOSHA, as now, employer compliance with OSHA standards was daunting, particularly for startups trying to get established. Unfortunately, OSHA focused on enforcement and failed to offer much in the way of compliance assistance. Employers typically complied with OSHA regulations out of fear of an OSHA citation and penalty. The survival of any company is based on profitability, and most employers did not appreciate or understand the value an effective safety and health program adds to their business. They believed that complying with regulations was costly and unnecessary; many employers could not imagine a catastrophic incident ever occurring in "my" workplace.
Through the 1980s, standards rolled out of OSHA at a fast clip. Standards addressing recordkeeping, personal protective equipment, fall protection, hearing conservation, respiratory protection, hazard communication, confined spaces, lockout-tagout, chemical exposures, and process safety management received national media attention and raised industry awareness. These large and highly visible standards kept businesses scrambling to comply well into

the 1990s. Companies had to invest to upgrade their operations and control hazards to make the workplace safer. Employers complained about the cost and feasibility of compliance with OSHA. However, in most cases, compliance with the rules improved their productivity. For example, the standard for vinyl chloride (a liver carcinogen) was widely opposed when issued in the 1970s. Employers argued that to comply, they would have to upgrade many of their operations and the cost would drive them out of business. In reality, these employers complied quickly and increased both their productivity and profitability. It should be noted that OSHA enforcement activities also help to "level the playing field." For years, employers have complained that employers (particularly in the construction industry) that do not fully comply with OSHA standards receive an unfair competitive advantage. Some frustrated employers have even taken the drastic step of reporting their competitors' unsafe conditions to OSHA.

EVOLVING EMPLOYER ATTITUDES

Employer recognition of the value of occupational safety and health has come a long way since 1970. OSHA deserves some credit for this transition. Currently, when OSHA announces the development of a new rule, it's not uncommon for employers to begin major compliance efforts long before the standard is finalized. Consequently, when the new standard actually goes into effect, many employers are already in compliance.

However, in the past 20 years, OSHA's position in workplace health and safety has diminished. When the OSHA assistant secretary spoke at the annual National Safety Congress in the 1970s through the 1990s, the hall was standing room only. Employers-uncertain about compliance requirements, in the dark about OSHA's next moves regarding new standards, and worried about enforcement policies-wanted to hear directly from the head ofOSHA. In 2019, the head of OSHA did not even attend the congress, and current OSHA activities were relegated to small technical sessions.

OSHA's diminishing influence is owing in part to its standard-setting process. Most would agree that this process is broken. There are so many steps involved in setting a standard that it takes four to six years to get from proposal to a final standard. For example, most current permissible exposure limits are based on data from the 1960s or earlier. In the case of the recently issued walking and working surfaces standard, it took OSHA more than 20 years to promulgate and issue a final standard. Fixing the standard-setting process would require amending the OSH Act, which is not doable in the near future.

GETTING BACK ON TRACK

Looking to the future, there are several actions OSHA can take to revitalize its efforts and reassert its relevancy. OSHA's top focus going forward should be to issue a safety and health management system or program standard. During its first 50 years, the agency never had the political or public support to set programmatic requirements for a basic occupational safety and health program standard that would include management leadership, employee involvement, training, hazard recognition and assessment, and hazard prevention and control and mitigation. Some occupational safety and health authorities have speculated that this should have been the first standard OSHA ever issued. Such a standard would have a dramatic impact on overall health and safety.

A safety and health program standard would mirror the importance and beneficial effect of OSHA's hazard communication standard. In my opinion, the hazard communication rule is one of the agency's most significant standards. For years, employers understood the importance of "right to know" but were challenged when trying to comply with widely varying state requirements, including chemical labels and placarding. The OSHA hazard communication standard was a win both for employee protection and chemical hazard training and for employers in their compliance struggles. This federal standard actually simplified employer responsibilities by establishing uniform requirements in all states. A safety and health program standard would achieve a similar result for employers in standardizing the elements of an effective workplace safety and health program.

Considering that most OSHA standards are out of date, the agency also should focus on updating existing standards to reflect new data and insights gained in the intervening years since their issuance. It is equally important for the agency to move forward in developing regulations in new and emerging areas of concern, including workplace violence, nanotechnology, temporary and contract workers, and workplace stress and fatigue.

OSHA also must regain its safety and health leadership role, and OSHA staff need to reclaim their role as safety and

health experts. On the enforcement side, OSHA cannot continue to rely on the model it adopted 50 years ago. Times have changed, industry has changed, and new hazards have surfaced. OSHA coverage has moved beyond the manufacturing, construction, and maritime industries. Better integration of enforcement and cooperative programs is needed. These two areas are critical to OSHA's balanced approach, and they need to work together to advance health and safety.

I would suggest revisiting the Maine 200 Program concept from the 1990s, which offered OSHA assistance to employers with a history of accidents and injuries. The program was "voluntary," in that these employers could work cooperatively with OSHA or they wouldbe inspected. OSHA tried to implement this program on a national level but was sued and lost. With some adjustments, this approach could serve as the basis to transition away from the old enforcement model. It would also allow OSHA's free consultation service to work directly with OSHA enforcement-something that has not been done before.

Lastly, OSHA has two recognition programs for excellence in safety and health: the Voluntary Protection Program and the Safety and Health Achievement Recognition Program. These programs should be combined. >4jPI-l

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CONFLICTS OF INTEREST

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Sidebar

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A Short History of Occupational Safety and Health in the United States

Rosner, David, PhD; Markowitz, Gerald, PhD

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ABSTRACT (ENGLISH)

As this short history of occupational safety and health before and after establishment of the Occupational Safety and Health Administration (OSHA) clearly demonstrates, labor has always recognized perils in the workplace, and as a result, workers' safety and health have played an essential part of the battles for shorter hours, higher wages, and better working conditions. OSHA's history is an intimate part of a long struggle over the rights of working people to a

safe and healthy workplace. In the early decades, strikes over working conditions multiplied. The New Deal profoundly increased the role of the federal government in the field of occupational safety and health. In the 1960s, unions helped mobilize hundreds of thousands of workers and their unions to push for federal legislation that ultimately resulted in the passage of the Mine Safety and Health Act of 1969 and the Occupational Safety and Health Act of 1970. From the 1970s onward, industry developed a variety of tactics to undercut OSHA. Industry argued over what constituted good science, shifted the debate from health to economic costs, and challenged all statements considered damaging. (Am J Public Health. 2020;1 10:622-628. doi:10.2105/AJPH.2020.305581)

FULL TEXT

Headnote

As this short history of occupational safety and health before and after establishment of the Occupational Safety and Health Administration (OSHA) clearly demonstrates, labor has always recognized perils in the workplace, and as a result, workers' safety and health have played an essential part of the battles for shorter hours, higher wages, and better working conditions. OSHA's history is an intimate part of a long struggle over the rights of working people to a safe and healthy workplace. In the early decades, strikes over working conditions multiplied. The New Deal profoundly increased the role of the federal government in the field of occupational safety and health. In the 1960s, unions helped mobilize hundreds of thousands of workers and their unions to push for federal legislation that ultimately resulted in the passage of the Mine Safety and Health Act of 1969 and the Occupational Safety and Health Act of 1970. From the 1970s onward, industry developed a variety of tactics to undercut OSHA. Industry argued over what constituted good science, shifted the debate from health to economic costs, and challenged all statements considered damaging. (Am J Public Health. 2020;1 10:622-628. doi:10.2105/AJPH.2020.305581)

"It may seem strange that any men should dare to ask a just God's assistance in wringing their bread from the sweat of other men's faces."

-Abraham Lincoln, Second Inaugural Address, 1865

Abraham Lincoln's Second Inaugural Address, delivered 41 days before his assassination, is rightfully remembered for its powerful statement on the moral underpinnings of the American Civil War: slavery was a system of exploitation in which owners wrenched "their bread from the sweat of other men's faces." Lincoln contended that the war was God's retribution for "all the wealth piled by the bondsman's two hundred and fifty years of unrequited toil" and might righteously continue "until every drop of blood drawn with the lash shall be paid by another drawn with the sword."1

The physical exploitation of the powerless by the powerful, slavery itself, was literally engrained in the Constitution as a tenet of American political, economic, and legal culture. But the law was also instrumental in maintaining the power relationships of the landowner over the sharecropper, the manager over the employee, the husband over the wife, the White over the Black. In the workplace specifically, the courts often enshrined the terms "master" and "servant" to encompass a host of formal and informal relationships between worker and owner.2

This brief review of the history of occupational safety and health on the occasion of the Occupational Safety and Health Administration's (OSHA's) 50th anniversary explores the ongoing struggle by labor and its allies to address workplace inequalities that have resulted in injuries and disease among workers over time. This is not a comprehensive history of the various social movements, professional developments, governmental actions, or individual actors that have contributed to what is a centuries-old and ongoing effort to provide security and well-being to workers and their families. Nor does it fully explore the uneven roles that unions and public health have played in promoting safety and health. Rather, we explore here the cross-class coalitions of labor activists, lawyers, government bureaucrats, journalists, medical clinicians, social workers, some unions, and others from various social strata that at different moments in history sought to improve the lives of working people, their families, and communities.

The post-Civil War era saw America transformed from a largely rural, agricultural society to an urban society in which an industrial workforce was employed in the growing number of factories, mills, and mines. In the postwar

period, legal historian Robert Steinfeld writes, the abolition of slavery "gave way to another form of legal regula- tion that offered workers greater formal autonomy but continued indirectly to place them at the disposal of those who owned productive assets."3 The evolution of a labor system in which workers and owners bargained for wages in exchange for labor superficially papered over the ongoing inequalities that were intrinsic to the new industrial economy.4

With industrialization came mechanization, speedups, massive factories, and other changes that increased the dangers that workers faced on the job. Dangerous machinery, and the introduction of new chemicals and scientific management techniques, sapped the health and strength of industrial workers.5 In the wake of such conditions, unions began to fight for safer working conditions, better pay, the 10hour and then the 8-hour day, and shorter work weeks. In May 1886, tens of thousands of workers marched in the first May Day Parade in Chicago. Subsequently, hundreds of thousands of workers throughout the country went on strike for shorter hours with no reduction in pay.6 Immigrant workers organized fraternal societies that provided "contract doctors" in case of sickness and burial benefits for breadwinners who died young because of injuries on the job.7 Labor, along with journalists, social reformers, socialists, and others, advocated for better working conditions- what today we capture under the umbrellas of "occupational safety and health" and, more generally, "public health."8

Responding to increased labor activism that arose to protest against unsafe and unhealthy working conditions, some state legislatures passed regulations that challenged the ideology-propounded by ruling elites and the courts-that individual workers were truly "free" to negotiate the terms of their employment. In the 1880s and 1890s, there were a series of strikes in the bakeries of New York City against horrible working conditions that often lasted 18 hours a day in hot, unventilated basements. In response, in 1895 the NewYork State legislature passed a law limiting bakery workers to no more than 10 hours per day or 60 hours a week.9 The legislation was successful in large part because the plight of workers was tied to fears that these conditions were a breeding ground for infectious diseases, particularly tuberculosis, that would be transmitted through the bread consumers ate. The role of women in this movement through the Consumers League-and especially its leader, Florence Kelley-was critical, linking together work, family, and community. In 1901, a bakery owner, John Lochner, in upstate Oneida, New York, was found in violation of this law; he appealed his conviction, and the case eventually was heard by the US Supreme Court.10 The case, Lochner v New York (1905) was decided in a 5 to 4 decision, with the Court determining that the law was unconstitutional because it interfered with the "right" of owners and workers to "purchase and sell labor."11 The court held that the "free" laborer was "guaranteed" the "right" to work 18 hour days, and the state could not prevent them from doing so. For industrial workers and their advocates, this "contract" was akin to what many called "wage slavery," and injuries on the job came to symbolize the huge costs of this new production system.12 (We will be using the term "injury" rather than "accident" throughout as many of the events that occurred in the rising industrial plants were anticipated, even expected. The exceptions, of course, are in the quotations of contemporaries like Upton Sinclair and Crystal Eastman.)

WORKING CONDITIONS IN THE EARLY 20TH CENTURY

The enormous costs of industrialism in the decades around the turn of the 20th century reached into every aspect of American life as "muckraking" journalists detailed the extraordinary injury rates in mining, steel manufacturing, and meat packing, and the growing number of diseases that accompanied the development of new industries and industrial processes. Upton Sinclair's The Jungle is generally remembered for its role in the development of consumer protection of the food supply and the passage of the 1906 Pure Food and Drug Act. But, in fact, the novel tells the story of how Jurgis Rudkus, a vibrant, strong Lithuanian immigrant worker, was destroyed in body and soul by the production process and capitalism itself. As Sinclair himself later wrote: "I aimed at the public's heart, and by accident I hit it in the stomach."13 The Pittsburgh Survey, a classic investigation of working-class life in Pittsburgh, Pennsylvania, appeared in 1907. Included in the survey was Work-Accidents and the Law by Crystal Eastman-feminist journalist, lawyer, and cofounder of the American Civil Liberties Union-which detailed the impact of industrial injuries on working-class families and communities in this center of the steel and coal industries.14

Shortly thereafter, a massive strike of largely young immigrant Jewish and Italian women in the garment industry in

New York City brought the wretched conditions of the sweatshops of this industry to the attention of millions of people across the country. A year later, a fire in the Triangle Shirtwaist Factory in lower Manhattan galvanized the nation as thousands of onlookers-along with reporters, photographers, and graphic artists- watched women, faced with the prospect of being burned alive, jump to their deaths from the ninth floor of the factory. Reformers were spurred to action by these striking images and reports.15 The response, however, fell very short of the overall demands and only addressed the horrendous working conditions in a few of the industrial states. In the short run the impacts were limited, but the attention to the human costs of industrial capitalism were brought to a national audience. Alice Hamilton, Eleanor Roosevelt, Frances Perkins, and other women reformers emerged from the turmoil of the early 1900s dedicated to addressing the terrible conditions of work and life for the industrial workforce-both female and male, child and adult. 16

Questions arose that led to ongoing debates throughout the middle decades of the new century. When was a worker truly free, and when was he or she being coerced through threats of violence, deprivation, or lost wages? When was the worker's assumption of the dangers of the job-danger from injury, from poisoning and disease-a reasonable outcome of the free negotiations between a worker and his employer? And when was it an outcome of the coercive power that employers had in their "negotiation" with workers? The question of occupational safety and health was part and parcel of a larger movement to reform American society and improve public health.

This movement produced legislative results. Many states passed legislation to improve factory inspection systems and prodded local labor and health departments to pay attention to occupational safety and health. States passed the first significant labor legislation designed to protect women and children as particularly vulnerable, "weaker" populations. Some in the women's and labor movements objected that protective legislation excluded women from certain jobs rather than improving the workplace for the benefit of all workers, male and female. Others in those movements believed that these legislative efforts were inadequate and discriminatory but would provide the basis for more general reforms later.17 In various localities, specific acts were passed regulating working conditions in tanneries, bakeries, foundries, and other industries. Also, for the first time, there was a serious attempt to organize a more reliable method for collecting statistics on occupational injuries and deaths.18 In 1900, no state in the country had a workers' compensation law on the books, but by 1915, most highly industrialized states had passed an act for some form of workers' compensation.19 As important as this set of state laws was, historians have critiqued these laws as efforts by employers to protect themselves against large lawsuits.20 Workers' compensation legislation also made filing for compensation extremely difficult for laborers.21

On the federal level, Congress established the Department of Labor in 1913, which included active women's and children's bureaus devoted to protecting their lives and health. In addition, in 1912 the Public Health Service (PHS) was assigned responsibility for addressing occupation-related diseases. The advent ofWorld War I made occupational safety and health a national priority as business, political, and labor leaders emphasized the need to protect the workforce, especially in the war-related industries. The concern with the unknown effects of new toxic chemicals such as TNT and picric acid shifted some of the focus of the PHS, with its established laboratory and technical expertise, from infectious disease to the dangers of the new industrial workplace.22

RADICALS AND CONSERVATIVES IN THE INTERWAR YEARS

During the more conservative 1920s, the broad view of the relationship between work and health narrowed. Many corporations, large and small, joined the National Safety Council, first formed in 1912, which focused on the prevention of what the organization called accidents through its "safety first" educational campaigns.23 In addition, during the 1920s some companies attempted to hide the impact of industrial exposures and dangers from the workforce through their employment of occupational physicians. During this time, physicians interested in occupational safety and health had few options other than to work directly for corporations. Therefore, they were often placed in the position of serving their employers by identifying workers who were ill or poisoned on the job so that companies could lay them off before they filed workers' compensation claims.24

But there were countervailing tendencies as well, such as the Workers' Health Bureau of America. It was organized by Grace Burnham, Charlotte Todes, and Harriet Silverman- leftist women who sought to use both technical

expertise and union activism to address workplace hazards. Providing the former were Emory Hayhurst of the Ohio Department of Health,Yale University's C. EA. Winslow, and Harvard's first female professor, Alice Hamilton. Among the unions that worked with the bureau were the International Union of Painters and Allied Trades, the United Hatters of North America, and the International Ladies' Garment Workers' Union. In 1927, the Workers' Health Bureau organized the First National Labor Health Conference with the Pennsylvania Federation of Labor, the Michigan Federation of Labor, the Electrical Workers, and the United Mine Workers, among others, although the American Federation of Labor itself maintained a frosty relationship with the bureau.25

The New Deal expanded the role of the federal government in the field of occupational safety and health, particularly regarding the chronic dust diseases silicosis and asbestosis. This was in part due to the tragedy at Gauley Bridge, West Virginia, in which more than 700 primarily African American migrants died as a result of dust diseases contracted while digging a tunnel for Union Carbide.26 The PHS provided money to state and local departments of health to establish industrial hygiene units. By 1941, 24 states established offices with funds from Title VI of the Social Security Act of 1935. Before 1936, only five state departments of health had industrial hygiene units.27 At the same time, the US Department of Labor established the Division of Labor Standards, but there were fundamental differences in the ways that the PHS and the Department of Labor approached the issue of how to protect workers on the job. The PHS defined its role as primarily to gather data and act as nonpartisan scientists, not as activists. The Department of Labor-under the leadership of the first woman cabinet secretary, Frances Perkins, and her colleagues Verne Zimmer and Clara Beyer-saw its role as an advocate for labor in union efforts to improve working conditions.28 The United Automobile Workers, for example, incorporated working conditions into their original unionization demands.29

Until the New Deal, the state departments of labor were the sole governmental agencies that had any right to intervene in the private workplace. This changed in 1936, when the first federal legislation to control workplace conditions was enacted. The Walsh-Healey Act required companies with contracts with the federal government of more than $10 000 to maintain certain workplace standards for health and safety.30 Until the enactment of OSHA, the limited protections ofWalsh-Healey were the only federal safeguards workers could expect.

World War II presented new challenges for protecting workers' safety and health. The massive military buildup, combined with the draft of millions of young men, resulted in the recruitment of women in unprecedented numbers into heavy industry, and they were faced with speedups and long hours.31 The exposure of these workers to asbestos in the ship-building industry, to benzene, beryllium, lead, and a host of other toxic chemicals in airplane and ordinance production-along with the dangers inherent in the production of explosives-made safety and health and the conservation of labor a major concern for government, management, and unions alike.32

THE POSTWAR LABOR ACCORD AND THE CREATION OF OSHA

The end of the war unleashed many of the tensions that had been built up between management and labor during the war years. In 1945, the death of President Franklin D. Roosevelt and the resignation of Secretary of Labor Frances Perkins marked the end of the New Deal for labor. In the two years following the end of the war, there were more strikes involving more workers than at any other time in American history. Business and more conservative politicians reacted strongly to this challenge to business dominance in labor- management relations. Spearheaded by conservative Republican congressmen and fueled by a growing fear of communism at home and abroad, a series of antilabor initiatives were passed, including the Taft-Hartley Act of 1947. In addition to legislation, labor and management sought to achieve an "accord" to reduce labor strife. As part of this accord, most unions often ignored or downplayed issues of occupational safety and health in contract negotiations. Although wages and hours were negotiable, safety and health issues were ceded to management as part of their control over the work process.33 This had important, negative effects on labor's ability to shape conditions at work. For most unions, negotiations regarding health now revolved around health insurance and hospital and physician care rather than control over working conditions. For example, the United Mine Workers, among the most radical unions of the 1930s, was faced with demands for increased production and greater exposure to deadly coal dust with the introduction of highspeed power drills. In exchange for this increased production and, ultimately, higher rates of disease, owners provided

funding for a system of hospitals and health clinics for their workforce. There were notable exceptions to a pattern of exchanging health services for control over the workplace, such as the Union of Mine, Mill and Smelter Workers in the 1950s and the Oil, Chemical and Atomic Workers Union in the 1960s, both of which continued to prioritize working conditions.34

By the 1960s, the beginnings of deindustrialization and the mobilization around the war in Vietnam led US industry to intensify its demands on labor, which resulted in longer hours and increasingly dangerous working conditions. Workers in the shipyards of Louisiana and the oil fields of west Texas would witness epidemics of once seemingly rare silicosis; miners in West Virginia and Pennsylvania would later find themselves disabled by coal workers' pneumoconiosis. Immigrant labor was an early focus of attention among unorganized agricultural workers in California, Washington State, and Oregon. Cesar Chavez brought to national attention the sorrowful conditions of labor and the threat of pesticides to migrant workers through a national strike and boycott of grapes, joining together their concerns with those of middle-class consumers who, in the wake of Rachel Carson's Silent Spring, were conscious of the potential harms of pesticide residues in foods. In addition, labor organizers, public health physicians, scientists, environmentalists, and consumer advocates such as Tony Mazzocchi, Irving Selikoff, Barry Commoner, Ralph Nader, Lorin Kerr, and Rachel Carson became part of a broader environmental and labor movement pushing for federal legislation to protect workers and consumers alike. Among the major occupational diseases that were the focus of attention and activism were asbestosis and mesothelioma, coal workers' pneumoconiosis, byssinosis, and lead poisoning for both workers and children.35 Out of this mobilization by unions and social movements alike came the passage of the Coal Mine Health and Safety Act of 1969 and the Occupational Safety and Health Act of 1970 (OSH Act), as well as the National Environmental Policy Act (1969), the establishment by Executive Order of President Richard Nixon of the Environmental Protection Agency (1970), and the Consumer Product Safety Act (1972). The role of Mazzocchi and the Oil, Chemical and Atomic Workers Union was especially important for the passage of the OSH Act, but it was the organized efforts of retired union miners with the guidance of Lorin Kerr, even in the face of opposition or inaction on the part of the United Mine Workers, that led to the passage of Coal Mine Safety and Health Act. Never before had the federal government established agencies with as broad a mandate to protect the majority of the nation's workers, the environment, and consumers alike.36

THE OSH ACT AND BEYOND

The OSH Act is rightfully recognized as a milestone in overcoming the challenge that Lincoln raised a century earlier. Through it, the long history of labor's struggles over exploitation was formally recognized by the government, and two agencies, OSHA and the National Institute for Occupational Safety and Health (NIOSH), were established to rectify centuries of injustice. NIOSH, as an agency in the Department of Health, Education, and Welfare, was designed to provide OSHA with the best scientific evidence of how workers should be protected from harm, and under administrators such as Anthony Robbins it fulfilled those objectives. But OSHA, as a regulatory agency, had a more complex mandate: to balance the interests of labor and management, as well as to take into consideration the economic impact of regulations and their technical feasibility. From the first, the historical tensions over the inequalities that led to workers' deaths and diseases were evident. The history of asbestos regulation is an example. NIOSH, in 1972, speaking of asbestos-associated lung cancer and mesothelioma, held that there was no truly "safe" level of exposure. But OSHA was unable to adopt a zero-exposure standard that threatened the existence of entire industries. While OSHA had over the decades significantly lowered the Permissible Exposure Limit for asbestos, to this day, despite the unanimity of professional opinion that asbestos is carcinogenic, it is still allowed in many products.

Despite the legislation's shortcomings, there was tremendous optimism among unions and their membership that OSHA would improve conditions on the job, bringing the authority and power of the federal government to work on behalf of labor. The leadership of Eula Bingham from 1977 to 1981 gave hope that this could be the case, especially since OSHA was able to establish a series of new standards that significantly lowered exposures to dangerous materials such as asbestos, arsenic, benzene, lead, cotton dust, and others, including a number of carcinogens.37 Bingham also was instrumental in broadening OSHA's base of support through her use of "New Directions" grants,

which provided support for the Committees for Occupational Safety and Health that had begun forming in the early 1970s.38 OSHA's reputation as an activist agency stems almost completely from its activities during Bingham's brief tenure.

Very quickly, strong industry opposition to OSHA developed through such organizations as the Business Roundtable, the John Birch Society, and lawsuits challenging the right of OSHA inspectors to enter private workplaces without warrants.39 Soon, OSHA's efforts to reform the workplace were undermined by lawsuits, industry-funded scientific studies, challenges to the evolving science of occupational safety and health, and an enormous propaganda campaign associating regulatory actions as a threat to business growth and prosperity.40 Beginning in the 1980s with the ascent of Ronald Reagan to the presidency, business groups pushed an antiregulatory program. OSHA was a particular target as Reagan appointed Thorne Auchter, an executive in the construction industry, to head the agency. As Charles Noble describes his tenure, Auchter "withdrew [OSHA's own] booklets on cotton dust, acrylonitrile, health and safety rights, and vinyl chloride because they were too one-sided."41 Opposition continued through the 1990s and early 2000s. During the Clinton administration, OSHA worked with labor unions to pass new ergonomic standards, but their efforts were quashed by the Republican Congress and George W. Bush, who in March 2001 signed a joint resolution to reject it.42

Barack Obama's election led to new hope that OSHA would once again live up to its original promise, especially with the appointment of David Michaels, epidemiologist and labor advocate, as its administrator. He reinvigorated an agency that had been under assault for nearly its entire existence. One major accomplishment was OSHA's promulgation of a silica standard that the agency had first proposed in the 1970s.43 Shortly after the advent of the Trump administration, OSHA once again found itself under attack as the administration's antiregulatory policies led to "declining federal oversight of workplace safety" that "coincided with an increase in deaths in workplaces monitored by OSHA."44 Michaels stated in 2010 that "Fourteen workers die on the job each day, far from the headlines, often noted only by their families, friends, and co-workers."45 And injuries have been far from the only hazards US Labor faces. As Michaels pointed out, "every year more than four million workers are seriously injured or sickened by exposure to toxic agents."46

Throughout the 20th century, the central contradiction of a culture that idealized the rights of the individual and equality between workers and owners was pressed by the changing social realities of work in America. On the one hand, the state could intervene to protect the health and welfare of workers because it recognized that there was a fundamental inequality in power between management and labor. On the other hand, despite all the reforms and accomplishments of OSHA, there is a continuing inequality in power between owners and workers. Although Lincoln's Second Inaugural addressed the fundamental immorality of slavery and although the Civil War formally ended the most obtuse manifestation of its grotesque legacy, the struggle over occupational safety and health continues.

In 1960, Edward R. Murrow commented on the world as he saw it then when he noted that "We no longer own slaves; now we can rent them."47 Today, the daily toll of mesothelioma, lead poisoning, injuries in construction and trucking, silicosis, and numerous other deaths and diseases is a testament to this truth. As this short history of occupational safety and health demonstrates, labor and its allies have recognized these perils in the workplace, and as a result, workers' safety and health capture the ongoing history of America's struggles against various forms of oppression. ÂfPH

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CONFLICTS OF INTEREST
Both authors have appeared in court on behalf of workers who have been harmed by industrial injuries and disease.
Footnote
ENDNOTES
1. Abraham Lincoln, "Second Inaugural Address," April 10, 1865, https://www.ourdocuments.gov/doc.php?flash=false& doc=38&page=transcript (accessed December 7, 2019).
2. Robert Steinfeld, The Invention of Free Labor: The Employment Relation in English &American Law and Culture, 1350-1870 (Chapel Hill, NC: University of North Carolina Press, 1991), 8. See the various works by legal scholars who have traced the transformation of American law as it responded to the social and economic transformation of American society in the 19th and 20th centuries: Christopher Tomlins, Law, Labor, and Ideology in the Early American Republic (New York, NY: Cambridge University Press, 1993); Steinfeld, The Invention of Free Labor; Robert Steinfeld, Coercion, Contract, and Free Labor in the Nineteenth Century (New York, NY: Cambridge University Press, 2001); Karen Orren, Belated Feudalism: Labor, the Law, and Liberal Development in the United States (Cambridge, UK: Cambridge University Press, 1991; Karen Orren, "The Laws of Industrial Organization, 1870-1920," in Michael Grossberg and Christopher Tomlins, eds., Cambridge History of Law in America, vol. 2 (New York, NY: Cambridge University Press, 2008), 565.
3. Steinfeld, The Invention of Free Labor, 9.
4. William Graebner, "Doing the World's Unhealthy Work: The Fiction of Free Choice," Hastings Center Report 14, no. 4 (1984): 28-37.
5. See Frederick Winslow Taylor, The Principles of Scientific Management (New York, NY: Dover Publications, 1911, 1997).
6. Roy Rosenzweig, Eight Hours for What We Will: Workers and Leisure in an Industrial City, 1870-1921 (New York, NY: Cambridge University Press, 1983).
7. Gerald Markowitz and David Rosner, "Seeking Common Ground: A History of Labor and Blue Cross," Journal of Health Politics, Policy and the Law 16 (1991): 695-718; Robert Asher, "The Limits of Big Business Paternalism: Relief of Injured Workers in the Years Before Workmen's Compensation," in Rosner and Markowitz, eds., Dying for Work: Workers' Safety and Health in Twentieth Century America (Bloomington, IN: University of Indiana Press, 1987), 19-33.
8. David Rosner and Gerald Markowitz, "The Early Movement for Occupational Safety and Health, 1900-1917," in Judith Leavitt and Ronald Numbers, eds., Sickness and Health in America, 2nd ed. (Madison, WI: University ofWisconsin Press, 1985), 507-521.
9. Cited in Lochner v. New York, 198 US 45 (1906), Argued February 23-24, 1905, Decided April 17, 1906, p. 197-198, http://supreme.justia.com/cases/federal/ us/198/45/case.html (accessed February 10, 2020). This was in spite of the conditions of the New York bakeries, conditions that had provoked 10 years of strikes and labor disputes from the 1890s on. Books have been written on this case, largely interpreting the conflicting constitutional principles ostensibly embodied in the 14th Amendment's Due Process Clause, which protected the individual from the arbitrary power of the State. This amendment, initially meant to protect freed slaves, was, ironically, used to assert the "rights" of workmen to work long hours in unhealthy conditions. It was interpreted in various decisions to mean that the "liberty" of contract trumped the regulatory "intrusion" of the state into management-labor disputes. Some

maintain that Lochner represented a certain type of "respect" for the concept of the "independent artisan" of old. See John Fabian Witt, The Accidental Republic: Crippled Workingmen, Destitute Widows, and the Remaking of American Law (Cambridge, MA: Harvard University Press, 2004); David Bernstein, Rehabilitating Lochner: Defending Individual Rights Against Progressive Reform (Chicago, IL: University of Chicago Press, 2011).
10. "A Strike for Clean Bread," The Survey 24 June 18, 1910): 483-488; "Investigations Have Disclosed the Fact That Unhealthy and Poisonous Bread Is Made in Non-Union Bake Shops," Woman's Label League Journal (June 1913): 13.
11. Lochner v. New York, 198 US 45 (1906), Argued February 23-24, 1905, Decided April 17, 1906, http://supreme. justia.com/cases/federal/us/198/45/case. html, p. 197-198 (accessed February 10, 2020).
12. The term "wage slave" first began to appear in the years around the Civil War, with its usage sky-rocketing after the 1880s. See "wage slavery" in Google Books N-Gram Viewer, https://books.google.com/ngrams/ raph?content=wage+slavery&year_ start=1800&year_end=2000&cor pus=15&smoothing=3&share=& direct_url=t1%3B%2Cwage%20 slavery%3B%2Cc0#t1%3B%2Cwage%20 slavery%3B%2Cc0 (accessed December 7, 2019). The term "wage slave" continued well into the 20th century to capture the evolving exploitation of the new factory system. See Gerald Markowitz and David Rosner, eds., Slaves of the Depression: Workers' Letters About Life on the Job (Ithaca, NY: Cornell University Press, 1987).
13. Upton Sinclair, "What Life Means to Me," Cosmopolitan 41 (October 1906): 594; Arlene Finger Kantor, "Upton Sinclair and the Pure Food and Drugs Act of 1906," American Journal of Public Health 66 (1976): 1202-1205; Deborah Blum, The Poison Squad: One Chemist's SingleMinded Crusade for Food Safety at the Turn of the Twentieth Century (New York, NY: Penguin Books, 2018).
14. Crystal Eastman, Work-Accidents and the Law (New York, NY: Russell Sage Foundation, 1910). Her study first appeared in Charities and the Commons, a leading social welfare journal of the period. See Maurine Greenwald and Margo Anderson, eds., Pittsburgh Surveyed: Social Science and Social Reform in the Early Twentieth Century (Pittsburgh, PA: University of Pittsburgh Press, 1996).
15. "Joint Sanitary Standards in the Cloak, Suit and Skirt Industry," The Survey 26 (August 19, 1911): 734. See Richard Greenwald, The Triangle Fire, the Protocols of Peace, and Industrial Democracy in Progressive Era New York (Philadelphia, PA: Temple University Press, 2005).
16. New York State's Second Report of the Factory Investigating Commission, Volume V (1913), 1576-1577.
17. See, for example, Alice Kessler-Harris, Out to Work: A History of Wage-Earning Women in the United States (New York, NY: Oxford University Press, 1982).
18. Amy Fairchild, Ronald Bayer, and James Colgrove, Searching Eyes: Privacy, the State and Disease Surveillance in America (Berkeley, CA: University of California/ Milbank, 2007), 83-92.
19. David Rosner and Gerald Markowitz, "Safety and Health During the Progressive Era," in Leavitt and Numbers, Sickness and Health in America, 507-521.
20. Anthony Bale, Compensation Crisis: The Value and Meaning of Work-Related Injuries and Illnesses in the United States, 1842-1932, PhD Dissertation (Waltham, MA: Brandeis University, 1986).
21. This discussion of conservative reforms such as worker's compensation laws can be traced back to, for example, James Weinstein, The Corporate Idea in the Liberal State, 1900-1918 (Boston, MA: Beacon Press, 1968). David Rosner and Gerald Markowitz, Deadly Dust: Silicosis and the Politics of Occupational Disease in Twentieth Century America (Princeton, NJ: Princeton University Press, 1991).
22. T.W. Schereshewsky, "Industrial Hygiene," Public Health Reports 30 (October 1, 1915): 2928; "Editorial: Our Public Health Service," American Journal of Public Health 29 (September 1939): 1044-1045; W. S. Bean, "The Role of the Federal Government in Promoting Industrial Hygiene," American Journal of Public Health 15 (July 1925): 626.
23. Mark Aldrich, Safety First: Technology, Labor, and Business in the Building of American Work Safety, 1870-1939 (Baltimore, MD: Johns Hopkins University Press, 1997).
24. Christopher Sellers, Hazards of the Job: From Industrial Disease to Environmental Health Science (Chapel Hill, NC: University of North Carolina Press, 1997), 138-139.

25. See Workers' Health Bureau File, in C. E.A. Winslow Papers at Yale University Archives, and C. EA. Winslow to L. R. Thompson, March 7, 1922, National Archives Record Group (NARG) 90, Public Health Service; "Proceedings," The First National Labor Health Conference, Cleveland, Ohio, June 18-19, 1927; David Rosner and Gerald Markowitz, "Safety and Health as a Class Issue: The Workers' Health Bureau of America, 1921-1927," Science and Society 48 (winter 1984-1985): 466-482.
26. Martin Cherniack, The Hawk's Nest Incident: America's Worst Industrial Disaster (New Haven, CT: Yale University Press, 1989); Rosner and Markowitz, Deadly
27. Thomas Parran to Verne Zimmer, December 8, 1938, NARG 90, "General Classified Establishments"; Memorandum, Dr. Jones to Mrs. Beyer, January 11, 1937, NARG 100, First Series, 1934-1937, 7-2-3-5. Box 65; Christopher Sellers, "The Public Health Service's Office of Industrial Hygiene and the Transformation of Industrial Medicine," Bulletin of the History of Medicine 65 (1991): 42-73.
28. David Rosner and Gerald Markowitz, "Research or Advocacy: Federal Occupational Safety and Health Policies During the New Deal," Journal of Social History 18 (1985): 365-381.
29. Nelson Lichtenstein, The Most Dangerous Man in Detroit: Walter Reuther and the Fate of American Labor (New York, NY: Basic Books, 1995).
30. See, for example, J. L. Henshaw, G. S. Haffney, A. K. Madl, and DJ. Paustenbach, "The Employer's Responsibility to Maintain a Safe and Healthful Work Environment: An Historical Review of Societal Expectations and Industrial Practices," Employee Responsibilities and Rights Journal 19 (2007): 173-192; W G. Whittaker, "Federal Contract Labor Standards Statutes: An Overview," Congressional Research Service, 2005, https://digitalcommons.ilr.cornell.edu/cgi/viewcontent. cgi?article=1207&context=key_workplace (accessed December 2, 2019).
31. Alice Kessler-Harris, "Where Are the Organized Women Workers?" Feminist Studies 3 (1975): 92-110; Allison L. Hepler, "Shaping the Life of the Pre-Natal: Labor Laws, Liability, and Lead Poisoning of Women in Industry in TwentiethCentury United States," Social Politics, 6 (1999): 54-75; Allison L. Hepler, "'And We Want Steel Toes Like the Men': Gender and Occupational Health during World War II," Bulletin of the History of Medicine 72 (1998): 689-713.
32. Walter E. Fleischer, Frederick J. Viles Jr, Robert Gade, and Philip Drinker, "A Health Survey of Pipe Covering Operations in Constructing Naval Vessels," Journal of Industrial Hygiene and Toxicology, 28 (January 1946): 9-16.
33. Nelson Lichtenstein, "From Corporatism to Collective Bargaining: Organized Labor and the Eclipse of Social Democracy in the Postwar Era," in Gary Gerstle and Steve Fraser, eds., The Rise and Fall of the New Deal Order, 19301980 (Princeton, NJ: Princeton University Press, 1989), Chapter 5. For broader reviews of the evolution of health insurance debates, see also Alan Derickson, Health Security for All: Dreams of Universal Health Care in America (Baltimore, MD: Johns Hopkins University Press, 2005), and Colin Gordon, Dead on Arrival: The Politics of Health Care in Twentieth Century America (Princeton, NJ: Princeton University Press, 2003).
34. Alan Derickson, Black Lung: Anatomy of a Public Health Disaster (Ithaca, NY: Cornell University Press, 1998); Josiah Rector, "Environmental Justice at Work: The UAW, the War on Cancer and the Right to Equal Protection from Toxic Hazards in Post-War America," Journal of American History 101 (2014): 480-502; Laura Polido, Environmentalism and Economic Justice: Two Chicano Struggles in the Southwest (Tucson, AZ: University of Arizona Press, 1996); Barbara Smith, Digging Our Own Graves: Coal Miners and the Struggle Over Black Lung Disease (Philadelphia, PA: Temple University Press, 1987); Les Leopold, The Man Who Hated Work and Loved Labor: The Life and Times of Tony Mazzocchi (White River Junction, VT: Chelsea Green Publishing, 2007).
35. Ray Davidson, Peril on the Job: A Study of Hazards in the Chemical Industries (Washington, DC: Public Affairs Press, 1970), 184-185.
36. Tony Mazzocchi, interview by Gerald Markowitz and David Rosner, January 25, 2001; See David Vogel, Fluctuating Fortunes: The Political Power of Business in America (New York, NY: Basic Books, 1989), 86.
37. David R. McCaffrey, OSHA and the Politics of Health Regulation (New York, NY: Plenum Press, 1982), 132-137.
38. National Council for Occupational Safety and Health, "A History of the COSH Movement,"

https://coshnetwork.org/history-cosh-movement (accessed January 10, 2020).
39. Occupational Safety and Health Administration, "Reflections on OSHA's History," January 2009, https://www.osha.gov/history/OSHA_ HISTORY_3360s.pdf (accessed January 10, 2020). For a broad history of the early years of OSHA, see Nicholas Ashford, Crisis in the Workplace: Occupational Disease and Injury: A Report to the Ford Foundation (Cambridge, MA: MIT Press, 1976); Daniel Berman, Death on the Job (New York, NY: Monthly Review Press, 1978).
40. David Vogel, The Market for Virtue: The Potential and Limits of Corporate Social Responsibility (Washington, DC: Brookings Institution Press, 2005), 202.
41. David Noble, Liberalism at Work, the Rise and Fall of OSHA (Philadelphia, PA: Temple University Press), 193.
42. US Department of Labor, "Ergonomics Background," https://www.osha.gov/ archive/ergonomics-standard/archive. html (accessed January 11, 2020).
43. See US Department of Labor, "1926.1153-Respirable Crystalline Silica," https://www.osha.gov/ laws-regs/regulations/standardnumber/1926/1926.1153 (accessed January 10, 2020); Tom Musick, "Long Run: An Interview With OSHA's David Michaels," Safety &Health, June 26, 2019, https://www.safetyandhealthmagazine.com/articles/14298-long-run-aninterview-with-oshas-david-michaels (accessed November 11, 2019).
44. Michelle Chen, "Declining Federal Oversight ofWorkplace Safety Could Have Fatal Consequences," The Nation, March 27, 2019, https://www.thenation. com/article/workplace-injuries-oshatrump (accessed November 11, 2019); "Updated OSHA Agenda Reflects Trump Administering's Focus on Deregulation," Safety + Health, https://www.safetyandhealthmagazine.com/ articles/15985-updated-agenda-reflectstrump-administration-focus-on-deregulation (accessed November 11, 2019).
45. Remarks by David Michaels, Occupational Safety and Health Review Commission (Annual Judicial Conference, Charleston, SC, September 14, 2010), https://www.osha.gov/news/ speeches/09142010 (accessed February 10, 2020).
46. David Michaels, "OSHA at Forty: New Challenges and New Directions," July 19, 2010, http://www.thepumphandle.org/wp-content/ uploads/2012/04/54652-OSHA_at_ Forty-1.pdf (accessed February 10, 2020).
47. Edward R. Murrow, Harvest of Shame [documentary film], CBS, directed by Fred Friendly, released November 25, 1960. This documentary stimulated sympathy for migrant workers, among the most exploited laborers in the nation at the time.

DETAILS

Subject:	Working hours; Maritime industry; Working conditions; Abolition of slavery; New Deal; Legislation; Public health; Occupational safety; Industrial development; Occupational health; Federal court decisions; Mining industry; Strikes; Womens health; Federal legislation; Journalists; Federal government; Injuries; Unions; Workplaces; Economic impact; Tactics; 20th century; Federal agencies; Workers; Mining accidents &safety; Health care expenditures; Bakeries; Working class; Capitalism; Labor unions; Consumer protection; Consumers; Costs; Wages &salaries; Noncitizens; Manufacturing; Factories
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CARDIORESPIRATORY FITNESS DECLINE IN AGING FIREFIGHTERS

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FULL TEXT

We read "Longitudinal Decline in Cardiorespiratory Fitness With Age Among Male Firefighters in San Diego, California, 2005-2015" by Cameron et al.1 with great interest. This article demonstrated that age is negatively associated with cardiorespiratory function (CRF) among firefighters. Given that cardiovascular disease is the leading cause of death among on-duty firefighters and that CRF impairment is a pronounced risk factor for cardiovascular disease, the findings of this study indicate that (1) the reduced CRF in combination with high physical and mental demands might increase the likelihood ofdeath among older firefighters, and (2) improving CRF may prevent cardiovascular disease and reduce death caused by cardiovascular disease among on-duty aging firefighters.

Some highlighted findings require further clarification. First, the researchers found that body fat does not moderate the association between age and CRF. However, previous studies have documented that increased age is directly associated with CRF reduction,2 that age is positively related to body fat,3 and that elevated body fat is inversely associated with CRF.4 Therefore, body fat may serve as a mediator in the causal pathway between age and CRF, instead ofa moderator. Additionally, this could suggest the addition of several different moderators, such as the initial CRF level, which may counterbalance this mediation effect.

Second, Cameron et al. concluded that CRF increased by 0.9 metabolic equivalents over 10 years among those aged 50 years and older. This marked increased in CRF seen in the older group occurred possibly because the authors may not have consider the extremely high rate of dropout (e.g., retirement), resulting in dramatically decreasing the number of participants from 212 at baseline visit to 7 at the 10th visit. This suggests that the remaining older firefighters are fit because of their recorded maximal oxygen uptake (VO2max) compared with national norms. Furthermore, the treadmill test is not equivalent to cycle ergometer testing because the treadmill test might lead to a 14% higher VO2max compared with the VO2max obtained during cycle ergometer testing.5

Third, we believe that it is difficult to claim that this small sample size is representative of all US firefighters. Obviously, this study was conducted in San Diego, California, which indicates a regional sample instead of a representative sample. Fourth, it might not be a strict observational study because the intervention, a wellness program, was included. Finally, the treadmill test might lead to a 14% higher VO2max compared with the VO2max obtained during cycle ergometer testing.5

In summary, we support the need to provide interventions and wellness programs to promote CRF in firefighters, who protect public health and ensure public safety. /4JPI-I

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CONTRIBUTORS
X. Gao is the primary author of this letter. N.J. Deming, K. Moore, and T. Alam reviewed, edited, and revised several drafts. All authors contributed equally.
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We appreciated contributions made by the members of the San Diego Fire-Rescue Department for their serviceandthestaffattheSanDiegoSportMedicineand Family Health Center.
Note. The views expressed are those of the authors and do not necessarily reflect the official policy or position, either expressed or implied, of the US Air Force, Department ofDefense, Department ofHealth and Exercise Science, Colorado State University, or the US government.
CONFLICTS OF INTEREST
The authors have no conflicts ofinterest to declare.

Sidebar

EDITOR'S NOTE
Cameron et al. declined to respond.
Letters to the editor referring to a recent AJPH article are encouraged up to 3 months after the article's appearance. By submitting a letter to the editor, the author gives permission for its publication in AJPH. Letters should not duplicate material being published or submitted elsewhere. The editors reserve the right to edit and abridge letters and to publish responses.
Text is limited to 400 words and 7 references. Submit online at www. editorialmanager.com/ajph. Queries should be addressed to the Editor-inChief, Alfredo Morabia, MD, PhD, at editorajph@qc.cuny.edu.

References

REFERENCES
1. Cameron NA, ShenJ, Rusk K, Parker R, GodinoJG, Nichols JF. Longitudinal decline in cardiorespiratory fitness with age among male firefighters in San Diego, California, 2005-2015. AmJPublicHealth. 2018;108(10): 1388-1393.
2. Verstappen FT, Huppertz RM, Snoeckx LH. Effect of training specificity on maximal treadmill and bicycle ergometer exercise. Int J Sports Med. 1982;3(1):43-46.
3. Betik AC, Hepple RT. Determinants of VO2 max decline with aging: an integrated perspective. Appl Physiol Nutr Metab. 2008;33(1):130-140.
4. Lee JH, Song, CH, Yum KS, et al. Age associated changes in body mass index and body fat distribution. Korean J Fam Med. 2003;24(11):1010-1016.
5. Baur DM, Christophi CA, Tsismenakis AJ, Cook EF, Kales SN. Cardiorespiratory fitness predicts cardiovascular risk profiles in career firefighters. J Occup Environ Med. 2011;53(10):1155-1160.

DETAILS

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A Breath of Fresh Air

Levy, Jonathan I [1] [1] Department of Environmental Health, Boston University School of Public Health, Boston, MA

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ABSTRACT (ENGLISH)

A Breath of Fresh Air Choked: Life and Breath in the Age of Air Pollution, First Edition By Beth Gardiner Hardcover: 312 pages; $27.50 Chicago, IL: University of Chicago Press; First edition (April 19, 2019) ISBN-13: 978-0226495859

FULL TEXT

A Breath of Fresh Air Choked: Life and Breath in the Age of Air Pollution, First Edition By Beth Gardiner Hardcover: 312 pages; $27.50 Chicago, IL: University of Chicago Press; First edition (April 19, 2019) ISBN-13: 978-0226495859

Writing about the health effects of air pollution for general audiences can be akin to steering between Scylla and Charybdis. Focusing too much on the numbers-four million deaths per year from ambient air pollution, seven million if including household air pollution1-can seem dry and impersonal, but focusing too much on individual anecdotes can seem unscientific and not befitting the scale and scope of the problem. An emphasis on the adverse effects of air pollution seems overly gloomy and ignores the tremendous progress made in many cities and countries around the world, but an emphasis only on progress and potential does not give adequate weight to the population health toll.

Beth Gardiner's book Choked: Life and Breath in the Age of Air Pollution skillfully navigates this terrain and provides a gripping and robust portrait of current air pollution conditions and their implications around the world. She captures the political, economic, and social factors that have led to this global challenge and that also provide some optimism regarding our ability to improve air quality globally. She directly tackles the contradictions inherent in an exposure that everyone experiences, but the implications of which few appreciate.

THE GLOBAL CONDITION

Gardiner tells the story of air pollution by deftly moving across settings that reinforce both the ubiquity of air pollution and the variability across cities and countries. An important element of Gardiner's book is her recognition of populations most vulnerable to the health effects of air pollution, ranging from children working at brick kilns in India to agricultural workers in California to coal miners in Poland. But rather than portraying these populations as powerless and anonymous victims, Gardiner spends significant time talking to people to understand the circumstances that contributed to their exposures. More importantly, she devotes large sections ofthe book to conversations with community advocates and others who are working to effect change.

Although Gardiner's observations in the field and conversations with individuals provide the backbone of the book, key aspects of air pollution science and epidemiology are discussed throughout. Her coverage of the state of the science is thorough and up-to-date, acknowledging the growing literature related to neurocognitive effects and birth outcomes rather than solely focusing on respiratory or cardiovascular effects. Few people outside of the scientific community connect air pollution with diseases like Alzheimer's or Parkinson's, and raising consciousness about these associations in an aging world is quite important.

There were two small omissions in the book, which do not detract from its power but represent missed opportunities in telling the comprehensive story of air pollution. The first was that, in spite of Gardiner's emphasis on traffic and

near-roadway air pollution, there was no discussion of ultrafine particulate matter. More generally, there was no discussion of how the scientific and regulatory communities have evolved in their thinking about the most relevant sizes ofparticulate matter. She does introduce the structure of the lung in the Prologue and makes reference to the size offine particulate matter in Chapter 2, but does not go further and talk about the regulatory evolution from total suspended particles to PM10 to PM2.5 (particulate matter <10 and 2.5 mg in aerodynamic diameter), nor does she consider the implications of not directly regulating ultrafine particulate matter given growing evidence of its health effects.2 This does not detract from the scientific precision ofthe book, and may only be of interest to a narrow group of readers, but it would have made the story more vivid to describe what particles of different sizes do in the body and to contemplate the implications of an unregulated size fraction of particulate matter.

A second missed opportunity relates to indoor air pollution in the developed world. Gardiner rightly focuses on biomass burning and cookstoves in the developing world, which have a profound health impact that disproportionately affects low-income rural women and children, but it would have been an interesting contrast to examine residential exposures to air pollution in the developed world as well. Given that most people spend the vast majority of their time indoors,3 and given that residential exposures can often be addressed more readily than ambient air pollution, the indoor environment is an important part of the air pollution story in the developed world as well. There are also many interesting angles to explore, given strong socioeconomic exposure disparities,4 economic constraints that may preclude taking health-protective action, personal decisions made by households, and complex ethical questions such as whether smoking bans in public housing are morally justified.5

That said, a book about an exposure that influences everyone across the world must necessarily make hard choices about where to focus. Gardiner rightly hones in on the countries where the public health burden of air pollution is greatest (India and China), pinpoints the factors that have led to successes and failures in those settings, and draws lessons that can be extrapolated elsewhere.

CURRENT EVENTS

There are two topics that are difficult for a book on air pollution published in 2019 to avoid. The first is the antipathy of the Trump administration toward environmental protection and much of the environmental research enterprise.6 Gardiner acknowledges this reality but tackles it from a novel perspective by focusing one chapter on the players involved in drafting the 1970 Clean Air Act, telling a fascinating story that has details that will be unfamiliar to many inside and outside of the field. The bipartisan spirit and the focus on finding evidence-based common ground provide a stark contrast to present time.

In addition, as Gardiner indicates in the Epilogue and elsewhere, it is difficult to think about the effects of air pollution without considering climate change, particularly with wildfires occurring with alarming regularity and severity in California, Australia, and elsewhere. It is logical that Gardiner does not dwell on climate change, as the global implications of air pollution are sufficiently complex without weaving in climate change. But she does conclude by raising the important but often underemphasized point that strategies to address one will often address the other. Even more importantly, the near-term health benefits related to reduced air pollution may justify actions to mitigate climate change, given that the climaterelated benefits have a much longer time horizon. This argument has been made many times in many settings, but it would have been interesting to get Gardiner's take on the argument (or the perspective of the many individuals she interviewed).

A UNIVERSAL MESSAGE

Through her personal story as a parent living in London, her global observations and conversations, and her review of the scientific literature, Gardiner makes the issue of air pollution relatable to a range of audiences. Forreaders with little background in air pollution, Choked gives a primer about why it matters, who is at risk, and what we can do about it. For those well-versed in the scientific literature as well as the politics of air pollution, Choked educates about the personal experiences of those who are affected by air pollution and want to effect change in their communities, as well as some of the lesser-told stories connected to environmental regulation and pollution control. This makes Choked a valuable contribution to the popular literature on air pollution. >4jPI-l

Jonathan I. Levy, ScD

CONFLICTS OF INTEREST

The authordeclares no conflicts ofinterest.

Sidebar

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Reprints can be ordered at http://www.ajph.org by clicking the "Reprints" link.

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References

REFERENCES

1. GBD 2017 Risk Factor Collaborators. Global, regional, and national comparative risk assessment of 84 behavioural, environmental and occupational, and metabolic risks or clusters of risks, 1990-2016: a systematic analysis for the Global Burden ofDisease Study 2016. Lancet. 2017;390(10100):1345-1422.

2. Li N, Georas S, Alexis N, et al. A work group report on ultrafine particles (American Academy ofAllergy, Asthma &Immunology): why ambient ultrafine and engineered nanoparticles should receive special attention for possible adverse health outcomes in human subjects. J Allergy Clin Immunol. 2016;138(2):386-396.

3. Klepeis NE, Nelson WC, Ott WR, et al. The National Human Activity Pattern Survey (NHAPS): a resource for assessing exposure to environmental pollutants. J Expo Anal Environ Epidemiol. 2001;11(3):231-252.

4. Adamkiewicz G, Zota AR, Fabian MP, et al. Moving environmental justice indoors: understanding structural influences on residential exposure patterns in lowincome communities. Am J Public Health. 2011;101(suppl 1):S238-S245.

5. WinickoffJP, Gottlieb M, Mello MM. Regulation of smoking in public housing. NEngl J Med. 2010;362 (24):2319-2325.

6. TollefsonJ. Science under siege: behind the scenes at Trump's troubled environment agency. Nature. 2018;559(7714):316-319.

DETAILS

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The Influence of Heat on Daily Police, Medical, and Fire Dispatches in Boston, Massachusetts: Relative Risk and Time-Series Analyses

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ABSTRACT (ENGLISH)

Objectives. To examine the impact of extreme heat on emergency services in Boston, MA. Methods. We conducted relative risk and time series analyses of 911 dispatches of the Boston Police Department (BPD), Boston Emergency

Medical Services (BEMS), and Boston Fire Department (BFD) from November 2010 toApril 2014 to assess the impactof extreme heat on emergency services. Results. During the warm season, there were 2% (95% confidence interval [CI] = 0%, 5%) more BPD dispatches, 9% (95% CI = 7%, 12%) more BEMS dispatches, and 10% (95% CI = 5%, 15%) more BFD dispatches on days when the maximum temperature was 90°F or higher, which remained consistent when we considered multiple days of heat. A 10°F increase in daily maximum temperature, from 80° to 90°F, resulted in 1.016,1.017, and 1.002 times the expected number of dailyBPD, BEMS, and BFD dispatch calls, on average, after adjustment for other predictors. Conclusions. The burden of extreme heat on local emergency medical and police services may be agency-wide, and impacts on fire departments have not been previously documented. Public Health Implications. It is important to account for the societal burden of extreme heat impacts to most effectively inform climate change adaptation strategies and planning.

FULL TEXT

Headnote

Objectives. To examine the impact of extreme heat on emergency services in Boston, MA.
Methods. We conducted relative risk and time series analyses of 911 dispatches of the Boston Police Department (BPD), Boston Emergency Medical Services (BEMS), and Boston Fire Department (BFD) from November 2010 toApril 2014 to assess the impactof extreme heat on emergency services.
Results. During the warm season, there were 2% (95% confidence interval [CI] = 0%, 5%) more BPD dispatches, 9% (95% CI = 7%, 12%) more BEMS dispatches, and 10% (95% CI = 5%, 15%) more BFD dispatches on days when the maximum temperature was 90°F or higher, which remained consistent when we considered multiple days of heat. A 10°F increase in daily maximum temperature, from 80° to 90°F, resulted in 1.016,1.017, and 1.002 times the expected number of dailyBPD, BEMS, and BFD dispatch calls, on average, after adjustment for other predictors.
Conclusions. The burden of extreme heat on local emergency medical and police services may be agency-wide, and impacts on fire departments have not been previously documented.
Public Health Implications. It is important to account for the societal burden of extreme heat impacts to most effectively inform climate change adaptation strategies and planning. (Am J Public Health. 2020;1 10:662-668. doi:10.2105/AJPH.2019. 305563)

(ProQuest: ... denotes formulae omitted.)

Extreme heat is a significant public health threat that is increasing in frequency, duration, and severity with climate change.1 In 1971 through 2000, Boston, Massachusetts, the focus of this study, experienced an average of 11 hot days (at least 90°F) per year, but it could experience up to 40 hot days by 2030 and 90 by 2070, depending on greenhouse gas emission trajectory.2 Although the definition of heat waves and extreme heat events varies by location and agency, heat has been the leading cause of death of all meteorological phenomena in recent decades in the United States3 and results in significant morbidity and a myriad of poor health outcomes.4,5 Recent research has shown that even at lower thresholds than previously thought, heat has the ability to affect public health and societal services6 and governance.7 It has been well documented that heat stressrelated ambulance calls,8-12 aggressive behavior (even in normal interactions and situations),13 and violent crime14 16 increase on hot days. Extreme heat has been associated with declines in cognitive function17,18 and sleep.19,20 Cognitive failures have been associated with increased driving errors in healthy adults.21 Poor sleep or sleep deprivation has been associated with increased traffic accidents,22 increased occupational injury,23 and inhibition of working memory and concentration.24 Extreme heat may also result in increases in impulsivity, which can escalate otherwise positive or neutral situations into aggressive situations.13 With these health outcomes, there are many potential pathways to emergency situations when the clinical and subclinical health impacts of extreme heat are being experienced across a large population, like a city.

Despite these many potential outcomes, as of 2016, the only incorporation of emergency services into heat preparedness planning in Boston was through increased awareness of medical practitioners of heat-related illness and increasing onsite power generation and backup for police, ambulance, and fire stations.2 Even though local first

responder groups, public health practitioners, and nonprofit groups were all able to provide anecdotal awareness of these societal impacts on hot days, a lack of quantitative evidence has limited resilience and adaptation planning to date.

The premise of this study was to evaluate agency-wide impacts of extreme heat on emergency services, as these health and behavioral changes that happen during extreme heat periods create pathways to emergency situations. The study's objective was to determine whether emergency services in Boston experienced greater need during extreme heat-through the dispatch of police, ambulance, and fire department services; we assessed this using both relative risk and time series analyses.

METHODS

Daily counts of emergency dispatch calls forthe City ofBoston forNovember 1,2010, to April 21, 2014, were publicly available from the Boston Department of Innovation and Technology.25 These calls represented 3 agencies-the Boston Police Department (BPD), Boston Emergency Medical Services (BEMS), andBoston Fire Department (BFD). Major holidays and local events (e.g., the Boston Marathon) were evaluated to determine if they were outliers. We computed descriptive statistics on the distribution of dispatches within agencies across the full year and the warm season (May-September) using a Student t test.

Meteorological Data and Exposure Assessment

We obtained daily maximum ambient temperature and daily maximum heat index (to assess both temperature and humidity) from Boston Logan International Airport and assessed them as continuous variables. Extreme heat can also be assessed by using temperature thresholds set a priori for a specific location. A common measure of extreme temperature exposure in Boston is when the daily maximum temperature is 90°F or above, and heat advisories are issued beginning at a daily maximum heat index of 95°F or above, both as defined by the local National Weather Service.26 City agencies use this definition to enact local warnings and responses (e.g., opening of cooling centers). In this study, hot days were those in which the maximum temperature was 90°F or above, and days with a maximum heat index of 95°F or above were considered hot and humid. We examined cumulative impacts of heat as a binary variable indicating 2 consecutive hot or hot and humid days. Data on daily ozone and particulate matter 2.5 microns or smaller in size (PM2.5) were available from the US Environmental Protection Agency's Air Quality System for Station 25-025-0042 located in Roxbury, Boston. Summary statistics of the local climate and air pollution can be found in Table 1.

Relative Risk Analysis

We used relative risk analyses to determine an agency's relative risk of dispatch on a hot day compared with nonhot days. We restricted relative risk analyses to the warm season to reduce seasonal confounding and any bias introduced from population fluctuations between the academic year and the warm season. (Analyses on the full study period are in Table A and Figure A, available as supplements to the online version of this article at http://www.ajph.org). The relative risk quasi-Poisson regression model equation is as follows:

(1) ...

where mj is the expected count of dispatch calls for an agency on day j, Ij [HotDay] is a binary indicator of a hot day, and log(Population) in year k represents the yearly number ofpermanent residents in Boston. We ran the same model substituting the indicator for hot day with an indicator for hot and humid day, 2 and 3 consecutive hot days, and 2 and 3 consecutive hot and humid days.

Time Series Analysis

We used time series (TS) analyses to assess the relationship between maximum temperature and dispatch call counts for each agency per unit increase in temperature, using a quasi-Poisson regression. TS analyses were also restricted to the warm season, but full-year analyses are in Table A and Figure A. The warm-season-restricted TS models used a nonparametric spline with 1 degree of freedom per year to account for any long-term trends in emergency services (we used 4 degrees of freedom per year in the full-year analysis to account for seasonal trends), and a natural cubic spline with 2 degrees of freedom for maximum temperature or maximum heat index, all determined a priori on the basis of previous research and to optimize the generalized cross validation criteria.

Sensitivity analyses on the degree of freedom for maximum temperature or maximum heat index did not influence the main results (not shown). We controlled for day of the week with indicator variables for each day, with reference to Friday. We also inserted linear terms for daily ozone and PM2.5 into the model, given ozone and PM2.5's association with both high temperature and relevant health outcomes. The TS model equation is as follows:
(2) ...
where mj is the expected count of dispatch calls for an agency on day j, I (HotDay)j is a binary indicator ofa hot day, I(DayofWeek). is an indicator for day of week, and s represents splines on variables with nonlinear trends; daily maximum temperature, ozone, and PM2.5 were all examined as continuous variables for each day j, and log(Population) in year k represents the yearly number of permanent residents in Boston. We ran the same model substituting maximum temperature for maximum heat index. Results are reported as percentage increase in the relative number of dispatch calls for each agency for a +10°F increase in maximum temperature or maximum heat index. We calculated local inflection points of the nonlinear maximum temperature for maximum heat index term for each agency to evaluate local trends in this exposure with our outcome of interest.

RESULTS

A total of 1268 days were included in this study period, whereas the analyses restricted to just the warm season consisted of446 days. Forty-one days exceeded 90°F, and there were 22 and 13 days when there were 2and 3-consecutive-day periods that exceeded this threshold, respectively. A total of 111 days had maximum temperatures exceeding 95°F, and there were 67 and 39 2- and 3-consecutive-day periods that exceeded this threshold, respectively. There was a total of 3 474 332 emergency dispatch calls during the study period (Table 2). Across all agencies, the mean number of dispatches per day was significantly greater during the warm season than during the full year (all P< .001; Table 2).

Relative Risk Analyses

The relative risk ofdispatch on a hot day, as determined by a binary indicator in which maximum temperature was 90°F or above, compared with a nonhot day, increased for all agencies during the warm season (Table 3; all full-year relative risk analyses can be found in Table A). The magnitude of this increase on single days of high temperatures was greater for BEMS (9%; 95% confidence interval [CI] = 7%, 12%) andBFD dispatch calls (10%; 95% CI = 5%, 15%) than for BPD calls (2%; 95% CI = 0%, 5%). When we considered 2- and 3-day periods when the maximum temperature was 90°F or above, there was still not a significant increase in the relative risk of dispatch for BPD. However, the relative risk of dispatch for BEMS was 10% (95% CI = 6%, 14%) and 10% (95% CI = 5%, 15%) on 2- and 3-day periods of maximum temperatures of 90°F and above, respectively. The relative risk of dispatch for BFD was greatest during 2-day (11%; 95% CI = 4%, 17%) and 3-day (13%; 95% CI = 5%, 22%) periods of high temperatures.

When we also factored in humidity, the relative risk of dispatch on days with a maximum heat index of 95°F or above increased 2% (95% CI = 0%, 4%) for BPD, 7% (95% CI = 5%, 9%) for BEMS, and 7% (95% CI = 4%, 10%) for BFD during the warm season. During 2- and 3-day periods of maximum heat index of 95°F or above, relative risks were slightly attenuated, but still excluded the null (relative risk = 1.0) for BEMS and BFD (Table 3).

Time Series Analyses

The estimated effects of maximum temperature were nonlinear for dispatches from all agencies, with higher relative risk at hot temperatures for BPD and BEMS and higher risks at hot and cold temperatures for BFD (Figure 1). The binary indicator for days with a maximum temperature of90°F or above, or a maximum heat index of 95°F or above, was not a significant predictor for any agency's dispatch calls in the TS model. However, the continuous values of maximum temperature and maximum heat index were significant predictors in all warm-season TS models. Ozone was a significant predictor of dispatches for BPD and BFD only when we evaluated maximum heat index and maximum temperature, respectively. PM2.5 was a significant predictor of dispatches for BPD only when we evaluated maximum heat index.

During the warm season, a 10°F increase in daily maximum temperature-from 80° to 90°F-resulted in 1.016, 1.017, and 1.002 times the expected number of daily BPD, BEMS, and BFD dispatch calls, respectively, on average, after

adjustment for the other predictors in the model. Full-year TS estimates can be found in Figure A. When we examined heat index as a continuous, nonlinear variable in the TS model, the same 10°F increase in daily maximum heat index resulted in 1.007, 0.985, and 1.018 times the number of BPD, BEMS, and BFD dispatch calls, respectively (Figure B, available as a supplement to the online version of this article at http://www.ajph.org).

The TS analyses show how there were increases in the predicted number of dispatches for each agency on days when the maximum temperature did not reach 90°F and days when the maximum heat index did not reach 95°F, both of which are thresholds currently used for putting local heat interventions into effect. The nonlinear effect of temperature on dispatch had local inflection points at 75°F for BPD, 85°F for BEMS, and 88°F forBFD, potentially indicating increases in the rate of increase in dispatches above these temperatures for each agency. We used these inflection points at threshold values for a secondary evaluation ofrelative risk (Table B, available as a supplement to the online version of this article at http://www.ajph.org).

DISCUSSION

This study offers a comprehensive analysis of the impacts of extreme heat on emergency services in Boston. It assesses the impacts of extreme heat and high temperatures on the frequency of emergency dispatch calls across Boston, during the full year and within the warm season. Moreover, the increased demand for police, medical, and fire services reported herein captures an additional public health burden from extreme heat that has not yet been fully captured in research examining the impacts of climate change on public health and societal services. These findings can inform climate change adaptation strategies, for both budgets and institutional preparedness, to ensure the resilience of emergency services as heat waves increase in frequency, severity, and duration in Boston.

During the warm season, there were 2% (95% CI = 0%, 5%) more BPD dispatches, 9% (95% CI = 7%, 12%) more BEMS dispatches, and 10% (95% CI = 5%, 15%) more BFD dispatches on days when the maximum temperature was 90°F or above. There were 2% (95% CI = 0%, 4%), 7% (95% CI = 5%, 9%), and 7% (95% CI = 4%, 10%) more BPD, BEMS, and BFD dispatches, respectively, on days when the maximum heat index was 95°F or above. During the warm season, TS analyses demonstrated that a 10°F increase in daily maximum temperature-from 80°F to 90°F-resulted in 1.016, 1.017, and 1.002 times the expected number of daily BPD, BEMS, and BFD dispatch calls, on average, after adjustment for other predictors.

The nonlinear effect of temperature on dispatch had local inflection points at 75°F for BPD, 85°F for BEMS, and 88°F for BFD, all of which are below current thresholds used for local heat warnings, as well as local heat interventions, such as the opening of cooling centers. This supports previous work that saw increased rates of morbidity and mortality in New England27 and public health impacts28 from extreme heat below current heat advisory criteria set by the National Weather Service.

Our findings demonstrate increases in BPD and BEMS dispatches as the temperature and heat index increase, establishing evidence that extreme heat events have agency-wide impacts on emergency services for these 2 agencies. Future analyses on the nature of each dispatch call would be necessary to fully understand this and the specific nature of dispatch calls that may be disproportionately increasing on extreme heat days. Ambulance calls8,10-12 and violent crime13-15 have been found to increase on hot days, and hospitalizations related to heat stress and other heat-related health outcomes increase during higher ambient temperatures.29,30 All of these relationships provide potential pathways for heat to result in increased need of BPD and BEMS services; police or emergency medical technicians could be required in emergency situations that involve more than violent crime or heat-stress-related health outcomes. The estimates found within this analysis for BPD and BEMS are similar to those found in previous research on extreme temperatures and ambulance dispatches in other cities around the world. For example, in parts of China, 1 study revealed a 2.6% increase in ambulance dispatches during a heat wave,8 and another demonstrated a 3% to 5% increase in the relative risk of ambulance dispatch with extreme heat. Similar analyses in the United States have shown a 8% to 14% increase in ambulance calls on hot days in the greater Seattle, Washington, area.12 During a particularly strong heat wave event in Australia in 2011, all-cause ambulance calls were found to increase 14%,11 demonstrating perhaps a high-end comparison had local conditions been particularly extreme during this study period. Police agency-wide impacts from extreme heat are less

prominent in previous literature; however, a national analysis of various societal governance metrics in the United States demonstrated that police-initiated stops increased up to approximately 29°C (84.2°F) and then decreased beyond this temperature, despite increases in police-related violations (e.g., violence, driver error).7

The result demonstrating the largest increase in relative risk in BFD dispatches on extreme heat days is, to our understanding, a novel finding. Most previous research on the influence of weather on fire department services shows strong links between climate change and wildfires,1 as well as between cold temperatures and residential fires from heating equipment and holiday decorations.31,32 The cold season was not the primary focus ofthis study. This is one ofthe first studies to provide evidence that fire departments, and the services they provide, are affected by extreme heat. Firefighters, including those in Boston, respond to many emergency scenarios across a variety of needs, including medical emergencies. More than 60% of Boston firefighters have an emergency medical technician certification; more than 40% of BFD responses in 2012 were for medical emergencies, whereas fewer than 10% were for actual fires.33 Thus, we hypothesize that the increase in BFD dispatch calls during days with high temperatures follows pathways similar to those of BPD and BEMS dispatches, but has been underrepresented in the body of scientific evidence highlighting the impact of heat on emergency services and climate adaptation planning. This association warrants more analysis to best understand the drivers of increased BFD dispatches during hot days and what specific call types may be most affected by extreme heat.

Limitations

This study has a few limitations. The use of ambient temperature measurements likely introduces a nondifferential exposure misclassification into the analysis, as the temperatures throughout Boston were different than at the airport and varied throughout the city. We also did not have information on those utilizing these emergency services, so we could not do any further analyses on age, gender, other modifiable factors, or the geographic distribution of these services. Additionally, we do not know if multiple emergency agencies (e.g., BPD and BEMS) were dispatched for the same call, which would involve personnel and financial costs for both services. This must be considered when planning appropriate future actions for these services during periods of extreme heat.

Future studies will include additional information on high spatial resolution of urban temperature patterns, and of sociodemographic and environmental parameters, to comprehensively assess vulnerability to these increases in emergency services spatiotemporally, with records on the details of each dispatch call. With the results presented in this article, we plan to work with local emergency service agencies to further evaluate the impact of extreme heat on the specific types of dispatch calls these agencies are receiving. This will allow for a clearer understanding of the causal pathway from extreme heat to emergency services, as well as enhance the financial, personnel, and climate change preparedness of emergency service agencies.

Conclusions

Despite these limitations, to our knowledge this was the first study to document the impact of heat on local fire department dispatches, as well as one of the first to examine the impacts ofheat on agency-wide BPD and BEMS dispatches in Boston, thus expanding the scientific understanding beyond violent crime and heat-stress-related ambulance calls. Strong and significant effects were seen across all agencies in both a relative risk and a TS analysis, even in analyses limited only to the warm-season months. Although summers in Boston are getting hotter, its climate is more moderate than that of many other urban centers in the United States, given its proximity to the ocean, and sea breezes influenced by the concavity of its coast, and the topography that allows summer temperatures to remain cooler than they otherwise might.34 Additionally, Boston's rate of some emergency situations, such as violent crime, may differ from those of other cities across the United States. The analysis framework used in this study will allow evaluation of extreme heat impacts on emergency services in other cities to inform local adaptation strategies. Effects may be even stronger in other cities with either heat exposure or emergency scenarios that are more extreme than in Boston, and we are currently working to explore this issue.

The impacts of hot days on increased emergency dispatch calls may result in significant financial and personnel burdens that warrant further consideration. An additional area of consideration that must be accounted for is the occupational heat stress experienced by these first responders on hot days,35 which would likely increase in the

future as heat becomes more pervasive. Despite research demonstrating the impact of extreme temperatures on health and societal services, climate adaptation plans more often account for mitigating the health impacts of extreme heat than planning for the increased need of a broad number of societal services. In Boston, the impacts ofstorm-related flooding and sea level rise on emergency services are well documented: increased stormwater flooding at fire and police stations will impede access and response; high tide flooding events will expose property valued at $1.3 billion occupied by essential facilities, including fire, emergency medical services, and police infrastructure; and low-probability flood events have the potential to inundate approximately 25% of police stations, which has led to Boston prioritizing flood-related adaptation for emergency service facilities.2 When it comes to extreme heat, despite the vast range of demonstrated societal impacts (e.g., negative health impacts, increased stress on electricity grid for air conditioning, expansion of roads and rails, poorer air quality), municipal services are only recommended to install backup power generation systems to adapt to extreme heat in the future.2 It is also vital to consider these societal burdens when planning for future emergency services.

Public Health Implications

This study expands scientific understanding of the many ways extreme heat influences public health and society, demonstrating that heat affects the agency-wide dispatch services of police, emergency medical, and fire department services. During the warm season, there were 2% (95% CI = 1.00%, 1.05%) more BPD, 9% (95% CI = 1.07%, 1.12%) more BEMS, and 10% (95% CI = 1.05%, 1.15%) more BFD dispatches on days with a maximum temperature of 90°F or above. There were 2% (95% CI = 1.00%, 1.04%), 7% (95% CI = 1.05%, 1.09%), and 7% (95% CI = 1.04%, 1.10%) BPD, BEMS, and BFD dispatches, respectively, on days with a maximum heat index of 95°F or above. However, when examining this with continuous temperature and heat index variables, we found that there are significant increases in the relative risk of dispatches on days well below 90°F. A local reexamination of extreme heat warning criteria and the associated social services that are provided once these thresholds are met (e.g., opening of cooling centers, transportation to cooling centers) may better protect the population and reduce negative societal consequences of extreme heat.

Climate change risk assessments and adaptation plans often account for the significant mortality and morbidity health impacts attributed to extreme heat. However, it is important to account for these societal burdens of extreme heat impacts on emergency services. Although this will be beneficial to ensuring the provision of services, the increase in first responders and budgets needed to meet a higher demand for services at higher temperatures should also be considered to allow Boston, and other cities around the United States, to most effectively, sustainably, and equitably implement climate change adaptation strategies. ÂfPU

CONTRIBUTORS

A. A. Williams served as the lead analyst and author. J. G. Allen, P.J. Catalano, andJ. D. Spenglerassistedwithstudy design and analysis. A.A. Williams, J. G. Allen, andJ.J. Buonocore obtained funding for the research. All authors contributed to the writing and editing of the article.

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The authors declare no conflicts of interest.

HUMAN PARTICIPANT PROTECTION

No personal data or human participants were used in this study, so no approval was required by the university's institutional review board.

Sidebar

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References

REFERENCES

1. Hoegh-Guldberg O, Jacob D, Taylor M, et al. Impacts of 1.5°C of global warming on natural and human systems. Available at: https://www.ipcc.ch/site/assets/ uploads/sites/2/2019/05/SR15_Chapter3_Low_Res. pdf. Accessed February 13, 2020.
2. Climate Ready Boston. December 2016. Available at: https://www.boston.gov/sites/default/files/embed/2/ 20161207_climate_ready_boston_digital2.pdf. Accessed February 15, 2019.
3. National Weather Service. Weather Fatalities. 2018. Available at: https://www.weather.gov/hazstat. Accessed March 4, 2020.
4. Reidmiller DR, Avery CW, Easterling DR, et al., eds. Fourth National Climate Assessment. Volume II: Impacts, Risks, and Adaptation in the United States, Report-in-Brief. Washington, DC: US Global Change Research Program; 2018.
5. US Global Change Research Program. Climate change impacts in the United States: US National Climate Assessment. 2014. Available at: http://purl.fdlp.gov/GPO/ gpo48682. Accessed October 22, 2018.
6. Weinberger KR, Zanobetti A, Schwartz J, Wellenius GA. Effectiveness of National Weather Service heat alerts in preventing mortality in 20 US cities. Environ Int. 2018;116:30-38.
7. Obradovich N, Tingley D, Rahwan I. Effects of environmental stressors on daily governance. Proc Natl Acad Sci USA. 2018;115(35):8710-8715.
8. Sun X, Sun Q, Yang M, et al. Effects oftemperature and heat waves on emergency department visits and emergency ambulance dispatches in Pudong New Area, China: a time series analysis. Environ Health. 2014; 13(1):76.
9. Bassil KL, Cole DC, Moineddin R, et al. The relationship between temperature and ambulance response calls for heat-related illness in Toronto, Ontario, 2005. J Epidemiol Community Health. 2011;65(9): 829-831.
10. Cheng J, Xu Z, Zhao D, et al. Impacts oftemperature change on ambulance dispatches and seasonal effect modification. Int J Biometeorol. 2016;60(12): 1863-1871.
11. Schaffer A, Muscatello D, Broome R, CorbettS, Smith W. Emergency department visits, ambulance calls, and mortality associated with an exceptional heat wave in Sydney, Australia, 2011: a time-series analysis. Environ Health. 2012;11(1):3.
12. Calkins MM, Isaksen TB, Stubbs BA, Yost MG, Fenske RA. Impacts of extreme heat on emergency medical service calls in King County, Washington, 2007-2012: relative risk and time series analyses of basic and advanced life support. Environ Health. 2016; 15(1):13.
13. Anderson CA. Heat andviolence. CurrDirPsychol Sci. 2001;10(1):33-38.
14. TiihonenJ, Halonen P, Tiihonen L, Kautiainen H, Storvik M, Callaway J. The association ofambient temperature and violent crime. Sci Rep. 2017;7(1): 6543.
15. Michel SJ, Wang H, Selvarajah S, et al. Investigating the relationship between weather and violence in Baltimore, Maryland, USA. Injury. 2016;47(1):272-276.
16. RottonJ, Cohn EG. Violence is a curvilinearfunction of temperature in Dallas: a replication. J Pers Soc Psychol. 2000;78(6):1074-1081.
17. Cedeño Laurent JG, Williams A, Oulhote Y, Zanobetti A, Allen JG, Spengler JD. Reduced cognitive function during a heat wave among residents of non-airconditioned buildings: an observational study of young adults in the summer of 2016. Patz JA, ed. PLOS Medicine. 2018;15(7):e1002605.
18. Park J. Temperature, test scores, and educational attainment. Harvard University Economics Department. September 14, 2016. Available at: https://www. switzernetwork.org/ sites/default/files/file-attachments/ temperature_test_scores_and_educational_attainment_-_ j_park_-_9-13-2016.pdf Accessed February 13, 2020.
19. Williams AA, Spengler JD, Catalano P, Allen JG, Cedeno-Laurent JG. Building vulnerability in a changing climate: indoor temperature exposures and health outcomes in older adults living in public housing during an

extreme heat event in Cambridge, MA. Int J Environ Res Public Health. 2019;16(13):2373.
20. Obradovich N, Migliorini R, Mednick SC, Fowler JH. Nighttime temperature and human sleep loss in a changing climate. Sci Adv. 2017;3(5):e1601555.
21. Allahyari T, Saraji GN, Adi J, et al. Cognitive failures, driving errors and driving accidents. Int J Occup Saf Ergon. 2008;14(2):149-158.
22. Pérez-Chada D, Videla AJ, O'Flaherty ME, Palermo P, Khoury M, Durán-CantollaJ. Sleep habits and accident risk among truck drivers: a cross-sectional study in Argentina. Sleep. 2005;28(9):1103-1108.
23. Nakata A, Ikeda T, Takahashi M, et al. Sleep-related risk of occupational injuries in Japanese small and medium-scale enterprises. Ind Health. 2005;43(1):89-97.
24. American Sleep Association. Sleep deprivation: symptoms, causes, treatments. 2019. Available at: https://www.sleepassociation.org/sleep-disorders/sleepdeprivation. Accessed November 2, 2019.
25. Analyze Boston. 911 daily dispatch count by agency. Available at: https://data.boston.gov/dataset/911-dailydispatch-count-by-agency. Accessed May 22, 2019.
26. National Weather Service. Watch/warning/advisory criteria. Available at: https://www.weather.gov/box/ criteria. Accessed February 13, 2020.
27. Wellenius GA, Eliot MN, Bush KF, et al. Heat-related morbidity and mortality in New England: evidence for local policy. Environ Res. 2017;156:845-853.
28. Kingsley SL, Eliot MN, Gold J, Vanderslice RR, Wellenius GA. Current and projected heat-related morbidity and mortality in Rhode Island. Environ Health Perspect. 2016;124(4):460-467.
29. Lin S, Luo M, Walker RJ, Liu X, Hwang S-A, Chinery R. Extreme high temperatures and hospital admissions for respiratory and cardiovascular diseases. Epidemiology. 2009;20(5):738-746.
30. Gronlund CJ, Zanobetti A, Schwartz JD, Wellenius GA, O'Neill MS. Heat, heat waves, and hospital admissions among the elderly in the United States, 1992-2006. Environ Health Perspect. 2014;122(11):1187-1192.
31. Chandler SE. The effects ofsevere weather conditions on the incidence of fires in dwellings. Fire SafJ. 1982;5(1): 21 -27.
32. American Red Cross. Home fires: America's biggest disaster threat-frequently asked questions. Available at: https://www.redcross.org/content/dam/redcross/atg/PDF_s/Preparedness___Disaster_Recovery/Disaster_Preparedness/ Home_Fire/FireFAQs.pdf. Accessed February 13, 2020.
33. Turf battle over EMS calls heating up in Boston. Boston Herald. September 6, 2013. Available at: https://www.firehouse.com/home/news/11145157/bostonturf-battle-over-ems-calls-heats-up-firefighters-cryingfoul. Accessed November 26, 2019.
34. Barbato J. Areal parameters of the sea breeze and its vertical structure in the Boston Basin. Bull Am Meteorol Soc. 1978;59(11):1420-1431.
35. Xiang J, Bi P, Pisaniello D, Hansen A. Health impacts of workplace heat exposure: an epidemiological review. Ind Health. 2014;52(2):91-101.

DETAILS

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Vaccine Communication as Weaponized Identity Politics

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ABSTRACT (ENGLISH)

The World Health Organization declared vaccine misinformation-and consequent declines in vaccination rates-as a top health threat of2019 (http:// bit.ly/37G2NWP). In 2018, there have been measles outbreaks in 98 countries worldwide (including 1717 cases in Russia from January to June 2018-a 13-fold increase from the previous year; http://bit.ly/2S1upit), resulting in more than 140 000 deaths (http://bit.ly/2S0Pbin). Deaths from vaccine-preventable illnesses may be attributed primarily to the spreading phenomenon of vaccine refusal.

FULL TEXT

The World Health Organization declared vaccine misinformation-and consequent declines in vaccination rates-as a top health threat of2019 (http:// bit.ly/37G2NWP). In 2018, there have been measles outbreaks in 98 countries worldwide (including 1717 cases in Russia from January to June 2018-a 13-fold increase from the previous year; http://bit.ly/2S1upit), resulting in more than 140 000 deaths (http://bit.ly/2S0Pbin). Deaths from vaccine-preventable illnesses may be attributed primarily to the spreading phenomenon of vaccine refusal.

"ASTROTURFING" VACCINE REFUSAL

Typically framed as grassroots opposition, vaccine refusal has been increasingly linked with populist political rhetoric and attempts to undermine scientific authority.1 Concurrently, recent evidence has linked actors in the "vaccine debate" to state-sponsored interests-especially those associated with Russian interference in the 2016 US elections.2 We found that one set ofRussian trolls was more than 22 times more likely to tweet about vaccines than was the average Twitter user. An in-depth analysis of hundreds of these troll-generated tweets indicated that the trolls were "playing both sides" of the vaccine debate, seemingly to promote political discord on the topic. Consequently, what appears to be popular support is at least partially "Astroturf ' (i.e., artificial tweets, masquerading as grassroots advocacy).

Since our article appeared, Twitter has released several data sets pertaining to election integrity (http://bit.ly/318bdno). In this issue of AJPH, the work by Walter et al. (p. 718) draws on these new data to shed further light on the rationales underlying Russian troll activity, providing welcome new insights. Russian trolls used tweets about vaccination to construct "thematic personas" that enabled them to masquerade as US citizens taking specific political and other controversial stances, including presenting themselves as African American and promoting Black Lives Matter. This inclusion ofan African American persona seems to have explicitly targeted underlying racial tensions in US society, in part by playing on stereotypes about African Americans. Moreover, the

creation of that persona, in a time of significant racialized division, seems designed to fuel animosity with other stereotyped personas, such as the "pro-Trump" persona.

Evidence that vaccine content may be used to signal credibility and to create more "believable" personas reflects racialization of the vaccine debate that may or may not be accurate. Although lower levels of trust in government pertaining to vaccination and health care in general are long standing,3 these attitudes are not spread uniformly.4 Thus, the success of these trolling operations depends on how realistic these African American personas appear within the diverse African American community.

WEAPONIZED RACE RELATIONS

Unfortunately, stereotyped trolling campaigns may constitute a self-fulfilling prophecy. Decades of Kremlin-backed disinformation campaigns have targeted racial cleavages to promote internal strife and undermine Western values, both domestically and overseas, reinforcing the stereotypes that they sought to exploit. For example, on July 17, 1983, the Soviet KGB launched a disinformation campaign alleging that a mysterious illness-AIDS- was the result of US bioweapons experiments.5 Although initially created to discredit US influence in the Third World, this conspiracy theory ultimately morphed into an allegation of the US government using HIV for racial genocide of African Americans and Africans.

Public beliefs about the Ebola outbreak in 2014, and today's outbreak in the Democratic Republic of the Congo, have shaped more recent iterations of conspiracy theories, including recent Russian propaganda that accused Ebola treatment workers in the Democratic Republic of the Congo of spreading, rather than treating, the disease in a bid to depopulate the continent. This disinformation has led to direct attacks on these workers, increasing the likelihood of a deadly outbreak.

Thus, Russian attempts to weaponize complex racial attitudes and link them to vaccination are simply the latest in a series ofoperations designed to increase existing tensions in the United States and in the West more broadly. History has shown that simply debunking these conspiracy theories has not been effective in stopping their spread. Rather, as our previous work has shown, culturally sensitive communication using trusted intermediaries may be effective in increasing vaccination rates among this and other vulnerable populations.

WEAPONIZED POLITICAL DISCOURSE

Russian troll activity has demonstrated the extent to which the mainstream political discourse has infused vaccine policy. Until recently, childhood vaccination has been a relatively nonpartisan issue, with political polarization focused on very specific cases (e.g., the introduction of the Gardasil human papillomavirus vaccine).6 However, recent years have seen an uptick in political polarization on generalized vaccine opposition. For example, we found that vaccine opponents aligned themselves with candidate Donald J. Trump in the leadup to the 2016 presidential election and continued to express support for him on Twitter when rumors broke that he was considering appointing Robert F. Kennedy Jr. to lead a vaccine safety commission.7 Russian trolls seem to have exploited these changes opportunistically, aligning their discourse with the followers of different candidates in the 2016 US presidential elections.

Walter et al. found that, in their attempts to promote discord, Russian trolls used tweets about vaccination to build convincing personas both supporting and opposing specific candidates who had made public statements about vaccines. Although presidential elections are somewhat adversarial by nature, the 2016 election was considered to be especially partisan, and Russian interference in this election is widely considered to have been the primary aim of the Internet Research Agency's trolling campaign. The presence oftweets expressing consistent vaccine opposition by "pro-Trump" personas and tweets expressing support for vaccination by "antiTrump" personas therefore highlights the extent to which Russian trolls perceive vaccination becoming an increasingly partisan issue and, indeed, foster that change. Vaccine opposition may become entrenched as part of the political platforms of one of the major US political parties, as it has in populist movements worldwide. This would move a fringe position into the political mainstream and polarize a public health challenge, as has occurred with gun violence reduction and climate policies.

The sophistication of this Russian information operation sheds light on important aspects of vaccine

communications: targeting and tailoring communication. Best practice for health communicators is to use messages designed to speak to specific communities' needs, and it appears that foreign governments have become increasingly adept at identifying and targeting messages to vulnerable communities. This suggests a degree of cultural awareness that could be enabled only by significant financial and educational resources.

By contrast, many domestic public health agencies' communication operations are woefully underresourced and understaffed. These findings therefore point to an urgent need to invest in public health communication. There is a clear need for funding for research focused on how to effectively counter disinformation on social media.

Adversaries, such as Russian-backed disinformation campaigns, aim to promote discord and confusion and therefore are free to experiment with multiple, often conflicting, narratives in pursuit of their goals. By contrast, public health communications must remain evidence based while imparting meaningful and compelling messages. Constructing these messages requires both scientific guidance and sociocultural expertise. These online challenges also speak to the compelling need for public health agencies to use more traditional partners to promote vaccine acceptance. From health care providers, community organizations, faith communities, and others, we must ensure trusted, reciprocal, persuasive communications to strengthen vaccine acceptance and protect the health of our communities. ÂfPU

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CONTRIBUTORS

D.A. Broniatowski wrote the first draft of the editorial. S. C. Quinn, M. Dredze, and A. M. Jamison critically revised the editorial.

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CONFLICTS OF INTEREST

M. Dredze holds equity in Sickweather, Inc. and has received consulting fees from Bloomberg LP and Good Analytics, Inc. These organizations did not have any role in the study design, data collection and analysis, decisionto publish, orpreparation of the editorial.

Sidebar

Correspondence should be sent to David A. Broniatowski, Associate Professor, 800 22nd St. NW #2700, Washington, DC 20052 (e-mail: broniatowski@gwu.edu). Reprints can be ordered at http://www.ajph.org by clicking the "Reprints" link.

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References

REFERENCES

1. Kennedy J. Populist politics and vaccine hesitancy in Western Europe: an analysis of national-level data. EurJ Public Health. 2019;29(3):512-516.
2. Broniatowski DA, Jamison AM, Qi S, et al. Weaponized health communication: Twitter bots and Russian trolls amplify the vaccine debate. Am J Public Health. 2018; 108(10):1378-1384.
3. Freimuth VS, Jamison AM, An J, Hancock GR, Quinn SC. Determinants of trust in the flu vaccine for African Americans and Whites. Soc Sci Med. 2017; 193:70-79.
4. Quinn SC, Jamison A, An J, Freimuth VS, Hancock GR, Musa D. Breaking down the monolith: understanding flu vaccine uptake amongAfricanAmericans. SSM Popul Health. 2017;4:25-36.
5. Boghardt T. Soviet Bloc intelligence and its AIDS disinformation campaign. Stud Intell. 2009;53(4):1-24.

6. Kahan DM. A risky science communication environment for vaccines. Science. 2013;342(6154):53-54.
7. Dredze M, Wood-Doughty Z, Quinn SC, Broniatowski DA. Vaccine opponents' use of Twitter during the 2016 US presidential election: implications for practice and policy. Vaccine. 2017;35(36): 4670-4672.

DETAILS

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NIOSH: A Short History

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ABSTRACT (ENGLISH)

The National Institute for Occupational Safety and Health (NIOSH) was established in Section 22 of the Occupational Safety and Health (OSH) Act of 1970 and placed in the Department of Health and Human Services (HHS).1 Introduced by Senator Jacob Javits as an amendment to the OSH Act, the idea was that a research program, separate and independent from the regulatory agency, would be able to generate objective scientific research findings in the field of occupational safety and health.2 The Act gave NIOSH authority to conduct research in a broad range of occupational safety and health topics.3 Among the research responsibilities are conducting studies of psychological factors and industrywide exposures, developing exposure criteria for toxic materials and harmful physical agents, and responding to a request from an employer or employee to perform a health hazard evaluation. The Act also provided NIOSH with "right-of-entry" authority to make inspections and question employers and employees.4 Finally, the Act makes clear that NIOSH is to produce research that can enable the Occupational Safety and Health Administration (OSHA) to mulate and health standards. NIOSH was also directed to conduct education programs, directly or through grants, to provide an adequate supply of safety and health specialists to carry out the purposes of the OSH Act and on the proper use of safety and health equipment.5

FULL TEXT

The National Institute for Occupational Safety and Health (NIOSH) was established in Section 22 of the Occupational Safety and Health (OSH) Act of 1970 and placed in the Department of Health and Human Services (HHS).1 Introduced by Senator Jacob Javits as an amendment to the OSH Act, the idea was that a research program, separate and independent from the regulatory agency, would be able to generate objective scientific research findings in the field of occupational safety and health.2 The Act gave NIOSH authority to conduct research in a broad range of occupational safety and health topics.3 Among the research responsibilities are conducting

studies of psychological factors and industrywide exposures, developing exposure criteria for toxic materials and harmful physical agents, and responding to a request from an employer or employee to perform a health hazard evaluation. The Act also provided NIOSH with "right-of-entry" authority to make inspections and question employers and employees.4 Finally, the Act makes clear that NIOSH is to produce research that can enable the Occupational Safety and Health Administration (OSHA) to mulate and health standards. NIOSH was also directed to conduct education programs, directly or through grants, to provide an adequate supply of safety and health specialists to carry out the purposes of the OSH Act and on the proper use of safety and health equipment.5

1970-1979

The first decade was busy for NIOSH. In 1971, NIOSH published its first Criteria for a Recommended Standard on asbestos and the first Toxic Substances List. In 1974, the NIOSH/ OSHA Standards Completion Program became the basis for 387 new OSHA standards. In 1975, the first Current Intelligence Bulletins were published. Grants for the first nine Education and Research Centers were awarded in 1977, later doubling to 18 by 2020. In 1978, the Pocket Guide to Chemical Hazards first published, and updates to the Pocket Guide continue to be published to this day.

1980-1989

As the service sector grew in the 1980s, NIOSH led pioneering research on emerging safety and health concerns. These included indoor environmental quality in office buildings, job-related musculoskeletal injuries, workplace violence, latex allergy among health care workers, and risks ofoccupational exposures to bloodborne pathogens. In 1986, NIOSH released a strategic plan for the top-10 work-related diseases and injuries called the Proposed National Strategies for the Prevention of Leading Work-Related Diseases and Injuries. Also in 1986, NIOSH launched a collaboration with the United Nations' International Labor Organization Program on Chemical Safety to establish peer-reviewed hazard communication cards (International Chemical Safety Cards).

1990-1999

As the workplace changed, NIOSH continued to adapt its research. In 1990, NIOSH awarded grants to establish its first Centers for Agricultural Health and Safety, which now number 11 centers across the United States. NIOSH issued a Current Intelligence Bulletin in 1991 on secondhand smoke in the workplace, which had become a major indoor air quality issue. In the mid-1990s, then-NIOSH director, Linda Rosenstock, MD, launched the National Occupational Research Agenda in response to an effort in Congress to eliminate NIOSH. This public-private partnership among industry, labor, and government to develop research priorities is now in its third decade. The first publication to represent this new model for conducting research through partnership was the NIOSH-issued Engineering Control Guidelines for Hot Mix Asphalt Pavers published in 1997. Responding to a surge in violence against workers, in 1996, NIOSH issued findings and recommendations for preventing workplace homicides and assaults. In 1997, NIOSH research identified a new lung disease in nylon flocking industry workers.6 That same year, authority for conducting mine safety research was transferred to NIOSH after the US Bureau of Mines was closed. This brought into NIOSH specialists in mine safety engineering and two new sites in Pittsburgh, Pennsylvania, and Spokane, Washington. As the 1990s ended, NIOSH published recommendations for prevention of allergic reactions to natural rubber latex in the workplace, made recommendations for preventing job-related stress, and recommendations for preventing work-related needlestick injuries.

2000-2009

NIOSH began the 2000s with a new program conducting occupational radiation dose reconstructions for atomic weapons industry workers with cancers who filed claims for compensation under the Energy Employees Occupational Illness Compensation Program Act of 2000. In response to the September 11,2001, terrorist attacks in New York City, at the Pentagon, and near Shanksville, Pennsylvania, NIOSH provided technical assistance for rescue and recovery workers. In 2002, NIOSH scientists published their research findings about a new lung disease found in workers at a series of microwavepopcorn plants.7 In 2004, NIOSH launched its Research-toPractice initiative to speed the adoption ofnew research findings into practice to benefit workers. Also in 2004, NIOSH began what is now called the Total Worker Health Program, championing policies, programs, and practices that integrate

protection from work-related safety and health hazards with promotion ofinjuryand illness-prevention efforts to advance worker well-being. In 2006, NIOSH commercialized two NIOSH-designed field methods to help first responders, public health officials, and remediation workers quickly detect the presence of methamphetamine on various environmental surfaces. In 2007, NIOSH took the first step in engaging an online community by launching the NIOSH Science Blog. Since then, NIOSH has expanded to developing smartphone apps on various topics and is actively engaged on social media.

2010-PRESENT

The decade began as NIOSH partnered with multiple government agencies to provide technical assistance during the Deepwater Horizon disaster in the Gulf of Mexico. In 2011, the Congress authorized the World Trade Center Health Program, a federal health plan that provides medical care to responders and community survivors of the September 11, 2001, terrorist attacks, naming the NIOSH director the administrator of the World Trade Center Health Program. To date, more than 100 000 responders and survivors have become members of the World Trade Center Health Program. In 2016, NIOSH published revised criteria for a standard on occupational exposure to heat and hot environments. As the decade ends, NIOSH is turning its attention to various future of work issues involving sensor technology, collaborative robots, exoskeletons, artificial intelligence, and advanced manufacturing.

FUTURE

NIOSH continues to carry out research on emerging workplace hazards, respond to requests for health hazard evaluations, conduct intervention studies, and publish authoritative recommendations. In the five decades since the passage of the OSH Act, NIOSH has grown. NIOSH now has facilities and laboratories in six states and the District of Columbia with a staff of nearly 2000 researchers and support personnel. In the last 50 years, the jobs workers do, the hazards they face, and the way their work is organized have also changed. After 50 years, one can take the measure of an organization by asking how well it has carried out its mission: Has it been sufficiently flexible to meet inevitable social, economic, and technological changes? Has it provided the benefits to workers that it was intended to provide? Is it well-positioned to meet ongoing workplace changes that the next 50 years will bring? After five decades of NIOSH history, the answer is yes to all three questions.

John Howard, MD

CONFLICTS OF INTEREST

The author has no conflicts of interest.

Sidebar

ABOUT THE AUTHOR

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References

REFERENCES

1. 29 USC §671.

2. S. Rep. No. 91-1282, at 57.

3. 29 USC §669.

4. 29 USC §669(c).

5. 29 USC §670.

6. Centers for Disease Control and Prevention. Chronic interstitial lung disease in nylon flocking industry workers-Rhode Island, 1992-1996. MMWR Morb Mortal Wkly Rep. 1997;46(38):897-901.

7. Kreiss K, Gomaa A, Kullman G, Fedan K, Simoes EJ, Enright PL. Clinical bronchiolitis obliterans in workers at a microwave-popcorn plant. N Engl J Med. 2002;347(5):330-338.

DETAILS

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US Black–White Mortality Disparities: Still Unequal, Still Unjust

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ABSTRACT (ENGLISH)

Cardiovascular disease (CVD) has been the number one cause of death in the United States for at least the past four decades, killing a total of 647 457 people in 2017 alone.1 Although the overall rates of CVD mortality have been in decline for the total US population since 1980, differences between Black and White American rates have remained.2 For example, crude rates for all CVD mortality were approximately 30% higher for non-Hispanic Black persons compared with non-Hispanic White persons as recently as 2014 and have been consistent since at least 2000.2

In 2003, the US National Academies of Sciences, Engineering, and Medicine published the groundbreaking Institute of Medicine study on racial/ethnic health disparities in the United States, Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care,3 which detailed racial/ethnic health disparities across a wide spectrum of morbidities, mortality, and health care services. This report helped shine a bright light on the pervasiveness of the health disadvantages faced by racial/ethnic minorities in the United States and served to promote increased focus and funding on research efforts as well as policy solutions at the national and state levels to address these inequalities. Seven years after the Institute of Medicine report, in 2010 the US Congress passed the Patient Protection and Affordable Care Act, which, in part, aimed to reduce morbidity and mortality by expanding access to health care. Within this context, questions remain about the relative contribution ofvarious risk factors in explaining the observed Black- White CVD mortality difference, such as socioeconomic characteristics, health behaviors, and access to health care.

FULL TEXT

Cardiovascular disease (CVD) has been the number one cause of death in the United States for at least the past four decades, killing a total of 647 457 people in 2017 alone.1 Although the overall rates of CVD mortality have been in decline for the total US population since 1980, differences between Black and White American rates have

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NEW FINDINGS

Data reported by Tajeu et al. (p. 696) in this issue of AJPH provide important new insights into the state of Black-White CVD mortality rate differences in the United States. The data are from a large, prospective study of more than 30 000 non-Hispanic Black and White Americans enrolled from 2003 through 2007, with mortality follow-up through 2017. Undertaking such a large study is a challenging endeavor, and the authors should be commended for conducting such a methodologically rigorous study.

The main findings are important for two reasons. First, the authors showed that after adjustment for many individuallevel socioeconomic, psychosocial, behavioral, and CVD risk factors, CVD risk was fully attenuated for non-Hispanic Black individuals aged 65 years or older but that significant risk, 58% higher risk, remained for individuals between 45 and 64 years old. Second, they showed that 21% and 38% of the higher mortality risk for non-Hispanic Black participants, aged 45 to 64 years and 65 years or older, respectively, was attributable to differences in socioeconomic conditions. These findings suggest that a sizable portion of the differences in CVD mortality between non-Hispanic Black and White Americans could potentially be resolved through improvements in the socioeconomic conditions of non-Hispanic Black Americans.

IMPLICATIONS

The findings reported by Tajeu et al. provide insights into the scale of CVD mortality disparities faced by non-Hispanic Black individuals and the extent to which potentially modifiable factors contribute to them. At the same time, the findings raise new, unsettling questions about the persistence of socioeconomic inequalities giving rise to mortality disparities and what can be done in the current political environment to alleviate them. Despite the passage, implementation, and success ofthe Affordable Care Act in expanding health care for millions of Americans and reducing overall health care costs,4 the law has been weakened by the removal of the individual mandate for health care insurance by Congress in 2018. The law also remains under attack in the courts from the Texas v Azar, No. 19-10011 (5th Cir., filed Dec. 18, 2019) case, which charges that the law is unconstitutional. Other efforts to reduce programs aimed at improving socioeconomic conditions, such as food stamps,5 educational opportunities,6 and efforts to increase the national minimum wage,7 are also intensifying.

The findings from Tajeu et al. illustrate once again the persistence of CVD mortality disparities, which, combined with the apparent lack ofpolitical will required to solve them, should inspire moral outrage among all Americans, regardless ofpartisan affiliations. The question is, Will it? And, if so, will it be enough to create change? ÂfPU

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CONFLICTS OF INTEREST

The author has no conflicts of interest to disclose.

Sidebar

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References

REFERENCES
1. Heron M. Deaths: leading causes for 2017. Natl Vital Statistics Rep. Hyattsville, MD: National Center for Health Statistics; 2019;68(6):1-77.
2. Sidney S, Quesenberry CP Jr, Jaffe MG, et al. Recent trends in cardiovascular mortality in the United States and public health goals. JAMA Cardiol. 2016; 1(5):594-599.
3. Institute of Medicine. Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care. Washington, DC: National Academies Press; 2003.
4. Martin AB, Hartman M, Washington B, Catlin A; The National Health Expenditure Accounts Team. National health care spending in 2017: growth slows to post-Great Recession rates; share of GDP stabilizes. Health Aff (Millwood). 2019;38(1):.
5. Picchi A. Total Trump food-stamp cuts could hit up to 5.3 million households. December 10, 2019. Available at: https://www.cbsnews.com/news/ trump-administration-says-food-stampsneed-reform-advocates-say-millionswill-suffer. Accessed February 4, 2020.
6. Fichtenbaum R. From the President: the impact of Trump's budget on higher education. Academe. May-June 2017.Available at: https://www. aaup.org/article/president-impacttrumps-budget-higher-education#. XjmtJ2hKh3g. Accessed February 4, 2020.
7. Cengiz D, Dube A, Lindner A, Zipperer B. The Effect of Minimum Wages on Low-Wage Jobs: Evidence From the United States Using a Bunching Estimator. Cambridge, MA: National Bureau ofEconomic Research; 2019. Working Paper Series, No. 25434.

DETAILS

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Legal Liability for Returning Firearms to Suicidal Persons Who Voluntarily Surrender Them in 50 US States

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ABSTRACT (ENGLISH)

Temporary transfers of firearms from suicidal persons is a strategy to reduce the incidence of suicide deaths. We discuss a barrier to the effective operation of voluntary temporary firearm transfer laws: the dearth of guidance on the liability for returning firearms to persons who voluntarily surrender them. We examine the laws of all 50 US states that regulate temporary surrenders of firearms and evaluate whether any provisions govern liability for returning temporarily surrendered firearms. Although 14 states create background check exceptions to permit temporary transfers of firearms from an owner to family, friends, retailers, or law enforcement, no states prescribe procedures for returning those firearms.ability for returning the firearms to people who voluntarily surrendered them. We recommend amending state laws to clarify the process and liability for returning temporarily surrendered firearms to the original owner. Such amendments would be intended to mitigate the potential chilling effect that lack of clarity and presumption of liability may impose on efficiently reducing firearm access to protect firearm owners at risk for suicide. (Am J Public Health. 2020;110: 685-688. doi:10.2105/AJPH. 2019.305545)

FULL TEXT

Headnote

Temporary transfers of firearms from suicidal persons is a strategy to reduce the incidence of suicide deaths. We discuss a barrier to the effective operation of voluntary temporary firearm transfer laws: the dearth of guidance on the liability for returning firearms to persons who voluntarily surrender them. We examine the laws of all 50 US states that regulate temporary surrenders of firearms and evaluate whether any provisions govern liability for returning temporarily surrendered firearms.

Although 14 states create background check exceptions to permit temporary transfers of firearms from an owner to family, friends, retailers, orlaw enforcement, no states prescribe procedures for returning those firearms.ability for returning the firearms to people who voluntarily surrendered them.

We recommend amending state laws to clarify the process and liability for returning temporarily surrendered firearms to the original owner. Such amendments would be intended to mitigate the potential chilling effect that lack of clarity and presumption of liability may impose on efficiently reducing firearm access to protect firearm owners at risk for suicide. (Am J Public Health. 2020;110: 685-688. doi:1 0.2105/AJPH. 2019.305545)

Suicide, often by firearm, is a major public health problem. Suicides claimed 47 173 lives in the United States in 2017, and 50% used a firearm.1 When comparing people in firearm-owning households to people not in firearm-owning households, there was no difference in terms of rates of mental illness or suicidal ideations.2,3 The risk of completed suicide is especially high for people in firearm-owning households because such individuals have immediate access to lethal means.2 Numerous medical and injuryprevention organizations have highlighted lethal means restriction as an effective intervention to reduce suicides by firearms.4

Barber and Miller noted that a lethal means-restriction strategy to reduce suicides rests on four observations.5 First, suicidal crises tend to be short lived and quickly contemplated. Second, the means generally depend on availability and access. Third, the lethality of the method available during an attempt plays a pivotal role in whether the person survives. Fourth, a large percentage ofthose who survive a nonfatal suicide attempt generally do not proceed to die by suicide. Thus, "helping people survive periods of acute suicidal risk by reducing their access to highly lethal methods is likely to help many people survive in both the short and long term."5(S265)

Firearms are a means ofsuicide requiring minimal preparation and planning. Because of the lethality of firearms, there is no chance to turn back once someone pulls the trigger.5 When a lethal method of suicide is unavailable, a person may delay or abandon their attempt.5,6 Reducing access to lethal means, such as firearms, during periods of suicidal ideation can save lives.5 Laws facilitating temporary transfer of firearms from persons at risk for harming themselves is one policy approach for saving lives. McCourt et al. focused on temporary transfers of firearms from suicidal individuals to family and friends, law enforcement, and firearm retailers as a risk mitigation tool and the barriers that state laws requiring background checks may pose to temporary transfers.7

We focus on another important source of possible concern for key players implementing temporary transfer

strategies: the rules and risks surrounding the return of firearms that were temporarily surrendered by individuals at risk for suicide death (i.e., transfer-back). We examine the key questions regarding liability for returning firearms to persons who temporarily surrender them, discuss the few existing relevant laws, and propose key areas to address in legislation.

TEMPORARY TRANSFER-RELATED LAWS

Temporary transfer laws are an increasingly prevalent strategy to limit the availability offirearms to persons at risk for suicide, as are extreme risk protection orders (ERPOs). ERPOs involve involuntary relinquishment of firearms through a court order, whereas temporary transfer laws facilitate voluntary firearm transfers. Both strategies attempt to temporarily keep firearms away from an at-risk person. The advantage of temporary transfers is that the removal can be accomplished voluntarily and informally without the more onerous burden of a concerned family member or other petitioner having to go to court to obtain an order. We focus on barriers to the effective operation of temporary transfer laws.

McCourt et al. noted how background check requirements can pose obstacles to the temporary transfer of firearms for suicidal individuals.7 Background checks are used to identify persons potentially prohibited from owning a firearm.8 Appendix A (available as a supplement to the online version of this article at http://www.ajph.org) summarizes all 50 states' background check requirements and temporary transfer-related laws as ofJuly 2019. Currently 20 states and the District of Columbia require background checks for a transferbetween private parties.8 Twelve states and the District of Columbia require background checks at the time of transfer.8 The other eight states require the transferee to have a permit, meaning a background check was conducted before transfer.8 In these laws and throughout this commentary, "transferor" refers to the person transferring the firearm, and "transferee" refers to the individual or organization receiving the firearm.

Of the jurisdictions that currently require background checks or permits, 14 states have exceptions that allow firearm owners to voluntarily transfer their firearm to another during a crisis. Persons who may temporarily hold the firearm for the at-risk person range from immediate family members to anyone at all. Some states allow transfers only to prevent "imminent death or serious physical injury."9 Maximum transfer times for temporary transfers vary from 1 to 30 days.10,11

There is a lack of evidence directly analyzing the use and effectiveness of temporary transfer laws in reducing suicides. Data on the effectiveness of having suicidal individuals relinquish their firearms in periods of crisis do exist. Swanson et al. undertook a study to determine the effectiveness of Connecticut's ERPO laws in preventing suicides.12 They determined that 21 individuals who had their firearms seized by an ERPO had later died from suicide, with 6 dying by gunshot. Based on fatality rates for different suicide methods, they extrapolated that these 21 deaths represented 142 suicide attempts. They determined that if firearms had been available to these individuals and used in more of the attempts, more ERPO individuals would have died by suicide. Their model estimated that approximately one suicide was averted for every 10 to 11 gun seizures.12

TEMPORARY TRANSFER CONCERNS AND CONFUSIONS

A large issue with most temporary transfer laws is that they do not clearly define what, if any, liability attaches to the transferee for transfer-back of firearms after the at-risk individual's crisis is over. This lack of clarity and the confusion surrounding liability is a potentially large obstacle to the willingness of key persons and entities to store firearms or aid in temporary transfers of firearms to prevent suicides. Although Congress has limited the liability of firearms manufacturers and dealers for harms committed with their products under the Protection of Lawful Commerce in Arms Act of 2005, there is no law limiting the liability of good Samaritans and key entities that temporarily hold firearms for at-risk persons to reduce the risk of suicide.

Law enforcement and firearm retailers can be effective allies in reducing suicides by storing at-risk owners' firearms outside their home. Runyan et al. surveyed law enforcement officers and firearm retailers in eight Western states about their willingness to offer voluntary, temporary storage for suicidal individuals. They found that 77% of law enforcement officers and 67% of firearm retailers were willing to provide storage for firearm owners concerned about their own mental health.13

Pierpoint et al. investigated the barriers firearm retailers, in the same eight states, faced in providing firearm storage for suicidal individuals.14 They found that 58% of the firearm retailers surveyed cited federal laws as an obstacle to storing firearms for others, and 25% cited state laws. Around half of the retailers surveyed were not currently providing temporary storage, of whom 73% cited concerns of liability in returning the firearm, 78% cited liability in storing the firearm, and 81% cited concerns about determining the safety of returning firearms.14

Another study, by BrooksRussell et al., surveyed law enforcement agencies in the same states about barriers to providing firearm storage.15 State or federal laws were not cited by most agencies as a barrier to storage.15 However, approximately one quarter of the agencies did not provide temporary storage: 71% cited legal liability concerns in storing the firearms, 74% cited concerns of legal liability in returning the firearms, and 69% cited concerns about determining the safety of returning the firearms.15

State laws facilitating temporary transfers of firearms from suicidal individuals omit procedures for returning these firearms -and whether the person or entity temporarily holding the firearm incurs liability for returning the firearm to the person who surrendered it. State statutes are silent regarding liability for returning firearms to persons who temporarily surrendered them. Clarifying the process and legal liability surrounding the return oftemporarily surrendered firearms is an essential step to addressing a potentially major impediment to temporary transfers as a tool to prevent suicide.

LAWS AND CASES ABOUT TRANSFERBACK LIABILITY

To identify potentially relevant sources on the process of and potential liability for the return of temporarily transferred firearms to persons at risk for suicide, we conducted searches on the legal database Westlaw in July 2019 (see the box on page 687). Search terms are given in Appendix B (available as a supplement to the online version of this article at http://www.ajph.org).

Statutory Law

Many states' temporary transfer laws specify that the transfer can only be for a set amount of time. For example, Colorado's temporary transfer law allows loans of firearms for 72 hours or less.16 As McCourt et al. noted, it is not clear what occurs at the end ofthis 72-hour period, whether the period can be repeated, or whether the firearm must be returned automatically.7 Suicide attempts may occur anywhere from less than 10 minutes to weeks or months from the initial suicidal ideation.17 Thus, Colorado's statute may be problematic because a crisis may not resolve within the 72-hour period, and returning the firearm could pose a risk.

Of the temporary transfer laws that exist, only Colorado specifically addresses liability during the temporary transfer period. CRS 18-12-112(6)(h) allows temporary transfers of firearms to any person for less than 72 hours.16 The provision further warns that "a person who transfers a firearm pursuant to paragraph (h) may be liable for damages proximately caused by the transferee's subsequent unlawful use of the firearm. "16 This language refers to the liability ofthe person who decides to voluntarily surrender the firearm, rather than the person who receives and temporarily holds the firearm. The provision is silent on the process for returning the firearm and what liability attaches to the person providing temporary storage upon return of the firearm.

Among the states with temporary transfer laws, no state has legal provisions explaining the liability of persons who temporarily store the firearm and who subsequently return the firearm. The laws focus on criteria for who may receive the firearms, rather than procedures and liability for their return. For example, Oregon law defines a "transferor" as someone who intends to deliver a firearm to a transferee and says that during a temporary transfer, the transferor must have "no reason to believe the transferee is prohibited from possessing a firearm or intends to use the firearm in the commission of a crime."9 In Washington State, the temporary transfer law requires that the firearm not be transferred to a prohibited person and requires the temporary storage provider to return the firearms once the suicidal crisis 18 passes.

Case Law

Case law also generally does not address transfer-back liability for temporarily transferred firearms. Most case law involves issues involving confiscated firearms pursuant to court orders or arrests and petitions for the return of those seized firearms. A few cases involve negligence lawsuits against persons or entities for insecurely storing their

firearms or against a law enforcement employer for returning a service firearm following psychological evaluations. Although no case specifically addressed transfer-back liability, there are interesting examples of situations involving return or transfer of weapons. For example, in Cygan v. City of New York, the wife of a police officer who died by suicide sued his employer for negligence in returning his service revolver to him following a psychological evaluation.19 The court determined that the employer was not liable: the suicide occurred 18 months after the evaluation, the evaluation was prompted by paranoia rather than suicidal behavior, the surrendered weapon was returned after the employee was cleared, and the returned firearm was not the cause of the officer's suicide.19
In Com. v. Morelli the court determined that a firearm owner seeking return of confiscated firearms must produce evidence of lawful entitlement to possess the firearms and no disqualifying factors such as a felony conviction.20
In Chow v. State the court addressed a charge of illegally transferring a regulated firearm between two privateparties.21 The court determined that temporary transfers were exempt from general transfer requirements. Further, the court interpreted the relevant law to mean that parties involved in a transfer could be convicted under the provision only if they knew that the person they were transferring the firearm to was prohibited from owning the firearm or that they were directly violating the transfer procedures.21

RECOMMENDATIONS FOR CLARIFYING LIABILITY

For temporary transfer laws to work as intended, legislatures should address uncertainties about the procedures for the return of temporarily surrendered firearms and the potential liability faced by persons or entities who temporarily store firearms and then return them.
No state temporary transfer law specifically defines the liability faced by persons for returning firearms to the at-risk individual after the crisis is over or after the statutory period has expired. Many states' temporary transfer laws appear to hold transferors liable, and in violation ofstate law, if they transfer firearms to a prohibited person. But it is unclear whether the person or entity who temporarily holds the firearm for a suicidal person falls under the definition of "transferor" upon return of the firearm to the owner.
A model law for temporary transfers must explicitly state whether a person or entity who temporarily stores a firearm for a person at risk for suicide faces liability for returning the firearm and under what circumstances. Legal clarifications should specifically define the procedures governing the return ofa temporarily surrendered firearm and provide a release of liability for the individual or entity temporarily holding the firearm if procedures are followed. Requiring a mental health evaluation or interview with law enforcement before returning a firearm may aid in decreasing suicide risk but could also discourage individuals from transferring their firearms for fear of not having them returned.
Model legislation should also address extensions of the temporary transfer period if the person temporarily providing storage determines that owners are still a threat to themselves or have become prohibited persons. The law could provide that such a determination requires surrendering the firearm to the nearest law enforcement for a more extensive hearing process to address the risks and rights at stake.

CONCLUSIONS

There are widespread gaps and silences in laws regarding the liability associated with the return of firearms that were temporarily surrendered to reduce access to lethal means for persons at risk for suicide. Although nearly all would agree that temporarily holding a firearm for a potentially suicidal person should occur, regardless of specific legislation, the more difficult issue is if and when that firearm should be returned to the owner and the liability concerns surrounding that return. Surveys indicate that legal liability is a chilling factor for firearm retailers and law enforcement-key potential partners for temporarily holding firearms for persons at risk for suicide.14,15 Amending state laws to clarify the procedure and liability for returning temporarily surrendered firearms can help address a barrier to the effective operation ofthis legal strategy for saving lives. We call attention to a potentially important barrier to effective operation of temporary transfer laws. We note that substantially more empirical work is needed on other unanswered questions, such as how often temporary transfers occur, their effect on reducing suicides, and whether firearm owners would be more likely to turn to law enforcement or retailers for storage than family and friends.

CONTRIBUTORS

M.J. Gibbons had full access to all study data and takes responsibility for the integrity of the data and the accuracy of the data analysis; she drafted the article and provided administrative and material support. M. D. Fan, A. Rowhani-Rahbar, and F. P. Rivara supervised the study. All authors contributed to the concept and design of the study; data acquisition, analysis, or interpretation; and critical revision of the article.

CONFLICTS OF INTEREST

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Sidebar

ABOUT THE AUTHORS

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References

REFERENCES

1. Centers for Disease Control and Prevention. Web-based Injury Statistics Query and Reporting System (WISQARS). Available at: https://www. cdc.gov/injury/wisqars. Accessed June 1, 2019.

2. Miller M, Barber C, Azrael D, Hemenway D, Molnar BE. Recent psychopathology, suicidal thoughts and suicide attempts in households with and without firearms: findings from the National Comorbidity Study Replication. Inj Prev. 2009;15(3):183-187.

3. Ilgen MA, Zivin K, McCammon RJ, Valenstein M. Mental illness, previous suicidality, and access to guns in the United States. Psychiatr Serv. 2008;59(2): 198-200.

4. Bulger EM, Kuhls DA, Campbell BT, et al. Proceedings from the Medical Summit on Firearm Injury Prevention: a public health approach to reduce death and disability in the US. J Am Coll Surg. 2019;229(4):415-430.e12.

5. Barber CW, Miller MJ. Reducing a suicidal person's access to lethal means of suicide: a research agenda. Am J Prev Med. 2014;47(3 suppl 2):S264-S272.

6. Yip PS, Caine E, Yousuf S, Chang SS, Wu KC, Chen YY. Means restriction for suicide prevention. Lancet. 2012; 379(9834):2393-2399.

7. McCourt AD, Vernick JS, Betz ME, Brandspigel S, Runyan CW. Temporary transfer of firearms from the home to prevent suicide. JAMA Intern Med. 2017; 177(1):96-101.

8. Giffords Law Center to Prevent Gun Violence. Universal background checks. Available at: https://lawcenter.giffords. org/gun-laws/policy-areas/backgroundchecks/universal-background-checks/ #state. Accessed June 1, 2019.

9. Firearm transfers by unlicensed persons. ORS §166.435(a) (2017).

10. Cal. Penal Code §27880.

11. Possession and purchase of deadly weapons by persons prohibited; penalties. 11 Del. C. §1448B.

12. Swanson JW, Norko MA, Lin H-J, et al. Implementation and effectiveness of Connecticut's risk-based gun removal law: does it prevent suicides? Law Contemp Probl. 2017;80:179-208.

13. Runyan CW, Brooks-Russell A, Brandspigel S, et al. Law enforcement and gun retailers as partners for safely storing guns to prevent suicide: a study in 8 Mountain West States. Am J Public Health. 2017;107(11):1789-1794.

14. Pierpoint LA, Tung GJ, BrooksRussell A, Brandspigel S, Betz M, Runyan CW. Gun retailers as storage partners for suicide prevention: what barriers need to be overcome? Inj Prev. 2019;25(suppl 1): i5-i8.

15. Brooks-Russell A, Runyan C, Betz ME, Tung G, Brandspigel S, Novins DK. Law enforcement agencies' perceptions of the benefits of and barriers to temporary firearm storage to prevent suicide. Am J Public Health. 2019;109(2):285-288.

16. Col Rev Stat §§18-12-112(1), (6)(b)-(h).
17. Deisenhammer EA, Ing CM, Strauss R, Kemmler G, Hinterhuber H, Weiss EM. The duration of the suicidal process: how much time is left for intervention between consideration and accomplishment of a suicide attempt? J Clin Psychiatry. 2009;70(1):19-24.
18. Firearm sales or transfers-background checks-requirements-exceptions. RCW. §9.41.113(4).
19. Cygan v. City ofNew York, 165 A.D.2d 58, 60, 566 N.Y.S.2d 232, 233 (1991).
20. Com. v. Morelli, 55 A.3d 177, 180 (Pa. Commw. Ct. 2012).
21. Chow v. State, 393 Md. 431, 463, 903 A.2d 388, 407 (2006).

DETAILS

Subject:	Background checks; Mental health; Public health; Law enforcement; Amendments; Liability; Small arms; Firearm laws &regulations; Legal liability; State laws; Firearms; Fatalities; Suicide; Households; Suicides &suicide attempts; States
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Policy Changes and Child Blood Lead Levels by Age 2 Years for Children Born in Illinois, 2001–2014

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ABSTRACT (ENGLISH)

Objectives. To evaluate how lowering the blood lead level (BLL) intervention threshold affects childhood lead testing policy. Methods. We geocoded 4.19 million Illinois lead testing records (2001-2016) and linked to 2.37 million birth records (2001-2014), data on housing age, industrial emissions, and roads. We used multinomial logistic regression to determine predictors of BLLs of 10 micrograms per deciliter (μg/dL) or greater, 5 to 9 μg/dL, and 4 μg/dL. Results. We found that 2.2% of children had BLLs of 10 μg/dL or greater, 8.9% had BLLs of 5 to 9 μg/dL, and 5.7% had BLLs of 4 μg/dL. Pre-1930 housing was associated with more than 2- to 4-fold increased relative risk of BLLs above all thresholds. Housing built in 1951 to 1978 was associated with increased relative risk of BLLs of 5 to 9 μg/dL (relative risk ratio [RRR] = 1.14;95% confidence interval [CI] = 1.06, 1.21) but not with increased relative risk of BLLs of 10 μg/dL or greater (RRR = 0.99;95% CI = 0.84,1.16). At a given address, previous BLLs of 5 to 9 μg/dL or BLLs of 10 μg/dL or greater were associated with increased risk of BLLs of 5 to 9 μg/dL or BLLs of 10 μg/dL or greater among current occupants by 2.37- (95% CI = 2.20, 2.54) fold and 4.08- (95% CI = 3.69, 4.52) fold, respectively. Conclusions. The relative importance of determinants of above-threshold BLLs changes with decreasing intervention thresholds. Public Health Implications. States may need to update lead screening guidelines when decreasing the intervention threshold. (Am J Public Health. 2020;110:734-740. doi: 10.2105/AJPH.2020.305566)

FULL TEXT

Headnote

Objectives. To evaluate how lowering the blood lead level (BLL) intervention threshold affects childhood lead testing policy.

Methods. We geocoded 4.19 million Illinois lead testing records (2001-2016) and linked to 2.37 million birth records (2001-2014), data on housing age, industrial emissions, and roads. We used multinomial logistic regression to determine predictors of BLLs of 10 micrograms per deciliter (μg/dL) or greater, 5 to 9 μg/dL, and 4 μg/dL.

Results. We found that 2.2% of children had BLLs of 10 μg/dL or greater, 8.9% had BLLs of 5 to 9 μg/dL, and 5.7%

had BLLs of 4 μg/dL. Pre-1930 housing was associated with more than 2- to 4-fold increased relative risk of BLLs above all thresholds. Housing built in 1951 to 1978 was associated with increased relative risk of BLLs of 5 to 9 μg/dL (relative risk ratio [RRR] = 1.14;95% confidence interval [CI] = 1.06, 1.21) but not with increased relative risk of BLLs of 10 μg/dL or greater (RRR = 0.99;95% CI = 0.84,1.16). At a given address, previous BLLs of 5 to 9 μg/dL or BLLs of 10 μg/dL or greater were associated with increased risk of BLLs of 5 to 9 μg/dL or BLLs of 10 μg/dL or greater among current occupants by 2.37- (95% CI = 2.20, 2.54) fold and 4.08- (95% CI = 3.69, 4.52) fold, respectively.

Conclusions. The relative importance of determinants of above-threshold BLLs changes with decreasing intervention thresholds.

Public Health Implications. States may need to update lead screening guidelines when decreasing the intervention threshold. (Am J Public Health. 2020;110:734-740. doi: 10.2105/AJPH.2020.305566)

Lead exposure remains a significant threat to children's health in the United States. In 2014 alone, there were 37 824 cases of confirmed blood lead levels (BLLs) of 5 micrograms per deciliter (mg/dL) or greater among the 30 states that reported data to the Centers for Disease Control and Prevention (CDC).1 Lead is a neurotoxin that irreversibly damages the developing brain.2 Exposure in childhood is associated with decreased IQ3 and educational attainment4,5 and increased risk of delinquency.4,6 The most commonly cited risk factor for lead exposure is the age of housing.7 Lead was used as an additive in paint until a federal ban in 1978; however, because of a series of voluntary industry standards and local public health campaigns, the popularity of lead paint began declining around the 1930s and the concentration of lead in paint decreased significantly after 1950.8 Another commonly cited source of lead exposure is drinking water, which may be contaminated by flowing through lead service lines and lead residential pipes which were in use throughout most of the 20th century.9 Lead was also used as an additive in gasoline until 199510 and is still released during some industrial processes involving heavy metals.11 Therefore, proximity to roadways and industrial sites may be associated with lead exposure. The relative impact of these different exposure sources is not well understood.12

Until 2012, the CDC designated 10 mg/dL as the "BLL of concern." In 2012, the CDC began designating a "reference BLL" as a guide for policymaking, which was initially set at 5 mg/dL, based on the 97.5th percentile ofBLLs in the National Health and Nutrition Examination Survey, but more recent data indicate that the 97.5 th percentile of BLLs is now 3.5 mg/dL.13 While there is consensus that there is no safe level oflead,14 many states use this CDC reference level as the threshold that triggers interventions such as case management and environmental inspections.

Although federal guidelines mandate that all children on Medicaid must be screened for lead exposure at ages 1 and 2 years, state and local health departments set their own guidelines for children not on Medicaid. While some states have adopted universal testing,15 neither the CDC nor the US Preventive Services Task Force has recommended the practice.16,17 Many states, including Illinois, mandate testing only in certain zip codes that are designated high risk; an understanding of exposure sources is necessary to accurately define risk. However, as the intervention threshold decreases, the distribution and relative importance of different predictors oflead exposure may also change.

As part of a comprehensive evaluation of lead screening policies in Illinois, we used geospatial analysis oflead testing and exposure data to investigate the relative importance of different sources oflead exposure in predicting above-threshold BLLs in the setting of changing intervention thresholds. We linked 16 years of lead tests administered to more than 1 million children to Illinois birth records and geocoded the test address, allowing us to integrate exposure data, including housing age, industrial emissions, and the location of major roads. Using multinomial logistic regression analysis, we identified demographic and exposure variables associated with 3 outcomes: BLLs above the intervention threshold in Illinois during our sample period (10 mg/dL), BLLs between 5 and 9 mg/dL, and BLLs at a potential future level of reference of 4 mg/dL. To the best of our knowledge, this article is the first to show the implications of decreasing BLL thresholds for lead screening policy.

METHODS

We obtained birth records for all 2.37 million children born in Illinois between 2001 and 2014 from the Illinois Department of Public Health. Birth records included demographic information such as race, ethnicity, parental education level, and parental age. We also obtained records of all 4.19 million lead tests performed on these children between 2001 and 2016. In Illinois, there are 3 groups of children for whom doctors are required to complete blood lead tests: children who are on Medicaid, who comprise 41.6% of the population aged younger than 6 years according to the 2017 American Communities Survey; children who live in 1 of the 43.5% of zip codes designated high-risk by the Illinois Department ofPublic Health, including the entire city of Chicago; and children who screen positive on a risk assessment questionnaire provided by the Illinois Department of Public Health. The distribution ofhigh-risk zip codes in Illinois is mapped in Figure 1a. The screening rate in our sample was 43.0%.

Matching

Overall, we successfully matched 89.4% of all lead tests to a birth record and this rate improved steadily throughout the study period as shown in Figure A (available as a supplement to the online version of this article at http://www.ajph.org). We linked the lead testing and birth data sets by using a custom fuzzy matching algorithm based on the Jaro-Winkler string distance18 of first name, last name, and date of birth with manual review of optimal cutoffs. Each lead test record contained the name and address of the child, the date of the blood draw, the type of test (venous or capillary), the test result, and identifiers for the testing laboratory.

Certain laboratories reported all values below a certain threshold as the cutoff value, implying a minimum reporting limit. We determined the minimum reporting cutoffs for each laboratory test type-year combination by manual review of BLL histograms. The distribution of BLLs is skewed to the right; therefore, an absence of tests below a certain value for a given laboratory likely indicates that the laboratory has a minimum reporting limit. We recoded all test results that were reported at those limits to the average test result below the cutoff in that year-test type group among laboratories without cutoffs. We recoded all the corrected test results to values less than 3.8 mg/dL. We plotted a histogram of laboratory cutoffs in Figure B and we replicated our analysis with unadjusted test results in Table A (available as supplements to the online version of this article at http://www.ajph.org).

We only used tests before the age of 2 years because younger children spend more time in the home and are likely to be maximally exposed to lead hazards at home. For each child, we used the highest venous test if available. If children had only capillary tests, we used the highest confirmed capillary test- that is, a capillary test followed by another test within 3 months.19 Absent venous or confirmed capillary test, we used the highest unconfirmed capillary test. We replicated our analysis using only venous tests in Table B (available as a supplement to the online version ofthis article at http://www.ajph.org).

We standardized and geocoded all test addresses with ArcGIS (ESRI, Redlands, CA). We obtained data on housing age from parcel data provided by the Zillow Transaction and Assessment Database.20 Among the 1 201 801 children with a lead test by age 2 years, we successfully geocoded testing addresses of928 371 and linked parcel data of 640 347. The geocoding rate improved throughout the study period as shown in Figure C (available as a supplement to the online version of this article at http:// www.ajph.org). Median housing age by zip code is mapped in Figure 1b. We obtained income data for each census block group from the 2015 American Community Survey21 and defined each census block group as low income if the median household income was less than $40 000.

We also collected Toxic Release Inventory (TRI) data maintained by the Environmental Protection Agency, which details industrial lead emissions, including geocodes for the point sources.22 These data are consistently available since 2001; hence, we started our sample that year. In addition, we obtained the location of major roadways, defined as state and interstate highways, from the Illinois Department of Transportation.23 We calculated the distance from lead-emitting facilities and roadways to each child's address. We performed data cleaning, linkage, analysis, and plotting in R version 3.4 (R Foundation, Vienna, Austria) and Stata version 15.1 (StataCorp LP, College Station, TX).

Data Analysis

We investigated correlates ofabovethreshold BLLs at different thresholds by estimating the following multinomial logistic regression model:

(1) (ProQuest: ... denotes formula omitted.)

where BLL¦yzt =x is a categorical variable that is 1 if child i had a BLL of 4 mg/dL, 2 if the child had a BLL of 5 to 9 mg/dL, and 3 if the child had a BLL of 10 mg/dL or greater. Although some have suggested 3.5 mg/dL as a future reference level, we used 4 mg/dL as a hypothetical cutoff because during our study period, the Illinois lead program stored test results truncated to the nearest integer. The subscripts y, z, and t denote the birth cohort, zip code, and the year of test, respectively. Vintagei is a vector of indicators for decade of construction of housing at testing address for child i, which was initially stratified by decade to generate Figure 2, and subsequently stratified as 1930 or before, 1931 to 1950, 1951 to 1977, and 1978 or after to generate the tables; TRIiy is a vector of cumulative industrial lead emissions at given distances from the child up to birth year y; Roadi is a vector of indicators for major roads at given distances from the child's testing address; and X_i is a vector of child and mother characteristics, including indicators for previous instances of above-threshold BLLs at the child's testing address, race, ethnicity, age, Medicaid status, education and age of the mother as recorded in the birth certificate, and median income in the child's census block group.

We included vectors of indicators for the child's birth cohort (Xy), the combination of testing laboratory and year of test (1t), and month oftest (tt). By controlling for the combination of testing laboratory-year fixed effects, we partialled out systematic measurement or reporting bias. We report relative risk ratios (RRRs) and 95% confidence intervals (CIs) for all coefficients. We tested for equality of the coefficients for the 3 outcomes by using the %2 test and used the Benjamini-Hochberg procedure to account for multiple testing.24 Zz is a vector of zip code-level means of all the other regressors included in the model. This modeling choice of random effects has been proposed to solve the incidental parameters problem induced by including fixed effects in nonlinear regressions.25,26 By controlling for zip code random effects, we partialled out average housing conditions in each neighborhood, reducing the risk that our results were affected by selection bias and sorting. We report a version of this model that does not include zip code random effects in Table C, without adjustment oflaboratory reporting thresholds in Table A, with only venous measurement in Table B, and with data only from the second half of the sample period (2009-2016) in Table D (available as supplements to the online version of this article at http://www.ajph.org).

RESULTS

Table 1 shows summary statistics of relevant variables in our study group. Based on mother's race, children in our sample were 66.8% White, 21.8% Black, and 3.8% Asian. More than a third of our sample (36.6%) lived in census block group with a median income less than $40 000, and almost half of the children (47.9%) had mothers with a highschool diploma or less education. Many children lived in old housing, with 45.6% living in housing built before 1930, 8.3% living in housing built between 1931 and 1950, and 30.2% living in housing built between 1951 and 1978. Figure 1b shows a map of median housing age by zip code, showing that the oldest housing is concentrated within the city ofChicago and in the western part of the state, while the Chicago and St Louis, Missouri, suburbs have predominantly newer housing. The current definition of high-risk zip codes for the purposes of lead screening appears to correlate well with the oldest housing. Only 3.4% of children lived within 30 meters of a major road and even fewer (0.3%) lived within 250 meters of a facility with any lead emissions.

Among tested children, 2.2% had their highest BLL at 10 mg/dL or greater, 8.9% had it at 5 to 9 mg/dL, and 5.7% had it at 4 mg/dL. Table 2 presents our regression coefficients expressed in RRRs. Several demographic factors were associated with increased relative risk of above-threshold BLLs. Being Black was associated with increased relative risk of above-threshold BLLs. By contrast, Hispanic ethnicity was associated with lower risk of above-threshold BLLs, and being Asian had no association with relative risk of abovethreshold BLLs.

The association between housing construction decade and RRR of abovethreshold BLLs is plotted in Figure 2. Table 2 shows that, relative to housing built after 1978, housing built between 1950 and 1978 was not associated with increased relative risk of BLLs of 10 mg/dL or greater (RRR = 0.99; 95% CI = 0.84, 1.16) but was associated with increased relative risk of BLLs of 5-9 mg/dL (RRR 1.14; 95% CI = 1.06, 1.21) and BLLs of 4 mg/dL (RRR= 1.26; 95% CI= 1.19, 1.34). The association between housing age and risk of above-threshold BLLs was strongest for housing built before 1930, which was associated with increased risk of BLLs of 10 mg/dL or greater (RRR = 4.06; 95% CI = 3.49, 4.71), 5 mg/dL or greater (RRR = 2.65; 95% CI = 2.44, 2.89), and 4 mg/dL or greater (RRR = 2.28;

95% CI = 2.13, 2.45). We also found that previous instances of above-threshold BLLs at a given address were significantly associated with above-threshold BLLs among later residents. A previous resident having a BLL of 5 to 9 mg/ dL increased the relative risk of current resident having a BLL of 5 to 9 mg/dL by 2.37(95% CI = 2.2, 2.54) fold while a previous BLL of 10 mg/dL or greater increased the relative risk of a current resident having BLL of 10 or greater by 4.08- (95% CI = 3.69, 4.52) fold.

Moreover, proximity to state and interstate highways did not significantly increase the relative risk of above-threshold BLLs. Finally, an increase of cumulative air lead emissions within 250 meters of a child's home was associated with higher relative risk of abovethreshold BLLs at all thresholds (RRR for BLL >10 mg/dL= 1.0027; 95% CI= 1.0016, 1.0037 per ton of emissions).

Ourresults were stable in models using data without adjustment for laboratory reporting thresholds (Table A) and with venous tests only (Table B). Using a model that did not account for zip code random effects (Table C) produced larger RRRs for demographic variables and housing age. Using data from the second half of the sample period (Table D) generated consistent RRRs compared with the entire sample period, with the exception that being Black was not associated with increased relative risk of BLL of 10 mg/dL or greater, but continued to be associated with increased relative risk of BLLs of 4 mg/dL or greater.

DISCUSSION

As childhood lead levels continue to decrease around the nation, the CDC reference level is likely to be decreased,13 prompting state and local health departments to evaluate whether to lower the intervention threshold that triggers environmental inspection and case management.

Our exposure analysis revealed that the relative importance of exposure sources also changes as the exposure threshold decreases. We found that housing built between 1950 and 1978 did not appear to significantly increase the relative risk ofBLLs of10 mg/dL or greater but did increase the relative risk of BLLs of 5 to 9 mg/dL and 4 mg/dL. Therefore, states may want to take into account the prevalence of any pre-1978 housing when determining which zip codes are high risk under a lower intervention threshold. Focusing solely on housing built before 1950, as recommended by the current CDC guidelines,17 may result in missing children with BLLs above the lower intervention thresholds. Regardless of the intervention threshold, housing built before 1930 is associated with exceptionally high risk of abovethreshold BLLs compared with housing built after 1978. The dramatic increase in relative risk of above-threshold BLLs for housing built before 1930 is consistent with surveys of the housing stock that indicate that lead hazards are much more prevalent in the oldest housing.27 Thus, policymakers may need to develop nuanced programs aimed at the most at-risk children under any threshold. For example, housing built before 1930 could be targeted for preventive remediation, which was recently shown to reduce mean BLLs only in the highest-risk children,28 while housing built between 1930 and 1978 could be targeted for blood lead screening.

We also showed that previous instances of both BLLs of 5 to 9 mg/dL and 10 mg/dL or greater at an address were associated with increased relative risk of above-threshold BLLs of the current occupants. During the study period, a BLL of 10 mg/dL would have triggered visits from case management, an environmental inspection, and mandated remediation oflead hazards iffound. In reality, remediation of lead hazards often does not occur or may take many months to complete.29 This lack of compliance may explain why children living in housing with previous BLLs of10 mg/dL or greater remain at risk for exposure. Illinois has recently decreased the intervention threshold from 10 to 5 mg/dL, and our findings suggest that homes where BLLs of 5 to 9 mg/dL were previously detected may continue to put children at increased risk for BLLs above the new threshold if they are not remediated in a timely fashion.

We found that being Black, along with several other demographic variables such as having a mother with low education levels and living in a low-income area, was associated with increased relative risk of abovethreshold BLLs, which is consistent with the existing literature.13,30 We found that these demographic effects on BLLs persisted after we controlled for neighborhood characteristics and housing age, suggesting that even within a given zip code and for a given housing age, families from disadvantaged backgrounds may be living in the most dangerous housing. In the version of our model run on the subsample of children born between 2009 and 2016 (Table D) we found that being Black appeared to no longer be associated with BLL of 10 mg/dL or greater but

continued to be associated with BLLs of 4 mg/dL or greater. This finding implies that while disparities in severe lead poisoning may have shrunk in recent years,13 disparities persist in rates of moderately elevated BLLs.

Our results indicate that current air lead emissions from industrial sources did not significantly contribute to BLLs except for children living very close to lead-emitting facilities. Because of the high weight of lead particles, the amount of lead deposited in soil from air emissions decays rapidly within 100 meters of the source.31 Therefore, most children in our sample may not live close enough to facilities for these effects to become significant. Roadway emissions constituted another important source of lead in soil because gasoline contained lead until 1996. We found that that proximity to state and interstate highways was not associated with increased risk of above-threshold BLLs in our sample. While significant lead hazards remain in urban soil,32 a more detailed model including data on historical traffic density may be required to analyze these effects of roadways on lead exposure. While older studies have found a strong correlation between proximity to roadways and BLL,33 a recent analysis found that the association between proximity to roadways and BLLs is weakening over time,5 which could be related to a range of factors including decreasing soil lead concentrations, changes in the built environment, or changes in behavior. In addition, our analysis does not include data on historical traffic density, which may modify the association between above-threshold BLLs and proximity to state and interstate highways.

Limitations

This study is one of the largest populationlevel analyses of the importance of different lead exposure sources to date. However, there are several limitations to our work in addition to the lack of local road and traffic data. First, we did not examine the effects of lead in drinking water, a source of exposure that gained significant attention during the crisis in Flint, Michigan.34 Lead in water may originate from lead in mains, service lines, or residential pipes,9 but there are little available data on each source. Given historical patterns oflead pipe use, we believe that the inclusion of housing vintage in our model partially accounts for the effects of water lead levels.35 We performed a separate analysis including only children born in Chicago, where lead service lines were mandated until 1986,35 and did not find a significant decrease in risk of BLLs of 5 mg/dL or greater for housing built after 1986 relative to housing built in 1978 (Figure E, available as a supplement to the online version of this article at http://www. ajph.org), suggesting that lead in these service lines did not make a significant contribution to children's risk of above-threshold BLLs. This is consistent with previous studies that have found that lead in water accounted for less than 10% of total exposure among children with high lead levels.12 Second, we conducted our analysis by using the address at the time oftest, but not all of children's exposure occurs in the home. We attempted to minimize this limitation by focusing on younger children aged 0 to 2 years. Third, while children's Medicaid enrollment status was reported on the lead test, this variable may be incompletely reported given that 41.6% of Illinois children are on Medicaid, compared with only 25.8% in our sample.

Public Health Implications

Our results suggest that states may need to re-evaluate their screening guidelines for non-Medicaid-eligible children when they lower the intervention threshold because the determinants of lead exposure may change. When determining which zip codes are high-risk, focusing on pre-1950 housing is reasonable when the threshold is 10 mg/dL, but when the threshold decreases to 5 mg/dL, all children living in pre-1978 housing appear to be at risk for above-threshold BLLs. Regardless of the intervention threshold, children living in pre-1930 housing are at an exceptionally elevated risk for abovethreshold BLLs, suggesting that policymakers should consider devoting additional resources to families living in these homes.

Using individual data geocoded at the test address and controlling for a variety of random and fixed effects, we show that even after controlling for the age of housing and the neighborhood they live in, Black children, children with low parental education level, and children living in low-income neighborhoods are at increased risk for abovethreshold BLLs. Although there has been progress toward reducing racial disparities in above-threshold BLLs, our findings indicate that significant disparities in risk ofhigh BLLs remain. This result highlights the continued need for considering race when allocating resources for childhood lead poisoning prevention. >4jPI-l

CONTRIBUTORS

All authors contributed to design of the study, data analysis, and editing of the final article. A. Abbasi composed the initial draft ofthe article. A. Abbasi and L. Gazze were responsible for conceptualization and oversight of the study.

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The authors have no conflicts of interest relevant to this article.

HUMAN PARTICIPANT PROTECTION

This study was approved by the University of Chicago institutional review board'.

Sidebar

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References

REFERENCES

1. Raymond J, Brown MJ. Childhood blood lead levels in children aged <5 years-United States, 2009-2014. MMWR Surveill Summ. 2017;66(3):1-10.

2. Mason LH, Harp JP, Han DY. Pb neurotoxicity: neuropsychological effects of lead toxicity. BioMed Res Int. 2014;2014:840547.

3. Ferrie JP, Rolf K, Troesken W. Lead exposure and the perpetuation of low socioeconomic status. 2015. Available at: https://pdfs.semanticscholar.org/56f8/ 7f0d51c12c0772c53eec2bd70b6d000b518c.pdf. Accessed February 10, 2020.

4. Reyes JW. Lead policy and academic performance: insights from Massachusetts. Harv Educ Rev. 2015;85(1): 75-108.

5. Aizer A, Currie J. Lead and juvenile delinquency: new evidence fromlinkedbirth, school, andjuvenile detention records. Rev Econ Stat. 2019;101(4):575-587.

6. Aizer A, Currie J, Simon P, Vivier P. Do low levels of blood lead reduce children's future test scores? Am Econ J Appl Econ. 2018;10(1):307-341.

7. Centers for Disease Control and Prevention. Preventing lead exposure in young children: a housingbased approach to primary prevention oflead poisoning. 2004. Available at: https://www.cdc.gov/nceh/lead/publications/primarypreventiondocument.pdf. Accessed December 11, 2018.

8. Reich P. The hour of lead: a brief history of lead poisoning in the United States over the past century and of efforts by the lead industry to delay regulation. Environmental Defense Fund. 1992. Available at: https://www.edf.org/sites/default/files/the-hour-of-lead.pdf. Accessed November 30, 2018.

9. Brown MJ, Margolis S. Lead in drinking water and human blood lead levels in the United States. MMWR Suppl. 2012;61(4):1-9.

10. Silbergeld EK. Preventing lead poisoning in children. Annu Rev Public Health. 1997;18(1):187-210.

11. US Environmental Protection Agency. Lead emissions. Report on the environment. Available at: https://cfpub.epa.gov/roe/indicator.cfm?i=13. Accessed November 29, 2018.

12. Zartarian V, Xue J, Tornero-Velez R, Brown J. Children's lead exposure: a multimedia modeling analysis to guide public health decision-making. Environ Health Perspect. 2017;125(9):097009.

13. Tsoi M-F, Cheung C-L, Cheung TT, Cheung BMY. Continual decrease in blood lead level in Americans: United States National Health Nutrition and Examination Survey 1999-2014. Am JMed. 2016;129(11): 1213-1218.

14. Centers for Disease Control and Prevention. Lead. 2013. Available at: https://www.cdc.gov/biomonitoring/Lead_factsheet.html. Accessed November 23, 2018.

15. Dickman J. Children at risk: gaps in state lead screening policies. Safer Chemicals Healthy Families. 2017. Available at: https://saferchemicals.org/sc/wpcontent/uploads/2017/01/saferchemicals.org_childrenat-risk-report.pdf. Accessed December 5, 2018.
16. Rischitelli G, Nygren P, Bougatsos C, Freeman M, Helfand M. Screening for elevated lead levels in childhood and pregnancy: an updated summary ofevidence for the US Preventive Services Task Force. Pediatrics. 2006; 118(6):e1867-e1895.
17. Centers for Disease Control and Prevention. Screening young children for lead poisoning: guidance for state and local public health officials. 1997. Available at: https:// www.cdc.gov/nceh/lead/publications/screening.htm. Accessed November 30, 2018.
18. Winkler WE. String comparator metrics and enhanced decision rules in the Fellegi-Sunter model of record linkage. Proceedings of the Section on Survey Research Methods. American Statistical Association. 1990:354-359. Available at: https://files.eric.ed.gov/ fulltext/ED325505.pdf. Accessed February 10, 2020.
19. Centers for Disease Control and Prevention. CDC lead standard surveillance definitions and classifications. 2016. Available at: https://www.cdc.gov/nceh/lead/ data/definitions.htm. Accessed November 23, 2018.
20. Zillow Group. Zillow Transaction and Assessor Database. 2017. Available at: http://www.zillow.com/ ztrax. Accessed December 2, 2018.
21. US Census Bureau's American Community Survey Office. B19013: Median household income in the past 12 months. 2015 American Community Survey. 2015. Available at: http://factfinder2.census.gov. Accessed January 10, 2017.
22. US Environmental Protection Agency. Toxics Release Inventory (TRI) Program. Available at: https://www.epa.gov/toxics-release-inventorytri-program/tri-data-and-tools. Accessed December 2, 2018.
23. Illinois Department of Transportation. Highway system. Available at: http://www.idot.illinois.gov/ transportation-system/Network-Overview/highwaysystem/index. Accessed December 2, 2018.
24. Benjamini Y, Hochberg Y. Controlling the false discovery rate: a practical and powerful approach to multiple testing. J R Stat Soc B. 1995;57(1): 289-300.
25. Mundlak Y. On the pooling of time series and cross section data. Econometrica. 1978;46(1):69-85.
26. Neyman J, Scott EL. Consistent estimates based on partially consistent observations. Econometrica. 1948;16(1): 1 -32.
27. Jacobs DE, Clickner RP, Zhou JY, et al. The prevalence oflead-based paint hazards in US housing. Environ Health Perspect. 2002;110(10):A599-A606.
28. Braun JM, Hornung R, Chen A, et al. Effect of residential lead-hazard interventions on childhood blood lead concentrations and neurobehavioral outcomes. JAMA Pediatr. 2018;172(10):934-942.
29. Zierold KM, Havlena J, Anderson H. Exposure to lead and length of time needed to make homes lead-safe for young children. Am J Public Health. 2007;97(2):267-270.
30. Centers for Disease Control and Prevention. Blood lead levels in children aged 1-5 years-United States, 1999-2010. MMWR Morb Mortal Wkly Rep. 2013; 62(13):245-248.
31.Muskett CJ,Jones MP. The dispersal oflead, cadmium and nickel from motor vehicles and effects on roadside invertebrate macrofauna. Environ Pollut A. 1980;23(3): 231 -242.
32. Datko-Williams L, Wilkie A, Richmond-Bryant J. Analysis ofUS soil lead (Pb) studies from 1970 to 2012. Sci Total Environ. 2014;468-469:854-863.
33. Macey GP, Her X, Reibling ET, Ericson J. An investigation of environmental racism claims: testing environmental management approaches with a geographic information system. Environ Manage. 2001;27(6): 893-907.
34. Hanna-Attisha M, LaChance J, Sadler RC, Schnepp AC. Elevated blood lead levels in children associated with the Flint drinking water crisis: a spatial analysis ofrisk and public health response. Am J Public Health. 2016;106(2): 283-290.
35. Rabin R. The lead industry and lead water pipes "A Modest Campaign." AmJ Public Health. 2008;98(9): 1584-1592.

DETAILS

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The Occupational Safety and Health Administration at 50: Protecting Workers in a Changing Economy

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ABSTRACT (ENGLISH)

The passage of the Occupational Safety and Health Act of 1970 brought unprecedented changes in US workplaces, and the activities of the Occupational Safety and Health Administration (OSHA) have contributed to a significant reduction in work-related deaths, injuries, and illnesses. Despite this, millions of workers are injured annually, and thousands killed. To reduce the toll, OSHA needs greater resources, a new standardsetting process, increased civil and criminal penalties, full coverage for all workers, and stronger whistleblower protections. Workers should not be injured or made sick by their jobs. To eliminate work injuries and illnesses, we must remake and modernize OSHA and restructure the relationship of employers and workers with the agency and each other. This includes changing the expectation of what employers must do to protect workers and implementing a requirement that firms have a "duty of care" to protect all people who may be harmed by their activities. Only by making major changes can we ensure that every worker leaves work as healthy as they were when their work shift began. (Am J Public Health. 2020;110:631-635. doi: 10.2105/AJPH.2020.305597)

FULL TEXT

Headnote

The passage of the Occupational Safety and Health Act of 1970 brought unprecedented changes in US workplaces, and the activities of the Occupational Safety and Health Administration (OSHA) have contributed to a significant reduction in work-related deaths, injuries, and illnesses. Despite this, millions of workers are injured annually, and thousands killed.

To reduce the toll, OSHA needs greater resources, a new standardsetting process, increased civil and criminal penalties, full coverage for all workers, and stronger whistleblower protections. Workers should not be injured or made sick by their jobs. To eliminate work injuries and illnesses, we must remake and modernize OSHA and restructure the relationship of employers and workers with the agency and each other.

This includes changing the expectation of what employers must do to protect workers and implementing a requirement that firms have a "duty of care" to protect all people who may be harmed by their activities. Only by making major changes can we ensure that every worker leaves work as healthy as they were when their work shift began. (Am J Public Health. 2020;110:631-635. doi: 10.2105/AJPH.2020.305597)

The Occupational Safety and Health Administration (OSHA) is both a great success and a failure. Fifty years after the agency began operations is an opportune moment to both recognize the contribution it has made to the prevention of work injuries and illnesses and acknowledge the gaps in the law that still permit millions of workers to be hurt every year. More importantly, now is the time to launch an initiative to reimagine OSHA to ensure that all workers have the real opportunity to leave work as healthy as they were when their work shift began.

On December 29, 1970, President Richard Nixon signed into law the Occupational Safety and Health Act of 1970 (OSH Act), creating OSHA. For the first time, workers in the United States had the right to a safe work environment, and their employers had the legal obligation to provide it. Although the existence of OSHA and the responsibilities of employers are largely an accepted part of the workplace environment, the revolutionary nature of the OSH Act and the unprecedented changes it produced in the nation's workplace have largely been forgotten.

There is little question that OSHA's efforts have saved tens of thousands of lives and prevented millions of injuries. In the first year of OSHA's existence, 38 workers were killed on the job every day; now, with a workforce more than twice as large, that figure has dropped to 14 each day.1 There has also been a significant drop in workplace injuries. There is extensive evidence that OSHA standards are effective in preventing injuries and illnesses and that OSHA inspections lead to decreases in injuries for several years after a workplace is inspected.2-6

But the challenge for preventing work-related injuries, illnesses, and deaths remains large, and the toll is significant. More than 5000 workers are killed on the job every year, and the fatal injury rate has stopped decreasing. Currently, employers report that more than 3 million workers are injured on the job each year, and, according to the Bureau of Labor Statistics, this is a significant undercount of the actual number of injuries.7 The rates of fatal and nonfatal injury are no longer decreasing, and changes in the workplace and the workforce have made OSHA's tools and approaches increasingly less effective. The injury rates in many industries, such as agriculture, logging, and health care, remain alarmingly high. There are no reasonably accurate estimates of the number of work-related illnesses that occur each year, although perhaps 50 000 workers die annually from past exposures to toxic substances.8,9

Much of the burden of these conditions falls on low-wage workers, making work injuries and illnesses a component of the growth in the nation's economic inequality: injuries and illnesses block many low-wage workers from entering the middle class and even push some better paid workers into poverty. The failure of the workers' compensation system to provide adequate benefits for many of these workers forces them into taxpayer-supported programs such as Social Security Disability 10,11 Insurance.

The OSH Act generated a new and controversial federal government power: the right of government inspectors to enter private sector workplaces and require that hazards be controlled. But much of that initial promise was unfulfilled because of budget restrictions, judicial rulings, executive orders, appropriations riders, and strong opposition from the business community. Perceived government interference in the property rights ofbusiness owners has made OSHA the target of political and legal opposition for its entire history. As a result, the agency took a legalistic approach to workplace conditions, focusing primarily on compliance with its often limited and out-of-date regulations, unable to address the power dynamics at the workplace that has allowed the continued presence of hazardous working conditions.

The weaknesses now facing OSHA are significant and well recognized. OSHA's standardsetting process is broken; it takes years or even decades, and huge resources, to issue new standards able to withstand strong antiregulatory political opposition and well-funded industry lawsuits. The result is that the agency has few up-to-date standards for protecting workers from chemical exposures or safety hazards.

These limitations are compounded by a severe lack of resources. OSHA's annual budget is less than $600 million, a fraction of the Environmental Protection Agency's $8 billion budget. Federal OSHA, along with the 22 state plans covering private sector workers and 6 additional state plans that cover only private sector workers, have jurisdiction

over between 7 million and 8 million workplaces where more than 130 million workers are employed. Federal OSHA and state plans combined have only around 2000 inspectors. And the problem has gotten worse. In 1980, OSHA had 14.8 inspectors for every million covered workers; by 2018, that ratio had dropped to 5.6. With current staffing, it would take federal OSHA 165 years to visit every establishment in its jurisdiction just 1 time.12

When inspectors do find hazards, OSHA's small monetary penalties and weak criminal sanctions hardly deter employers who attempt to cut corners by endangering workers. Although the law, as originally envisioned, provides robust opportunity for worker involvement in the enforcement process, the OSH Act's language intended to prevent retaliation against employees who exercise those rights are weak and outdated. Fifty years after the OSH Act was passed, large swaths of the American workforce still lack even the basic right to a safe workplace. Eight million public employees do not have OSHA protections despite the hazardous work they perform every day. Agricultural workers on small farms also lack OSHA protections.

Finally, the OSH Act was originated overhalfa century ago to address working conditions and employee-employer relationships that are radically different from those that exist today. It was enacted in an economy that was dominated by highly unionized manufacturing and construction sectors. The political power of public sector employees was so insignificant that public sector workers were not even covered under the OSH Act. The law was passed largely because ofunion organizing, and the substantial worker participation rights written into the law generally assumed union involvement in OSHA inspections and other activities.

Today, we live in a much different world. Manufacturing employment has shrunk significantly, with the concomitant rise of employment in the retail, service, and government sectors and the different mix of hazards that accompany them. However, with much smaller employment in the manufacturing sector, and with only 1 in 16 private sector workers represented by a union,13 most workers are unable to exercise their rights under the law, and union-associated safety and health activities directly affect conditions for only a small percentage of workers. Evidence and common sense show that a stronger labor movement, with activist unions representing a far larger proportion of the workforce, would result in safer workplaces.14

Not only has the structure of the economy changed significantly since 1970, but the traditional employer-employee relationship that was common in 1970 is far less common. Today, individuals may work for dozens of different companies throughout their lives, with an increasingly large share employed in nontraditional employment relationships. Contractors and subcontractors perform all types of work, and many employers falsely claim that their employees are "independent contractors," enabling them to avoid OSHA coverage and other employer obligations. Staffing agencies provide temporary workers in every type of industry, and new sorts of staffing arrangements seem to be appearing on a regular basis. Millions of workers are involved in jobs in the "gig economy," in which their employment is mediated through online platforms. We're increasingly seeing the fissuring of employment with employees of multiple employers, as well as independent contractors, working together in the same workplace.15

The resulting fissured workplace is a far more dangerous place. Employers often fail to communicate about hazardous working conditions with other employers at the same site and, especially for temporary workers and day laborers, provide little or no safety training. These workers are often unaware of the protections that are supposed to be provided on the job or who is responsible for providing those protections and, given their precarious status, are often concerned that identifying hazards or reporting injuries may result in job loss. Current labor law, created many decades ago, often makes it challenging for enforcement agencies to determine which employer (if any) is responsible for providing a safe workplace,

Workers in the gig economy face even greater challenges in ensuring their health and safety. Corporations, such as Uber and TaskRabbit, that employ technology systems (called "platforms") that assign workers to work activities are attempting to classify workers as independent contractors, who as a result have no OSHA coverage. When successful, these firms have little or no legal responsibility to provide safe work and bear no workers' compensation costs or legal liability when these workers are injured. Further, a significant proportion of workers in dangerous industries, including agriculture, construction, and meat and poultry processing, are undocumented, and some are non-English speaking.16 Especially in the current political climate, many are hesitant to refuse hazardous work or

even raise their voices to contact OSHA when they identify hazards.
These changes in the structure ofthe American economy, in the workplace, and in employer- employee relationships are so significant that the case can be made that we have reached the limits of the (limited) effectiveness of OSHA's current approach as it was originated half a century ago.
We highlight 4 steps that would prevent a significant number of injuries, illnesses, and fatalities. Some of these and others have been proposed in the Protecting America's Workers Act, legislation that has been introduced multiple times since 2004 but never passed by Congress.17
DEVELOP A NIMBLE STANDARD-SETTING PROCESS
Standards are OSHA's most important and effective tool for protecting the safety and health of workers because standards alter the behavior of many employers across 1 or many industries. Standards, by definition, are norm setting: they change expectations of employer behavior. Many employers make great effort to be law abiding and, therefore, to meet the legal standards promulgated by OSHA.
The American economy is huge and changing rapidly, and it takes a nimble rule-making process to keep up with hazards accompanying new technologies and chemicals. Unfortunately, OSHA's regulatory process is far from nimble. OSHA's standards writing staff is nowhere near large enough to fill the need for new or updated standards, and the agency's processes for developing new standards or updating old ones are among the most burdensome and resource intensive of any agency in the federal government.
In particular, most OSHA chemical exposure standards are inadequately protective and outof-date. More than 90% of current permissible exposure limits date to industry consensus standards set in the 1960s, and there are no permissible exposure limits for the vast majority of chemicals used in today's workplace; OSHA's attempts to address this have been unsuccessful.18 As a result of OSHA's inability to issue adequate chemical standards, along with the accompanying difficulty of using OSHA's general duty clause to issue citations where no standard exists, means that the agency conducts relatively few inspections to monitor chemical exposures.
A sizable portion of OSHA's safety standards are also antiquated. Many were issued in the early 1970s and were based on industry consensus standards. But industry associations have moved forward to update those consensus standards every few years; OSHA has not. Although many employers and, especially, equipment manufacturers strongly desire new safety standards to ensure that their workers are able to work safely, OSHA does not have adequate staff to update standards on newer technologies.
In addition, OSHA has no standards on hazards that cause large numbers of injuries and illnesses, including ergonomic hazards, the source of perhaps one third of all conditions reported on OSHA logs12; heat exposure, even though dozens of workers die from heat exposure every summer and, this number is likely to rise with the climate crises19; and workplace violence, which affects many workers in health and social service employment.20 In addition, OSHA's noise standard is out-of-date and unprotective, and the agency's hearing protection enforcement policy makes it even more unlikely that an employer will be cited in most situations in which hazardous levels of noise are present.21 OSHA has few standards that protect the highly dangerous area of oil and gas drilling, nor do OSHA standards cover many hazards in agriculture.
To be effective, OSHA must be able to issue many new standards quickly. Those who envisioned the law in the 1960s would undoubtedly be aghast at the decade or more it often takes OSHA to issue a single standard. For chemical hazards, a shortterm solution would be for OSHA to issue regulations requiring employers to consider the safe use directions and warnings provided by manufacturers on labels and safety data sheets, applying the hierarchy of controls and the general approach of OSHA's comprehensive chemical exposure standards-including, as appropriate, labeling, education, and training and medical surveillance. Employers could choose not to follow these directions but only by showing their alternative approach is at least as protective. A short-term fix for OSHA's safety standards is to allow OSHA to easily adopt voluntary consensus standards, including updates of American National Standards Institute and other consensus standards, if the consensus panel is representative of the industry; structured to give adequate weight to the voices of workers; and provides adequate, enforceable protections.
INCREASE DETERRENCE

The main principle underlying OSHA's enforcement efforts is deterrence: encouraging or requiring employers to eliminate exposure to hazards that cause injury or illness-before workers are injured, made ill, or killed. Enforcement inspections, OSHA's main tool of deterrence, are effective in preventing injuries at inspected workplaces for several years after the inspection.2-6 Knowledge that OSHA inspects and issues penalties drives employers to abate hazards before an inspector actually appears at the establishment's door, magnifying the deterrent effect of inspections.22 OSHA also has extensive cooperative programs to assist small employers to make their workplaces safer and recognition programs for employers who commit to going beyond OSHA requirements; although useful, these programs affect relatively few workplaces and make only a small contribution to preventing injuries in other worksites.

OSHA has 2 penalties it can employ against employers who violate the law and endanger workers: civil monetary penalties and criminal penalties. Monetary penalties are effective only if employers believe they may receive a significant penalty for allowing a hazard to go unabated. Otherwise they become just a (small) cost of doing business. But given the tiny size of the OSHA inspectorate, it is highly unlikely that an employer will ever see an OSHA inspector unless a worker is killed or severely hurt. And when OSHA does inspect, monetary penalties are so small for all but the smallest employers that the impact is unlikely to motivate many employers to address unsafe conditions.

In 2015, Congress raised the maximum OSHA penalty from $7000 to $12 471 -adjusting for the rate of inflation since 1990 (when monetary penalty levels were previously set)-and Congress now requires the maximum be adjusted annually for inflation; however, OSHA penalties remain ineffective as deterrents, especially for large corporations. Although it is possible in some rare egregious cases for OSHA to levy penalties in the millions of dollars, even those sizable fines are too inconsequential to act as a deterrent for the largest corporations.

Criminal penalties with jail time for corporate directors are arguably more effective penalties, especially for large companies, but the current law provides for criminal prosecution only in instances in which a worker is killed and the employer has been cited for a willful violation of an OSHA standard. Even in these cases, the crime is considered a misdemeanor, punished by a maximum of 6 months in prison. The high bar and low penalty mean that federal prosecutors use this provision in the rarest of occasions, making it almost meaningless as a deterrent.

Given the low odds of an inspection, the relatively low costs of penalties following inspections even when many violations are found, and the externalization of costs of not abating hazards, it is not surprising that many employers fail to prioritize the control or elimination of workplace hazards. Changing the calculus involving each ofthese factors will increase the effectiveness of OSHA's enforcement program and will prevent workplace injuries.

PROVIDE FULL OSHA COVERAGE FOR ALL WORKERS

Fifty years after passage of the OSH Act, millions of workers still do not enjoy the right to a safe workplace, and employers have no legal obligation to provide safe working conditions. In those cases, when a worker is killed, no investigation occurs, no penalties are applied, and no lessons are learned.

The largest gap in OSHA coverage involves public sector workplaces. Under the OSH Act, public employees are not covered by federal OSHA even though they do work that is as dangerous or more dangerous than private sector work. The 21 states that run their own OSHA programs with matching federal funding, and Puerto Rico, which does as well, are required to cover their public sector workers, and other states may cover only their public employees with federal oversight and matching funding. Only 5 states and the Virgin Islands have taken advantage ofthis option; almost 50 years after private sector workers were given the right to a safe workplace, 8 to 9 million public sector workers in 24 states and the District of Columbia remain employed in OSHA-free zones.

Workers on small farms are at greatly increased risk of dying on the job. Yet every year, Congress includes language in the annual appropriations legislation that prohibits federal OSHA from expending any funds to inspect or enforce on farms with 10 or fewer workers. When OSHA receives a complaint from a desperate worker or a report of a farmworker killed in a confined space or drowned in a manure pit, the first question OSHA must ask is how many workers are employed by the farm. If it is a small farm, OSHA is prohibited not only from any enforcement actions but even from making a telephone call to ask what happened or giving advice on how to prevent the next death.

Only some state plan states set aside nonfederal funds to inspect small farms.

STRENGTHEN OSHA'S WHISTLEBLOWER PROTECTIONS

The people with the greatest knowledge of the presence of workplace hazards are the workers who are exposed to those hazards. To help protect themselves and their co-workers, workers must be able to discuss their concerns with their coworkers, raise their concerns with their employers, and alert OSHA or other government agencies about the presence of these hazards, all without fear of retaliation. Workers' rights under the law are meaningless without an effective way to prevent employers from retaliating against workers for exercising their rights. Unfortunately, the whistleblower protection provisions in the OSHA law are very weak and outdated, especially in comparison with the protections provided in more recent legislation protecting workers who voice safety or health concerns. Under section 11(c) of the OSH Act, for example, workers must file their claim within 30 days of the retaliation, the burden of proof is unnecessarily rigorous, OSHA cannot order preliminary reinstatement of wrongly discharged employees, and there is no individual right of action.23

Implementation of these recommendations would be useful, but given the changes in the structure ofthe US economy and in employer-employee relationships over the past half century, we also need to modernize the institutions charged with ensuring the safety and health of workers. If we truly want to eliminate work injuries, we must take steps to restructure OSHA and the relationship of employers and workers with the agency and, more importantly, with each other. Stronger unions enable workers to be less dependent on government intervention to make their workplaces safer. As we consider ways to reshape our system of worker protections, it must be done so that workers have more power at the workplace, so they can protect themselves rather than relying solely on an inevitably underfunded and politically vulnerable government agency.

The OSH Act is based on the concept of compliance with OSHA standards and regulations. However, it is widely recognized that many fatalities and serious injuries will not be prevented by simply complying with all OSHA standards, nor will there ever be OSHA standards to cover every hazard. Employers who are truly committed to preventing injuries and illnesses (like many of those in OSHA's cooperative programs) go beyond simple compliance with OSHA standards. They understand the need for dynamic safety and health management systems, continuous improvement processes whose objective is to find and fix all workplace hazards-even those for which there are no OSHA standards-before workers are hurt.

It is sometimes said, "Every company has a safety and health management system. Many of them just don't know it." And many of those are based on hope and luck. These employers hope their employees are lucky enough to avoid serious injuries or illnesses. Among safety and health experts, it is axiomatic that safety and health management systems, in which managers have demonstrated commitment and workers are empowered participants, are the key to successful prevention of work injuries and illnesses. Many professionals feel that a safety and health management system requirement should have been the first standard OSHA issued. To increase its effectiveness, OSHA needs to require employers to actively implement safety and health management systems.

In addition, because under the OSH Act, employers are solely responsible for providing safe workplaces to their employees, OSHA's definitions of "employer" and "employee" from 1970 are antiquated in light ofthe dramatic fissuring of workplace employer-employee relationships seen in recent years.

Rather than link safety responsibility solely to the employer-employee relationship, a preferable regulatory approach, as adopted in Australia and New Zealand, is to require a "duty of care" of all businesses. Under this model, all "persons conducting a business or undertaking" (called "duty holders") have a primary duty to ensure, as far as reasonably practicable, that the health and safety of their workers-as well as other workers influenced or directed by that business, consumers, and the general public- are not put at risk by that business's activities.

There is no question that because of OSHA, countless workers have returned safely to their families at the end of their work shift. But we can do better. The political winds have blown against OSHA for decades, and only through a major change in the political direction of the country are we likely to see protecting worker safety and health made a public health (and political) priority. However, given the unacceptable toll of preventable work injuries, illnesses, and deaths, as well as the changes in the workforce and work relationships, it is imperative that we examine and

restructure OSHA and the nation's efforts to protect the safety and health of the nation's greatest resource: our workers.

CONTRIBUTORS

Both authors contributed to the conceptualization, writing, and editing of this analytical essay.

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CONFLICTS OF INTEREST

The authors have no conflicts ofinterest to declare.

HUMAN PARTICIPANT PROTECTION

No protocol approval was necessary because we do not describe a study involving human participants.

Sidebar

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References

REFERENCES

1. Michaels D. Statement of David Michaels before the Committee on Education and the Workforce Subcommittee on Workforce Protections, US House of Representatives, October 7, 2015. Available at: https://www.osha.gov/news/testimonies/10072015. Accessed February 10, 2020.

2. Michaels D. OSHA does not killjobs: it helps prevent jobs from killing workers. Am J Ind Med. 2012;55(11):961-963.

3. Levine DI, Toffel MW, Johnson MS. Randomized government safety inspections reduce worker injuries with no detectable job loss. Science. 2012;336(6083): 907-911.

4. Foley M, Fan ZJ, Rauser E, Silverstein B. The impact ofregulatory enforcement and consultation visits on workers' compensation claims incidence rates and costs, 1999-2008. Am JInd Med. 2012;55(11): 976-990.

5. Haviland AM, Burns RM, Gray WB, Ruder T, MendeloffJ. A new estimate of the impact of OSHA inspections on manufacturing injury rates, 1998-2005. Am JInd Med. 2012;55(11):964-975.

6. Tompa E, Kalcevich C, Foley M, et al. A systematic literature review of the effectiveness of occupational health and safety regulatory enforcement. Am J Ind Med. 2016;59(11):919-933.

7. US Bureau ofLabor Statistics. Survey of occupational injuries and illnesses data quality research. Available at: https:// www.bls.gov/iif/data-quality.htm. Accessed December 19, 2019.

8. Schulte PA. Characterizing the burden of occupational injury and disease. J Occup Environ Med. 2005;47(6):607-622.

9. Steenland K, Burnett C, Lalich N, Ward E, Hurrell J. Dying for work: the magnitude of US mortality from selected causes of death associated with occupation. Am JInd Med. 2003;43(5):461-482.

10. Michaels D; US Occupational Safety and Health Administration. Adding inequality to injury: the costs of failing to protect workers on the job. 2015. Available at: https://www.osha.gov/ Publications/inequality_michaels_june2015.pdf. Accessed December 19, 2019.

11. Spieler EA. (Re)assessing the grand bargain: compensation for work injuries in the United States, 1900-2017. Rutgers ULRev. 2017;69(3):891-1013.

12. AFL-CIO. Death on the job: the toll of neglect, 2019. Available at: https:// aflcio.org/reports/death-job-tollneglect-2019. Accessed December 19, 2019.
13. US Bureau ofLabor Statistics. Union membership (annual) news release. Available at: https://www.bls.gov/news.release/ union2.htm. Accessed February 10, 2020.
14. Wright MJ. The decline of American unions is a threat to public health. Am J Public Health. 2016;106(6):968-969.
15. Weil D. The Fissured Workplace: Why Work Became So Bad for So Many and What Can Be Done to Improve It. Cambridge, MA: Harvard University Press; 2014.
16. American Public Health Association. Occupational health and safety protections for immigrant workers. 2005. Available at: https://www.apha.org/ policies-and-advocacy/public-healthpolicy-statements/policy-database/2014/07/09/15/19/occupational-health-andsafety-protections-for-immigrantworkers. Accessed February 10, 2020.
17. Protecting America's Workers Act. HR 1074. 116th Congress (introduced February 7, 2019).
18. US Department of Labor. Chemical management and permissible exposure limits (PELs). 2014. Available at: https:// www.osha.gov/laws-regs/federalregister/ 2014-10-10. Accessed December 19, 2019.
19. Arbury S, Jacklitsch B, Opeyemi F, et al. Heat illness and death among workers-United States, 2012-2013. MMWR Morb Mortal Wkly Rep. 2014; 63(31):661-665.
20. Occupational Safety and Health Administration. Prevention ofworkplace violence in healthcare and social assistance. Fed Regist. 2016;81(235):88147-88157.
21. National Academy ofEngineering; Committee on Technology for a Quieter America. Technology for a Quieter America. Washington, DC: National Academy of Engineering; 2010.
22. Johnson MS. Regulation by shaming: deterrence effects ofpublicizing violations ofworkplace safety and health laws. 2019. Available at: https://drive.google.com/file/ d/ 1HcKpGXZuFWNNLa1YTl0A4 Hte1BiJabT-/view. Accessed February 10, 2020.
23. US Department of Labor. Testimony of David Michaels before the Subcommittee on Employment and Workplace Safety, Committee on Health, Education, Labor and Pensions, United States Senate, April 29, 2014. Available at: https://www. osha.gov/news/testimonies/04292014. Accessed February 10, 2020.

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Straining the System: Novel Coronavirus (COVID-19) and Preparedness for Concomitant Disasters

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ABSTRACT (ENGLISH)

Just a few weeks before the first confirmed case of novel coronavirus (COVID-19) was reported in the United States, the US Centers for Disease Control and Prevention (CDC) issued a bold promise to the nation: the agency will use its scientific expertise to bring a new level of preparedness in the United States and global health security against current and growing threats, finally eliminate certain diseases, and bring an end to the devastation of epidemics.1 The current outbreak of COVID-19 reminds us how urgent this promise is and just how critical it is to continue to sustain and strengthen our nation's public health infrastructure. The unprecedented pace of the public health response to COVID-19 has only been possible because of prior investments in public health preparedness. To accelerate our pace and meet the challenges of current and future health threats, we must advance our world-class data and analytics capabilities; maintain and expand our state-of-the-art public health laboratory capacity; continue building a workforce of trusted, expert, public health professionals; sustain our capacity to rapidly respond to outbreaks at their source; and assure a strong global and domestic preparedness capacity.

FULL TEXT

Just a few weeks before the first confirmed case of novel coronavirus (COVID-19) was reported in the United States, the US Centers for Disease Control and Prevention (CDC) issued a bold promise to the nation: the agency will use its scientific expertise to bring a new level of preparedness in the United States and global health security against current and growing threats, finally eliminate certain diseases, and bring an end to the devastation of epidemics.1 The current outbreak of COVID-19 reminds us how urgent this promise is and just how critical it is to continue to sustain and strengthen our nation's public health infrastructure. The unprecedented pace of the public health response to COVID-19 has only been possible because of prior investments in public health preparedness. To accelerate our pace and meet the challenges of current and future health threats, we must advance our world-class data and analytics capabilities; maintain and expand our state-of-the-art public health laboratory capacity; continue building a workforce of trusted, expert, public health professionals; sustain our capacity to rapidly respond to outbreaks at their source; and assure a strong global and domestic preparedness capacity.

WORLD-CLASS DATA AND ANALYTICS

Advancing world-class data and analytics to support public health decision-making is vital to our disease surveillance and response activities. It is unacceptable that today across the United States many clinicians and public health professionals use 20th century technology to protect and promote the public's health. Think about this: in the year 2020, we still depend on facsimile machines (faxes) to report information about communicable disease cases to state and territorial public health authorities and follow up with paper forms. Critical health data are still managed on paper records or in spreadsheets that require extensive manual data entry and analysis. While we have improved in some areas, the uneven distribution of information technology across the country calls for an upgrade and modernization of the public health data enterprise. The US Congress' recent $50 million down payment on a 21st century public health data superhighway is a start,2 but to put that figure in context, that is about the cost of installing one electronic health records system in one medium-sized health system.

LABORATORY SCIENCE

The CDC's public health laboratory capacity is second to none, and our state and territorial labs complement that national capability, but the CDC must continue to keep pace with scientific advancements in laboratory science and bring partner laboratories along too. The only way that the CDC was able to quickly develop a test for COVID-19 was by having world-class laboratories and a cadre of skilled laboratorians capable of rapidly taking genomic sequence data and developing assays. The outbreak of COVID-19 was recognized by public health authorities in China at the end of December 20 19, and days later genomic sequence data for the putative etiologic agent were published by Chinese health authorities. Within a week, a diagnostic polymerase chain reaction was developed,

validated, and published by the CDC, just in time to confirm the first cases in the United States. We can only do such quick work with sustained and enhanced laboratory capacity at the CDC as well as at state and territorial health departments.

WORKFORCE OF EXPERT PRACTITIONERS

Public health professionals are our biggest asset, and governmental public health agencies need to be able to accelerate the expansion of a workforce of expert practitioners to serve as disease investigators and health ambassadors here in the United States and around the world. The CDC's Epidemic Intelligence Service (EIS) officers have been instrumental in responding to every modern public health emergency in recent history. EIS officers are critical to federal, state, tribal, and local capacity to detect and respond to health threats, and yet we are training fewer officers today than ever because of funding reductions (at its height, the CDC trained 80 disease detectives a year). Currently, there are only 62 available slots in next year's cohort. Likewise, cuts at the state and local level have resulted in fewer public health professionals across all functional areas, including public health preparedness experts, epidemiologists, disease investigation specialists, and many others.3 Further reductions may create uneven response capacity and readiness in the future, potentially compromising our nation's health security at a time when it is needed the most.4

INTERNATIONAL COLLABORATION AND DOMESTIC HEALTH SECURITY

Many ofthe infectious diseases that threaten the United States emerge outside the country, including the Zika virus, SARS (severe acute respiratory syndrome), MERS (Middle East respiratory syndrome), H1N1 and other influenzas, Ebola, and of course COVID-19. Responding to these diseases at their source, rather than awaiting their arrival on our shores, is the best and most prudent public health approach. CDC teams and state and territorial health officials work closely with world health experts in various countries overseas. The CDC embeds staff in, or partners with, ministries of health in more than 60 countries as well as in most state and territorial health departments and many tribal, county, and city public health agencies. Increasing the number of CDC public health advisors and technical specialists who can work side-byside with staff in ministries of health and other governmental public health agencies means a higher likelihood of detecting threats and preventing a disease's spread. An outbreak anywhere across the globe is a potential danger to our health security: almost any place on earth is within a 24-hour flight from a major US airport. The outbreak in Wuhan, China, reminds us just how interconnected the world is and the threats that global travel pose for our nation's health security.

RESTORING PREPAREDNESS INVESTMENTS

Our global interconnectedness is why the CDC needs a strong global health security capacity and complementary domestic public health preparedness capabilities. After the events of September 11, 2001 and the anthrax attacks that same October, Congress invested significant resources in federal, state, and local public health preparedness programs. In 2018, Congress also established the Infectious Disease Rapid Response Reserve Fund to provide needed resources to public health departments during outbreaks and other emergencies. The United States has a robust emergency response capacity in federal, state, territorial, local, and tribal public health agencies, and this capacity has been built in large part by these investments. However, from federal fiscal year (FFY) 2002 to FFY2019, the budget for CDC's Public Health Emergency Preparedness cooperative agreement has been reduced by almost one third (from $940 million to $675 million),5 and public health threats, like COVID-19, continue to increase. As a result, the entire public health system is strained during large scale outbreaks and epidemics. Congressional leadership to bring our public health preparedness investments back to at least FFY2002 levels should be a common-sense priority for federal legislators, regardless of political party.

PREPAREDNESS FOR CONCOMITANT DISASTERS

Imagine a scenario that involves having to effectively respond to a severe influenza season, control multiple domestic outbreaks ofhepatitis, respond to the health impacts of an earthquake, prepare for severe weather emergencies, and prevent the spread of a novel coronavirus, simultaneously. Indeed, that is not a scenario: it is where we are today. As public health leaders, health officials take the responsibilities of preventing disease and protecting the health of the nation extremely seriously. Governmental public health agencies share a unique and

important mission: they work to keep America healthy 24 hours a day, 7 days a week. Outbreaks like the COVID-19 are critical reminders of the significance of public health readiness and the need for continued strengthening of public health agencies' core response capabilities. COVID-19 also reminds us of the importance of realizing the CDC's bold promise to all Americans with adequate investments in the governmental public health system. Â1PU

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Both authors contributed equally to the preparation of this editorial.

CONFLICTS OF INTEREST

The authors have no conflicts ofinterest to report.

Sidebar

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References

REFERENCES

1.US Centers for Disease Control and Prevention. A Bold Promise to the Nation. Available at http://www.cdc.gov/about/24-7/index.html. Accessed February 3, 2020.

2. Council of State and Territorial Epidemiologists. Driving Public Health in the Fast Lane: The Urgent Need for a 21st Century Data Superhighway. Available at http://resources.cste.org/datasuperhighway/mobile/index.html. Accessed February 3, 2020.

3. Sellers K, Leider J, Gould E, et al. The state of the US governmental public health workforce, 2014-2017. Am J Public Health. 2019;109(5):674-680.

4. Trust for America's Health. Ready or Not: Protecting the Public's Health From Diseases, Disasters, and Bioterrorism (February 2019). Available at https://www. tfah.org/report-details/ready-or-notprotecting-the-publics-health-fromdiseases-disasters-and-bioterrorism-2019. Accessed February 3, 2020.

5. Trust for America's Health. Ready or Not: Protecting the Public's Health From Diseases, Disasters, and Bioterrorism (February 2020). Available at https://www. tfah.org/report-details/readyornot2020. Accessed February 8, 2020.

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Visionary Leadership, Visionary Goals: NPHW@25

Anonymous

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ABSTRACT (ENGLISH)

On May 25, 1961, President John F. Kennedy announced before a special session of Congress that it was the goal of the United States of America to land a man on the moon and bring him safely home within the decade. At the time, many felt this was an unrealistic goal because much of the technical science and math were unknown. But we were in a space race and the Soviet Union was way ahead of the United States in both experience and space science, having been successful in both sending up the first space satellites and the first man and woman to orbit the earth. There were numerous challenges that the United States needed to overcome beyond the science if we were going to achieve this: the extraordinary cost ($25 billion, or $125 billion in today's costs) and the need to marshal and focus public support and political will. It was indeed an ambitious goal, some might even say unrealistic. But what it really was, was visionary-leadership at its best.
Kennedy believed strongly in the capacity of the US science community, in particular the newly created National Aeronautics and Space Administration, which already had this idea but as a longer term goal. The president trusted that his scientists could accomplish this if he championed the effort, convincing Congress to provide the funding and the political support. He understood that essential to this was having focus and building public support. So Kennedy set a visionary goal, got the money, and rallied the public. In one of his most famous speeches, at Rice University, he stated, "We choose to go to the moon.... We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard." On July 20, 1969, the United States successfully landed humans on the moon and returned the astronauts safely to earth.

FULL TEXT

On May 25, 1961, President John F. Kennedy announced before a special session of Congress that it was the goal of the United States of America to land a man on the moon and bring him safely home within the decade. At the time, many felt this was an unrealistic goal because much of the technical science and math were unknown. But we were in a space race and the Soviet Union was way ahead of the United States in both experience and space science, having been successful in both sending up the first space satellites and the first man and woman to orbit the earth. There were numerous challenges that the United States needed to overcome beyond the science if we were going to achieve this: the extraordinary cost ($25 billion, or $125 billion in today's costs) and the need to marshal and focus public support and political will. It was indeed an ambitious goal, some might even say unrealistic. But what it really was, was visionary-leadership at its best.
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HEALTHIEST NATION

Eyal and Sjostrand remind us in this issue of AJPH of the importance of thinking carefully about setting goals in public health (p. 480). They explore the concept of "unrealistic goals" and debate the pros and cons of setting them. In this exploration, they review public heath efforts that have been successful in achieving their goal and many that have not. In many cases the goals seemed unrealistic to begin with. They debate whether setting an ambitious goal is useful in motivating action or undermining the credibility of public health.

One could argue that many of these goals were visionary, were clearly hard to do but not unrealistic in general concept. In many cases, the goals were not met because the resources, political will, and public support to achieve them were lacking. Imagine if we were serious about universal health coverage, or eliminating polio, or zero preventable deaths from childhood tuberculosis. In these cases we actually have the science but lack the funding and political will. Suppose we as a society decided that health equity was an important human right and a priority requiring all of our efforts to address. We actually have the knowledge about what causes many health inequities but have failed to act decisively.

A visionary goal requires visionary leadership to achieve it. Visionary leaders create a visionary goal and then lead others to achieve it. But that is the first step: achieving it requires the leader to focus, build public and political support, and acquire the resources to make it happen. The American Public Health Association (APHA) believes that the United States does not get the best value for our health care dollar, spending almost twice as much as the other industrialized nations yet remaining at the bottom in a variety ofhealth measures, including mortality. The culprit is not lack of knowledge; it is misplaced funding and low levels of public support and political will. That is why we have set a visionary goal of being the healthiest nation in one generation. Our metrics are those of our nation designated by the US Department of Health and Human Services, currently Healthy People 2020.

These metrics are mostly achievable and in some cases are stretched metrics requiring extra efforts to achieve them. But in terms of the overall goal of being the healthiest nation in a generation, I would argue it is both visionary and achievable with visionary leadership. The United States could decide to fix our fractured health care system, focus more on prevention, address the social determents of health with intention, and once and for all achieve universal health care coverage. If we did this we could make it happen. It does, however, require a Herculean effort equivalent to the moon shot to make this happen-an effort that builds the support and resources to make health a shared value.

At the APHA we get up every morning to provide the visionary leadership to make this happen.

NPHW@25

April 2020 marks the 25th anniversary of President William J. Clinton's formal designation of National Public Health Week. The first full week in April is a time for the public health community to measure our successes, adjust goals, set new ones, and build public support for public health. This year's theme, "NPHW@25: Looking Back, Moving Forward," is designed to stimulate visionary thinking that is informed by the past. It is an important celebratory, educational, and planning activity that brings together the more than one million public health practitioners, policymakers, the media, and the general public in efforts to improve the public's health. During this special anniversary week, the public health community will consider many health goals; people another 25 years from now will assess whether they were achieved and, if not, question their realism.

As we set these goals, we should carefully consider the perspectives that Eyal and Sjostrand have given us in this issue of the AJPH. At the APHA we have set a public health equivalent to Kennedy's goal to go to the moon. We do want our next generation to become the healthiest, not by other nation's populations getting sicker but by deploying the best of our resources and knowledge. NPHW@25 is an opportunity for the public health community to provide the visionary leadership to achieve this most realistic goal. Â1PU

Georges C. Benjamin, MD

Sidebar

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The Public Health Value of Hospitals/Comments

Fine, Michael [1] ; Gabow, Patricia A [1] Blackstone Valley Community Health Care Inc, Pawtucket, and the Cities of Central Falls and Pawtucket, RI

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ABSTRACT (ENGLISH)

Simply put, the public health value-or risk-of hospitals is unknown. It is too late to invoke the precautionary principle in public policy decisions about the number and location of hospital beds, as hospitals have acquired a public policy and political life of their own. Butitisthe time to subjectthe public health impact ofhospitals to the same scrutiny that has been used to assess and then champion the public health value ofprimary care.

FULL TEXT

Simply put, the public health value-or risk-of hospitals is unknown. It is too late to invoke the precautionary principle in public policy decisions about the number and location of hospital beds, as hospitals have acquired a public policy and political life of their own. Butitisthe time to subjectthe public health impact ofhospitals to the same scrutiny that has been used to assess and then champion the public health value ofprimary care.

HEALTH CARE SPENDING

Hospitals in the United States consume 30% to 40% of our health care spending, or more than$1 trillion per year, of which between 57% and 65%, or $570 to $650 billion or more, are public funds (https://go.cms.gov/2Siv5jJ; https://go.cms.gov/2ufvdbF).1

There were about 145 million visits to US hospital emergency departments in 2016, of which between 8% and 62% were ambulatory-sensitive, and 60% were paid for by public funds (http://bit.ly/2RuMpSh).2 Of those people seen in hospital emergency departments, 86% were not admitted to a hospital (http://bit.ly/2RuMpSh).

Primary care consumes about 5% of our health care spending, or about $182.5 billion per year. Primary care supply (the number of primary care physicians per 100 000 population) is associated with lower costs, reduced health disparities, lower infant mortality, lower all-cause premature mortality, lower cause-specific premature mortality,

lower all-cause mortality, and longer life expectancy for Medicare patients and for the nation as a whole.3 But associations between the number and location ofhospitals and total health care costs, health disparities, infant mortality, premature mortality, and life expectancy have not been rigorously studied.

DISTRIBUTION

In the United States, the number and location ofhospitals resulted as much from happenstance as from epidemiologically driven health planning. Hospitals evolved from private physician practices or from almshouses, often stimulated by the charitable work of wealthy people concerned about the well-being of the poor, during a period when most wealthy people could afford physician care in their homes and when physician and nursing care was the most technologically advanced intervention medicine had to offer.4,5 Some hospitals evolved out of tuberculosis sanatoriums, while others were created to isolate infected patients with leprosy, while still others were built by the US government to care for merchant seamen or veterans. But few were designed to address public health outcomes because most hospitals were founded before public health outcomes and costs were rigorously studied, but also before we understood that medical care generally has relatively little impact on public health outcomes and before we understood that hospitals care for only a tiny fraction of the population at risk for premature death.6,7

A HEALTH CARE SYSTEM

Still, hospitals are the closest approximation of a health care system-a single set of services, close to most communities and open to everyone-that exists in the United States. The HillBurton Act of 1946 required that any hospital accepting federal funding not discriminate among patients based on ability to pay (as it institutionalized segregation by race in hospitals!) and the Emergency Medical Treatment and Labor Act of 1986, which requires hospitals that accept Medicare to provide emergency services without regard to patients' ability to pay, together made hospital care the only health care service available to all Americans (https:// go.cms.gov/36gmTWe; http:// bit.ly/2sK2Y42). Hospitals are the site of virtually all graduate medical education, engage in research, and provide the clinical experience necessary for the teaching of all medical, nursing, and other health professional students. Hospitals have become community resources, and, from the public's perspective, the center of local health care systems and the health safety net. At the same time, hospitals became major employers-often the single largest employer in many communities and states-giving them political and social import far beyond any public health value they may or may not have.

Rural hospitals are often the only source of the inpatient and outpatient services in the communities they serve. Urban hospitals often duplicate services and compete for patients as they struggle to survive in a competitive marketplace.

But some hospital services may represent legacy technology or profit opportunities, as some services with healthy profit margins may be offered to subsidize other needed services. Most imaging and elective surgery is now done in the ambulatory arena. Many surgical procedures that once required a week or more of inpatient care can be done on an ambulatory basis or with a single night's inpatient stay. Most dialysis is done at outpatient facilities. Most antibiotics can be administered by the oral route, and with the evolution of home health services and home infusion services, antibiotics and other medications that require intravenous delivery can now be administered in the patient's home.

PUBLIC HEALTH VALUE AND RISK OF HOSPITAL SERVICES

Hospitals likely have both public health value and public health risk. Emergency medical care and trauma care have likely contributed to the decline in the age-adjusted death rate from diseases of the heart, stroke, and motor vehicle accidents between 1958 and 2017, and to the significant improvement in the infant mortality rate in those years. But many other factors-the reduction in smoking prevalence, diagnosis and treatment ofhypertension and hypercholesterolemia, improved safety features of motor vehicles and roads, the wide use of early prenatal care, and other medical and public health programs- have also contributed significantly (http://bit.ly/2TAoOSC).

The public health risks of hospitals include the risks of nosocomial infection, iatrogenic injury, and those associated with overtreatment, particularly the overtreatment that results from a competitive hospital environment, where

perverse financial and malpractice risk incentives may cause hospital-based health professionals to overuse expensive imaging technologies and surgical and other invasive interventions. The impact ofthese risks has been widely reported, and is estimated to range from 100 000 to 250 000 premature deaths per year. But these premature deaths are not all attributable to hospital care and are not included as leading causes of death by the Center for Vital Statistics, so their importance cannot be weighed against other causes of premature death in assessing the public health risk of hospitals themselves.

SPENDING WISELY

We spend a trillion dollars a year on hospital care, money that could help improve public health outcomes by funding state and local departments ofpublic health; by investing in lead poisoning prevention, smoking cessation, substance use disorder prevention and treatment, and HIV and hepatitis C screening and treatment; and by investing in public housing, public transportation, education, community development, and primary health care, ifit were shown that hospital care does not have significant public heath value. Or, conversely, if the public health value of hospitals were established by rigorous epidemiological analysis, we could put those facts to work, reminding the public and policymakers of the huge costs of our collective failure to adequately address the social determinants of health.

ÂfPU

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REFERENCES

1. WoolhandlerS, HimmelsteinDU. The current and projected taxpayer shares of US health costs. Am J Public Health. 2016; 106(3):449-452.

2. Uscher-Pines L, Pines J, Kellermann AM, Gillen E, Mehrotra A. Emergency department visits for non urgent conditions: systematic literature review. Am J Manag Care. 2013;19(1):47-59.

3. Woolf SH, Aron LUS. Health in International Perspective: Shorter Lives, Poorer Health. Washington, DC: National Academies Press; 2013: 4.

4. Starr P. The Social Transformation of American Medicine: The Rise of a Sovereign Profession and the Making of a Vast Industry. New York, NY: Basic Books; 1982: 146-179.

5. Stevens R. In Sickness and in Wealth: American Hospitals in the Twentieth Century. New York, NY: Basic Books; 1989: 17-51.

6. McGinnis JM, Williams-Russo P, Knickman JR. The case for more active policy attention to health promotion. Health Aff(Millwood). 2002;21(2):78-93.

7. Green LA, Fryer GE, Yawn BP, Lanier D, Dovey SM. The ecology of medical care revisited. N EnglJMed. 2001;344(26): 2021 -2025.

Patricia Gabow Comments

American health care costs too much and delivers too little. Hospitals contribute to this problem, but the problems do not emanate primarily from hospitals lacking public health value-a possibility Michael Fine (p. 453) asks us to consider. Let us look through the World Health Organization definition of health as a "state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity.1 In aggregate, health care contributes 10% to 15% and the social determinants 50% to health. No part of the health care system alone or in combination can deliver population health. The central questions focus on hospitals' contribution to health care and

social care and their role in linking the two.

HOSPITALS' CONTRIBUTION TO HEALTH

Hospitals' most obvious contribution is life-saving care. There is no health without life. Hospitals provide more than 70 million non-ambulatorysensitive emergency department visits; 36 510 207 hospital admissions, including 3 693 124 births; and 730 292 547 ambulatory care visits per year.2 Trauma is the top killer for people aged 1 to 45 years.3 These young people depend on hospitals for survival. Hospitals stand in the breach in public health emergencies. What other component of the health system could provide these essential public health services? Could it be done better and less costly? Should their contributions be examined? Of course. All components should have those bars.

Income, education, behaviors, and resources such as housing and food are key social health determinants. Fine notes hospitals' role as employers, educators, and community anchors. Hospitals employ almost 6 million people and train more than 140 000 health care professionals per year.4 They make contributions to other key social determinants.

SAFETY NET HOSPITALS' CONTRIBUTION

But all hospitals are not the same, nor do they all add the same public health value. Academic health centers contribute significantly to research and education. My career leads me to underscore the safety net institutions' unique contributions to public health directly and as a health connector. They are leaders in acknowledging and addressing the social determinates, first, by screening patients for these needs and linking patients to resources. More than 50% of safety net hospitals are in medically underserved areas, embedded in areas with almost 24 million people living below the federal poverty level.4 They are leaders in integrating system components- an essential step in better health and lower costs. Thirtytwo have formal relationships with their public health departments. 4 Some like Denver Health and Cambridge Health Alliance operate both the public and personal health systems-an integration all public hospitals and health departments should aim to achieve. Denver Health and other safety net institutions include the community health centers and school-based clinics, important links in the public health chain-another system goal. Safety net institutions are leaders in addressing food availability as key to health, operating food pantries, meal delivery, and community gardens.5 Some, like Denver Health, run Special Supplemental Nutrition Program for Women, Infants, and Children programs, linking their maternal-child health with nutrition. Safety net institutions understand the health role of stable housing, and a number have supportive housing initiatives, often as part of the larger anchor institution effort.5 Safe communities are essential, especially for the most vulnerable.

Safety net institutions link their emergency and trauma missions to violence-prevention efforts.5 While often overlooked, the legal system is critical to the health, not only through public health regulation but also to individuals. Safety net institutions were the first to grasp this, creating medical- legal partnerships to help patients address legal barriers to health.6

Hospitals are far from perfect. They have significant issues of cost, access, quality, and equity that they must address. But hospitals, especially safety net institutions, add major public health value-value that others could not easily add. Every health system component needs to focus on effectively and efficiently integrating with each other and with the social care system. Only by working together can we fix America's broken health care system.

Patricia A. Gabow,MD,MACP

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REFERENCES
1. World Health Organization. Constitution. Available at: https://www.who. int/about/who-we-are/constitution. Accessed December 18, 2019.
2. AHA Hospital Statistics. 2019 Edition. Chicago, IL: Health Forum; 2019.
3. Centers for Disease Control and Prevention, Injury Prevention and Control. Ten leading causes of death and injury. Available at: https://www.cdc.gov/ injury/wisqars/LeadingCauses.html. Accessed December 18, 2019.
4. America's Essential Hospitals. Essential data: our hospitals, our patients. April 2019. Available at: https:// essentialhospitals.org/wp-content/ uploads/2019/04/AEH-Essential-Data- Our-Hospitals-Our-Patients-April-2019. pdf. Accessed December 10, 2019.
5. Ramiah K, Roberson B, Schrag J, et al. Population health at essential hospitals: findings from moving to action for hospitals and population health. Essential Hospital Institute. November 2016. Available at: https://essentialhospitals. org/wp-content-uploads/2016/11/ RWJF-Report_HighRes.pdf. Accessed December 10, 2019.
6. Sandel M, Hansen M, Kahn R, et al. Medical-legal partnerships: transforming primary care by addressing the legal needs of vulnerable populations. Health Aff(Millwood). 2010;29(9):1697-1705.

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The Rights of Nature and the Future of Public Health/Comments

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ABSTRACT (ENGLISH)

We are in the midst of a worldwide public health emergency. In October 2019, 11000 scientists from more than 150 countries declared that human consumption and corporate overreach were degrading ecosystems and driving more than a million species to extinction, including humans.1 The collective impact ofdysregulated climate; disruption of the water, phosphorous, and nitrogen cycles; and the collapse of food chains causes widespread trauma, which fosters social and ecological violence. The World Health Organization estimates that avoidable environmental risk factors cause 12.6 million deaths each year around the globe.2 Our current crisis is undoing 50 years of gains in public health.3 Such ecological devastation is associated with increased suicide, depression, isolation, and addiction.4 Those who suffer most from these ecological threats are least responsible: indigenous peoples, people who are poor, and communities of color.

Public health is faced with a choice at this critical moment. Do we continue with business as usual, addressing the diseases of modernity, such as heart disease, without questioning the values underlying modernity? Or do we do what we in public health are best suited to do: transform the paradigm of health to be more inclusive and better encompass our current challenges?

FULL TEXT

We are in the midst of a worldwide public health emergency. In October 2019, 11000 scientists from more than 150 countries declared that human consumption and corporate overreach were degrading ecosystems and driving more than a million species to extinction, including humans.1 The collective impact ofdysregulated climate; disruption of the water, phosphorous, and nitrogen cycles; and the collapse of food chains causes widespread trauma, which fosters social and ecological violence. The World Health Organization estimates that avoidable environmental risk factors cause 12.6 million deaths each year around the globe.2 Our current crisis is undoing 50 years of gains in public health.3 Such ecological devastation is associated with increased suicide, depression, isolation, and addiction.4 Those who suffer most from these ecological threats are least responsible: indigenous peoples, people who are poor, and communities of color.

Public health is faced with a choice at this critical moment. Do we continue with business as usual, addressing the diseases of modernity, such as heart disease, without questioning the values underlying modernity? Or do we do what we in public health are best suited to do: transform the paradigm of health to be more inclusive and better encompass our current challenges?

Through growing attention to social determinants of health, we now recognize that the zip code is a stronger determinant of health than our genetic code.5 But we need to keep pushing. In every zip code, a type of soil matrix based on a previously rich ecosystem of forests, savannahs, and waterways exists. In every zip code, there are animals and plants that are endangered. In every zip code, there is a water cycle dependent on seas, lakes, and forests that is threatened. In short, we humans are embedded in endangered ecosystems whether or not we are aware of it. In the privileged global north, many of us experience our embeddedness as an economic exchange: buying food, paying for water, and putting filters on indoor air systems. A simple walk in the woods, inhaling the cancer-protective, immune-boosting, and aromatic chemicals that trees exhale, reminds us that a richer relationship with our ecosystem is possible. What if we characterized human health as a process of being in healthy relationship with our ecosystems?

RIGHTS OF NATURE

Human rights are those freedoms meant to ensure that all people can live a life of security, dignity, and well-being. Human rights are primarily between individuals, communities, and states, without regard to ecosystems and the biosphere. Conversely, rights ofnature laws focus on the rights of ecosystems to exist, persist, and regenerate without consideration of human benefit or corporate profit.6 Nature is defined broadly as ecosystems, rivers, streams, lakes, oceans, mountains, and even individual trees. Many governments treat nature's systems as private property and allow owners to set terms of their relationships with their land and water. As private property, 95% ofold growth forest in the United States has been logged, soils are running off into oceans, and water and air are filled with byproducts of industrial production. The dangers of such exploitation can be catastrophic to human health and well-being.

Without rights-based laws, communities such as those in Appalachia trying to protect their mountains and streams and the Oceti Sakowin (the Dakota, Nakota, and Lakota nations) who sought to resist the Dakota Access Pipeline while trying to protect their water and sovereignty have only weak legal tools of public comment periods to assess business permits and regulations based on "maximum acceptable harms." A rights of nature framework helps to move our attention from anthropocentrism to biocentrism, which more fully encompasses the processes by which we can ensure healthy conditions for people and the environment.

RIGHTS OF NATURE ORDINANCES

The rights of nature framework creates new avenues for widespread public health protections. The expansiveness of

nature's interconnected species, waterways, and weather patterns can promote international cooperation. For instance, the Guaraní Aquifer is the second largest freshwater aquifer in the world. It transcends political boundaries as it spans underneath Paraguay, Uruguay, Argentina, and Brazil. The United Nations predicts that there will be a 40% shortfall in water availability by 2030, creating even greater urgency to solidify international cooperation to protect this water source. Rights of nature laws may help prevent future political disputes.

Supplying 20% of the earth's oxygen, the Amazon rainforest is under threat as a result of fires set by multinational corporations supported by the Brazilian government. The plight of indigenous peoples of the Amazon is intricately tied to this ecological devastation, yet they have little political recourse or human rights protections. Indigenous communities have sought to defend their rights to land, water, and air from colonial and corporate encroachment for hundreds of years. Aside from the United Nations International Convention on the Rights of Indigenous Peoples, the rights ofnature have become another avenue for protection. Ecuador and Bolivia have enshrined rights of nature in their constitutions. In New Zealand, the Te Urewera forest and the Whanganui River now have personhood, and members of the White Earth Band of Ojibwe in the United States passed a law formally recognizing the rights of Manoomin, their wild rice, to provide a legal basis to protect their rice and fresh water resources for future generations.

Rights of nature can be used to protect all people in many types of environments. After the deaths of two boys (11 and 17 years of age) from staph infections caused by exposure to toxic sludge, the people of Tamaqua Borough in Pennsylvania used the rights of nature to protect their lands from sludge dumping. Since then, more than 20 communities around the United States have espoused rights of nature to protect water, soil, mountains, and streams. Lake Erie was recently granted rights after a three-day shutdown of the entire city of Toledo in summer 2014 due to contaminated drinking water. These ordinances allow humans to use legal avenues to protect the natural world around them.

Establishing legal rights of nature gives communities leverage, but alone these rights are not enough. We must also condemn the violent tactics of states and corporations seeking profit from lifegiving resources. The Rojava ecological experiment in Syria was recently threatened through US, Russian, and Turkish geopolitical maneuvering. Private police forces terrorize water protectors, guard thousands of acres of avocados in Michoacán, or commit murder as in the case of Berta Cáceres, who was killed while she tried to protect the waters of the Lenca people in Honduras. Since 2000, more than 1000 people have been murdered around the world while trying to protect their water, soil, forests, and food.7

In the United States and Canada, "man camps" built for drilling at the Bakkan oil fields and laying pipelines near indigenous nations contribute to the thousands of missing and murdered indigenous women. These dynamics create widespread individual and collective trauma. The public health community can stand up and protect the rights of nature, and also stand with people who are seeking to protect their health and their natural world.

EXPAND THE PUBLIC IN PUBLIC HEALTH

Public health professionals have long advocated for human rights and for human resilience in the face of climate change. More is needed now. These times require a radical reorientation toward gratitude and respect for humanity's connection to the earth. When we work for the health of the public, we must include all of the public: lakes, oceans, rivers, trees, plants, insects, animals, and humans. ÂfPU

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REFERENCES
1. Ripple WJ, Wolf C, Newsome TM, Barnard P, Moomaw WR. World scientists' warning of a climate emergency. Bioscience. 2020;70(1):8-12.
2. World Health Organization. Worldwide health risks related to climate change are on the rise. Available at: https://www. who.int/globalchange/mediacentre/news/ cop23-23-key-messages/en. Accessed January 31, 2020.
3. Watts N, Amann M, Ayeb-Karlsson S, et al. The Lancet countdown on health and climate change: from 25 years of inaction to a global transformation for public health. Lancet. 2018;391(10120):581-630.
4. Clayton S, Manning CM, Krygsman K, SpeiserM. Mental Health and Our Changing Climate: Impacts, Implications, and Guidance. Washington, DC: American Psychological Association and ecoAmerica; 2017.
5. DeSalvo KB, Wang YC, Harris A, Auerbach J, Koo D, O'Carroll P. Public health 3.0:a call to action for public health to meet the challenges ofthe 21st century. Prev Chronic Dis. 2017;14:E78.
6. Boyd D. The Rights of Nature: A Legal Revolution That Could Save the World. Toronto, Ontario, Canada: ECW Press; 2017.
7. Global Witness. Enemies of the state? How governments and business silence land and environmental defenders. Available at: https://www.globalwitness. org/en/campaigns/environmentalactivists/enemies-state. Accessed January 31, 2020.
Micheline Ishay Comments
In their editorial, Chilton and Jones (p. 459) alert us to a worldwide public health emergency associated with a degrading ecosystem that fosters violence and undermines the less privileged. Their clarion call is warranted but not always heard.
How do we get out of this situation? Chilton and Jones recommend elevating the rights of nature as a more viable framework than human rights for addressing the crisis of public health on the basis of the claim that human rights fail to include concerns for ecosystems and the biosphere. In addition, beyond legal ordinances, they call for a worldwide collaboration and the reclamation of all that is public to promote a broader public health agenda.
Chilton and Jones's environmental concerns are real, as public health demands environmental protection. Their understanding of human rights, however, is narrow with respect to ecological issues. Replaying an old debate between biocentric (viewed as rights of nature) and anthropocentric (understood as human rights) approaches, they pledge allegiance to the former at the expense of the latter. Between these two stylized poles, they overlook that the human rights movement and legal instruments have long incorporated competing yet inalienable rights, including the right to health, the right to work, and the right to cleaner and sustainable environments.
Indeed, the language of human rights remained for decades a rationale for critical global environmental efforts responsive to the crisis of international public health. Revised international labor standards such as the 1989 Indigenous and Tribal Peoples Convention focused on the specific social, cultural, economic, and environmental conditions of indigenous workers. From the 1992 environmental conference held in Rio and the 1997 Kyoto agreement to the 2015 Paris Climate Accord, a human rights framework was reaffirmed to promote the rights of people disproportionately affected by climate change.
Chilton and Jones insist on rights of nature as more inclusive than human rights. But wouldn't extending rights to nature also threaten human rights? Hasn't historical progress toward human rights depended in part on constraining the threats posed by nature-from predation by other species to controlling floods, a spectrum of dangers to which the wretched of the earth remain exposed? Should nature be entrusted with an unconditional right, sui generis, unregulated by a human rights compass? In 1948, the drafters of the Universal Declaration of Human Rights understood rights as universal, inalienable, and indivisible. That principle leads directly to affirming that the human right to health is universal, inalienable, and indivisibly connected with the right to a clean and sustainable

environment. In that sense, the specific rights accorded to nature (sustainable ecosystems, clean air and water) are derived from their necessity for sustaining universal human rights to life and health.

True, the consequences of heedless human interference with nature have been neglected at great cost to human rights. "Let us not flatter ourselves overmuch on account of our human conquests over nature," warned Frederick Engels prophetically close to two centuries ago. "For each such conquest takes its revenge on us."1(pp179-180) But one could add, if nature was accorded inalienable rights, should a whimsical nature have the last word? Would it be guided by the sword? Providence? The invisible hand? Or should it be regulated by strengthened national and international institutions? Legal codifications may not be sufficient, Chilton and Jones correctly remind us, but they remain an important moral barometer for political action. The public has a role, as they point out. But the public, one should add, can be confused if misinformed and disorganized.

Chilton and Jones are correct that the health hazards stemming from environmental degradation and human-caused climate change need immediate response. Yet political support for that effort will emerge from wider support for universal human rights to life, health, and sustainable economic development, as well as civil rights, rather than from some transcendent right belonging to nature itself. It is only on this basis that we can distinguish assaults on the natural world that endanger our basic rights from constraints on nature that advance those rights.

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CONFLICTS OF INTEREST

The author reports no conflicts of interest.

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REFERENCES

1. Engels F. Dialectics of nature. In: Parsons H, ed. Marx and Engels on Ecology. Westport, CT: Greenwood Press; 1977: 179-180.

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Provision of Social Services and Health Care Quality in US Community Health Centers, 2017

Kranz, Ashley M, PhD [1] ; Mahmud, Ammarah, MPH [1] ; Agniel, Denis, PhD [2] ; Damberg, Cheryl, PhD [2] ; Timbie, Justin W, PhD [1] [1] RAND Health Care, RAND Corporation, Arlington, VA [2] RAND Health Care, RAND Corporation, Santa Monica, CA

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ABSTRACT (ENGLISH)

Objectives. To describe the types of social services provided at community health centers (CHCs), characteristics of CHCs providing these services, and the association between on-site provision and health care quality. Methods. We surveyed CHCs in 12 US states and the District of Columbia during summer 2017 (n = 208) to identify referral to and provision of services to address 8 social needs. Regression models estimated factors associated with the provision of social services by CHCs and the association between providing services and health care quality (an 8-item composite). Results. CHCs most often offered on-site assistance for needs related to food or nutrition (43%), interpersonal violence (32%), and housing (30%). Participation in projects with community-based organizations was associated with providing services on-site (odds ratio =2.48; P =.018). On-site provision was associated with better performance on measures of health care quality (e.g., each additional social service was associated with a 4.3 percentage point increase in colorectal cancer screenings). Conclusions. Some CHCs provide social services on-site, and this was associated with better performance on measures of health care quality. Public Health Implications. Health care providers are increasingly seeking to identify and address patients' unmet social needs, and on-site provision of services is 1 strategy to consider. (Am J Public Health. 2020;110:567-573. doi:10.2105/AJPH.2019.305519)

FULL TEXT

Headnote

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Conclusions. Some CHCs provide social services on-site, and this was associated with better performance on measures of health care quality.
Public Health Implications. Health care providers are increasingly seeking to identify and address patients' unmet social needs, and on-site provision of services is 1 strategy to consider. (Am J Public Health. 2020;110:567-573. doi:10.2105/AJPH.2019.305519)

Mounting evidence suggests that social determinants of health (SDOH), inclusive of social, behavioral, and economic factors and the physical and built environments, strongly influence an individual's health.1 Recent studies report that lack of stable housing, limited incomes and education, and food insecurity are associated with poor mental and physical health,2 worse outcomes for patients with diabetes,3 and overall poor health outcomes.4 Some have estimated that SDOH explain more than 80% of the differences in population health outcomes.5 There is increasing attention to addressing SDOH in primary health care settings. Professional associations are encouraging screening for social needs,6,7 and state Medicaid programs are offering flexibility in paying for nonmedical services.8 There is also growing federal, state, and communitywide engagement to test strategies to better align health and social services-for example, the Centers for Medicare and Medicaid Services' Accountable Health Communities initiative.9

Many studies have examined the effects of addressing social needs in medical settings. A 2017 systematic review of interventions to address patients' social needs in medical settings found 67 studies, of which all interventions included screening for SDOH followed by varying approaches for linking patients with on-site or external resources (e.g., use of resource sheets, navigators, or community health workers).10 Only a minority of these studies, however, examined the effects of SDOH interventions on health (30% of studies) or health care cost or utilization (27% of studies), with interventions leading to mixed but mostly positive results for these outcomes. Despite these mostly positive findings, a recent nationally representative survey of medical practices reported that only 15.6% ofpractices reported screening for 5 common social needs: food insecurity, housing instability, utility needs, transportation needs, and interpersonal violence.11 Moreover, evidence suggests that patients who are referred for social services from health care providers do not always receive them.10

Community health centers (CHCs) are nonprofit, community-focused primary care providers that treat all patients regardless of ability to pay and are well positioned to address their patients' social needs. CHCs provide primary care to more than 27 million patients annually, many of whom have complex medical conditions and high need for social services.12 CHC patients often have difficulty meeting their basic needs; more than half rely on public insurance, 23% are uninsured, 92% have incomes at or below 200% of the federal poverty level, and about 1.4 million patients are homeless.13 CHCs were early adopters of screening for SDOH and are more than twice as likely to screen for SDOH as the average medical practice.11 However, rigorous evidence regarding the effects of addressing social needs in CHCs is limited. The recent systematic review included only 4 studies focused on CHCs,10 and none ofthese studies were designed to address social needs on-site.14 17

To address patients' unmet social needs, some CHCs have sought to provide some of these services on-site. For example, a CHC in Connecticut is enrolling eligible patients in the Supplemental Nutrition Assistance Program (SNAP) and offering snacks where behavioral health services are offered, a CHC in Illinois offers exercise and cooking classes on-site, and a CHC in California offers job training on-site.18 On-site provision of social services can help address patients' SDOH immediately upon screening, which may help to ensure successful completion of referrals as patients do not have to schedule additional visits across multiple days at different locations. Although on-site provision of social services may be a promising strategy for some CHCs, it requires both physical space, operational support, and additional funding. Given the resources needed to support these efforts, it is important to understand the characteristics of CHCs engaging in this strategy and the types of services that are being offered. Additionally, although prior studies have primarily focused on evaluating individual interventions,10 less is known about the population-level impact of these types ofinterventions across a wide range of social needs. Given CHCs' emphasis on tracking and improving population health and health care providers' increasing interest in screening for and addressing social needs, it is important to know if offering conveniently located on-site social services is associated with population health improvements.

To fill this gap in the literature, we combined a survey of CHCs in 12 states and the District of Columbia with information on CHC characteristics and measures of health care quality from the Health Resources and Services Administration (HRSA). We used these data to describe the types ofsocial services that CHCs either refer their patients to or provide on-site, assess how common these activities are for each service, and examine the factors associated with on-site provision ofsocial services. Additionally, we explore the association between on-site provision ofsocial services and performance on an aggregate measure of population health and health care quality.

METHODS

Our conceptual model for this study was informed by Maslow's hierarchy of needs, which illustrates how basic human needs must be met for individuals to reach their full potential.1 We extended this model to illustrate approaches to screening and addressing social determinants of health in primary care settings.20 Building on these models, we hypothesized that CHCs' provision ofsocial services on-site is likely to reduce time, transportation, and logistical barriers to receiving social services by patients and therefore lead to fewer unmet social needs, which should give patients the time and energy to focus on obtaining preventive health care services and making other healthy choices.

Data Sources

We administered a Web-based survey during summer 2017 to medical directors at 407 HRSA-funded CHCs in 12 states (CA, CO, IL, LA, ME, MN, NJ, OR, UT, VT, WA, WI) and the District of Columbia. We purposely sampled these states to include those with active Medicaid accountable care organization programs at the time of the survey (7 states: CO, ME, MN, NJ, OR, UT, and VT), as we hypothesized that these programs might encourage CHCs to address SDOH using diverse strategies. We supplemented this sample with 5 additional states (CA, IL, LA, WA, WI) and the District of Columbia to improve geographic diversity and to include states that expanded Medicaid under the Affordable Care Act and those that did not. HRSA's Uniform Data System database provided contact information for medical directors, CHC characteristics, and measures of health care quality.

Survey

The survey's goal was to gather information about how CHCs collaborate with hospitals, specialists, and community-based organizations (CBOs),21 with the latter being the focus of this article. We informed survey items by reviewing the literature and interviewing subject matter experts and representatives of CHCs and state primary care associations, which provide training and technical assistance to safety net providers. We used items from existing surveys whenever possible.22-24 We sought comments on the draft survey from primary care associations in all sample states; associations in 6 states provided comments. We conducted 3 cognitive interviews with CHC medical directors outside of our sample to ensure that survey items were eliciting the intended information. The survey was designed to be completed in 30 minutes. We offered CHCs an incentive of a $50 gift card for survey completion, which we later increased to $100 to improve the response rate after 4 weeks in the field.

Variables

Survey items asked CHC respondents about their efforts to address the following 8 social service issues:

1. food or nutrition assistance, including through the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC);
2. interpersonal violence (including intimatepartner violence, elder abuse, and child maltreatment);
3. housing;
4. nonmedical transportation (defined as transportation to work, the grocery store, or other locations for nonmedical activities);
5. utility bills;
6. immigration;
7. employment; and
8. child care and early education.

We purposefully avoided detailed descriptions of these needs to allow CHCs to use their own interpretation ofpatient needs and their efforts to address them. For each of the 8 patient needs, CHCs were asked to check all applicable response boxes regarding provision of services and coordination with CBOs: (1) "Yes, our staff or another organization provides services on-site"; (2) "Yes, we refer patients to 1 or more organizations"; (3) "No, we do not provide or refer"; (4) "No organization is available in our community" (for this survey item, see Appendix A, available as a supplement to the online version ofthis article at http://www.ajph.org). For each CHC, we summed responses to items 1 and 2 to generate counts of social services provided on-site or through referral, respectively.

Survey items also asked about potential facilitators and barriers to CHCs' provision of any social services. One item asked how often in the past 2 years CHCs participated in joint projects and meetings with CBOs. Another item asked how often CHCs send or receive electronic health information with hospitals, which was intended to measure CHCs' use of health information technology. Another asked how often a chaotic environment in the health center affected a CHC's ability to care for patients. Three items asked how often the following factors affected the CHCs' ability to coordinate with CBOs: few CHC staff available to coordinate care, few staff available at CBOs to coordinate care, and insufficient number of CBOs that meet cultural or language needs of patients. We measured responses on a 5-point Likert-type scale (never, rarely, sometimes, often, and always) and dichotomized them by their distribution (often or always vs never, rarely, or sometimes).

Using multiple performance measures from HRSA's 2017 Uniform Data System, we constructed a composite index of performance on measures of health care quality. The composite measure included 2 measures ofhealth outcomes (controlled blood pressure [< 140/90 mm Hg] among patients with hypertension and hemoglobin A1c< 8% for patients with diabetes) and 6 measures of health care processes (screening for colorectal and cervical cancers; appropriate treatment of patients with asthma, coronary heart disease, and ischemic vascular disease; and children's receipt of vaccines). For each CHC, we estimated a composite measure of health care quality using a 2-parameter logistic item response model, a common methodology for aggregating performance measures.25 We estimated these composite measures using maximum likelihood, and we specified the likelihood as a series of logistic regressions predicting each performance measure from the composite. In this sense, the composite can be thought of as the "best" predictor of the individual measures, and it is found by exploiting the correlation between the measures. This approach also models the fact that each measure maybe more or less difficult to achieve and may be better or worse at discriminating CHC quality. Appendix B (available as a supplement to the online version of this article at http://www.ajph. org) includes a full description of the construction of the composite measure. We also obtained the following characteristics of patients and CHCs from the Uniform Data System: percentage of patients that were homeless, uninsured, enrolled in Medicaid, or best served in a language other than English; total patients; primary care providers per 10 000 patients; and rural versus urban location. Of note, we report all Uniform Data System variables at the grantee level, and the survey was administered at the grantee level; each grantee may have multiple practice sites.26

Analyses

For each of the 8 social service needs, we report the percentage of CHCs that provide referrals or offer the service on-site. We describe the characteristics of CHCs, stratified by whether or not they provide any social services on-site. We estimated a logistic regression model to determine factors associated with CHCs' provision of social services. Finally, we estimated ordinary least squares regression models to examine the association between a continuous measure oftotal social services provided on-site and CHC performance on the composite measure of health care quality. We adjusted these regression models for the aforementioned characteristics of CHCs and CHC patients; we performed them with Stata 15.1 (StataCorp, College Station, TX). To contextualize the association between social service provision and the composite measure ofhealth care quality, we used additional ordinary least squares regressions to estimate the association between each component measure and the composite measure ofhealth care quality (e.g., quantifying the average increase in colorectal cancer screening rate for each unit increase in the composite).

RESULTS

Of 407 CHCs invited to participate in the survey, 208 responded (response rate = 51.1%). CHCs responding to the survey were similar to nonresponding CHCs on nearly all characteristics, except that nonresponding CHCs served a higherpercentage ofhomeless patients (full results available in Appendix C, available as a supplement to the online version of this article at http://www.ajph.org). Responding CHCs served an average of about 24 000 patients annually, primarily in urban communities (Table 1). Among the sample, 20.4% of patients were uninsured and 4.2% were homeless.

Compared with CHCs providing no social services on-site, CHCs providing at least 1 social service on-site served larger patient populations, employed more primary care providers, and were less likely to be located in rural areas (Table 1); additionally, they were more likely to participate in joint projects or leadership meetings with CBOs (36.3% vs 19.2%) and less likely to report an insufficient number of CBOs in their communities that meet the cultural or language needs ofpatients (23.7% vs 26.0%). After adjusting for covariates listed in Table 2, we found that CHC participation in joint projects or meetings with CBOs (odds ratio [OR] = 2.48; P = .018), higher primary care provider staffing levels (OR = 1.08; P = .010), and having more patients (OR = 1.19; P = .031) were significantly associated with CHCs' provision of any social services on-site.

Figure 1 illustrates the types of social services for which CHCs referred patients to another organization or that they provided on-site. CHCs were more likely to refer patients for most services than provide services on-site. For

example, more than 70% of CHCs reported referring patients to child care and early education services (77%) and assistance for victims of interpersonal violence (74%). CHCs most commonly reported providing food or nutrition assistance, including through WIC (43%), and assistance for victims of interpersonal violence (32%) on-site. Fewer than 20% of CHCs reported providing the following services on-site: assistance for utility bill payments, immigration, employment, and child care or early education services. Nearly all CHCs reported providing referrals for 1 or more services, whereas nearly 35% of CHCs did not provide any social services on-site (Figure 2). Approximately 1 in 4 CHCs (23%) reported providing only 1 social service and 42% reported providing 2 or more social services on-site. In an adjusted regression model (Table 2), we found that on-site provision of social services was associated with better performance on the composite measure of health care quality. Each additional social service provided on-site was associated with a 0.03unit increase in a CHC's performance on the measure ofhealth care quality (P = .004). Because the composite quality measure does not have a direct interpretation, we estimated how each 0.03-unit increase of the composite was associated with each component measure in the composite. Our models suggest that a 0.09-unit increase on the composite (corresponding to provision of 3 social services on-site compared with no social services) was associated with a 4.3 and 3.8 percentage point increase in rates of colorectal and cervical cancer screening from means of 40.0% and 51.3%, respectively. Associations with other measures were smaller (ranging from 0.4 to 2.5 percentage point increases). Further details, including detailed accounting of the relationship between the composite and the component measures, are available in Appendix B.

DISCUSSION

This study, conducted in 12 states and the District ofColumbia, found that CHCs most commonly reported providing assistance to patients for nutrition, interpersonal violence, or housing, and that nearly two thirds of CHCs provided at least 1 social service onsite. CHCs may be motivated to provide these services on-site because they address more immediate needs related to food, shelter, and safety. Additionally, CHCs may be more likely to provide certain services in response to the funding or policy environment, such as federal funding from the Public Housing Primary Care program to provide housing services27 and HRSA-facilitated training on interpersonal violence and trauma-informed care.28 Fewer CHCs reported providing assistance on-site for selected services, including immigration, employment, and child care needs, although CHCs commonly provided referrals for these services. These lower rates may reflect challenges to offering these types of services or suggest that CBOs in the community already address these needs. For example, addressing immigration issues commonly requires legal assistance, and CHCs that have larger budgets and are located in urban areas might be better able to arrange and subsidize on-site legal aid to immigrants.29 Additionally, employment assistance (e.g., job placement services and career counseling) may be offered by a local government agency or CBO in close proximity to the CHC, making referral a better option.

We found that CHCs with greater organizational capacity, as measured by size and relationships with CBOs, were more likely to offer services on-site. This might be due to the resources required to offer these services, such as physical space and other administrative costs. This likely explains why 35% of CHCs did not provide any social services on-site and those that did had more patients, providers, and engagement with CBOs. Although CHC financial resources are limited, our findings offer insights into strategies that may facilitate on-site provision of social services. We found that CHCs reporting participation in projects or joint meetings with CBOs were more likely to report that they provided social services on-site. These interactions may include meetings to discuss shared goals or pursuing collaborative quality improvement projects. For example, CHCs in San Diego, California, meet monthly with CBOs, along with other health care and government partners, to discuss experiences and best practices for using the Community Information Exchange, an online platform connecting social service and health care providers.30 Because on-site provision ofsocial services may not be feasible or the best solution for all CHCs, other strategies are being used to address unmet social needs. Online portals, for use by both social service and health care providers, are increasingly being used to connect patients to resources and to close the loop on referrals. Both Kaiser Permanente and Veterans Administration medical centers use these types of portals, which include resource directories, allow tracking of social service referrals, and enable bidirectional communication between social service and health care providers.31,32 These virtual portals are also being deployed communitywide; examples include the

longstanding Community Information Exchange in San Diego County30 and the newer NCCARE360 platform available across North Carolina.33 These communitywide solutions can leverage communitywide health outcomes data-such as those from the 500 Cities Project34-for monitoring and evaluating the effects of these strategies on population health.

Limitations

Studies report that unmet social service needs are associated with poor health outcomes,2'3'35 and here we provide evidence that CHCs' on-site provision of social services is associated with better performance on measures of health care quality. Our composite measure of performance primarily included process measures, suggesting that availability of on-site assistance for social services may facilitate patients' receipt of recommended screenings and treatments. This finding is consistent with our conceptual model hypothesizing that CHC provision of social services is likely to reduce barriers to social services, leading to fewer unmet social needs and thus giving patients the time and energy to focus on obtaining health care services. In this cross-sectional study, however, we cannot disentangle whether CHCs that have better performance on measures of health care quality are more likely to offer social services or whether it is the provision of social services that leads to better quality. Given this limitation and our finding that CHCs with greater organizational capacity were more likely to offer on-site provision of social services, we encourage additional research designed to evaluate the causal relationship between on-site provision of social services and health care quality.

Additional limitations of our study include those common to analyses of survey data. Despite cognitive testing of the survey instrument with stakeholders, respondents might have interpreted the survey questions in different ways. Additionally, survey responses were self-reported and may suffer from social desirability bias if medical directors and staff responded to survey items in a way they thought would be viewed favorably instead of accurately. Lastly, CHCs responding to our survey may not be representative of all CHCs nor fully capture the variety of social services that CHCs provide. However, our sample was geographically diverse, and respondents reported variability about services provided and referred.

Public Health Implications

CHC patients often have difficulty meeting their basic needs and may require help finding food, shelter, or employment. Within the context ofwidespread support for screening for social needs6,7 and greater flexibility offered by insurers in paying for nonmedical services,8,9 we found that many CHCs reported providing on-site assistance to patients for nutrition, interpersonal violence, and housing, and that most CHCs provided at least 1 social service on-site. Although on-site provision of social services may not be feasible or even the best solution for all CHCs, addressing SDOH is essential for promoting health care access and improving health outcomes. Given the increasing interest in addressing social needs in medical settings, future research should focus on identifying the best practices used by high-performing CHCs to address patients' SDOH to ensure that all patients have their social and health care needs met. >4jPI-l

CONTRIBUTORS

All authors contributed equally to this article.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

HUMAN PARTICIPANT PROTECTION

This study was ruled exempt and not considered human participant research by RAND's Human Subjects Protection

Committee.

Sidebar

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References

REFERENCES

1. Braveman P, Egerter S, Williams DR. The social determinants of health: coming of age. Annu Rev Public Health. 2011;32(1):381-398.
2. Vásquez-Vera H, Palencia L, Magna I, Mena C, NeiraJ, Borrell C. The threat of home eviction and its effects on health through the equity lens: a systematic review. Soc Sci Med. 2017;175:199-208.
3. WalkerRJ, GebregziabherM, Martin-Harris B, Egede LE. Independent effects of socioeconomic and psychological social determinants of health on self-care and outcomes in type 2 diabetes. Gen Hosp Psychiatry. 2014; 36(6):662-668.
4. Gundersen C, Ziliak JP. Food insecurity and health outcomes. HealthAff(Millwood). 2015;34(11):1830-1839.
5. Hood CM, Gennuso KP, Swain GR, Catlin BB. County health rankings: relationships between determinant factors and health outcomes. Am J Prev Med. 2016; 50(2):129-135.
6. National Association of Community Health Centers. Protocol for responding to and assessing patients' assets, risks, and experiences, 2019. Available at: http://www. nachc.org/research-and-data/prapare. Accessed November 2, 2019.
7. American Academy of Family Physicians. Social determinants of health policy, 2019. Available at: https:// www.aafp.org/about/policies/all/social-determinants. html. Accessed November 1, 2019.
8. Alderwick H, Hood-Ronick CM, Gottlieb LM. Medicaid investments to address social needs in Oregon and California. Health Aff (Millwood). 2019;38(5):774-781.
9. Solomon LS, Kanter MH. Health care steps up to social determinants of health: current context. Perm J. 2018;22: 18-139.
10. Gottlieb LM, WingH, AdlerNE. A systematic review of interventions on patients' social and economic needs. Am JPrev Med. 2017;53(5):719-729.
11. Fraze TK, Brewster AL, Lewis VA, Beidler LB, Murray GF, Colla CH. Prevalence of screening for food insecurity, housing instability, utility needs, transportation needs, and interpersonal violence by US physician practices and hospitals. JAMA Netw Open. 2019;2(9): e1911514.
12. Health Resources &Services Administration. HRSA health center program. 2018. Available at: https://bphc.hrsa.gov/sites/default/files/bphc/about/ healthcenterfactsheet.pdf. Accessed December 1, 2018.
13. Health Resources &Services Administration. National health center week. August 2019. Available at: https://bphc.hrsa.gov/about/healthcenterweek.html. Accessed November 1, 2019.
14. Morales ME, Epstein MH, Marable DE, Oo SA, Berkowitz SA. Food insecurity and cardiovascular health in pregnant women: results from the Food for Families Program, Chelsea, Massachusetts, 2013-2015. Prev Chronic Dis. 2016;13:E152.
15. Garg A, Toy S, Tripodis Y, Silverstein M, Freeman E. Addressing social determinants ofhealth at well child care visits: a cluster RCT. Pediatrics. 2015;135(2):e296-e304.
16. Nguyen AL, Angulo M, Haghi LL, et al. A clinicbased pilot intervention to enhance diabetes management for elderly Hispanic patients. J Health Environ Educ. 2016; 8:1-6.
17. Waitzkin H, Getrich C, Heying S, et al. Promotoras as mental health practitioners in primary care: a multimethod study ofan intervention to address contextual sources of depression. J Community Health. 2011;36(2): 316-331.
18. National Association ofCommunity Health Centers. Case studies. October 2017. Available at: http://www. nachc.org/wp-content/uploads/2017/10/Case-Studies. pdf. Accessed November 1, 2019.

19. Maslow AH. A theory of human motivation. Psychol Rev. 1943;50(4):370-396.
20. Henize AW, Beck AF, Klein MD, Adams M, Kahn RS. A road map to address the social determinants of health through community collaboration. Pediatrics. 2015; 136(4):e993-e1001.
21. Timbie JW, Kranz AM, Mahmud A, Damberg CL. Specialty care access for Medicaid enrollees in expansion states. Am J Manag Care. 2019;25(3):e83-e87.
22. Singer SJ, Burgers J, Friedberg M, Rosenthal MB, Leape L, SchneiderE. Defining and measuring integrated patient care: promoting the next frontier in health care delivery. Med Care Res Rev. 2011;68(1):112-127.
23. Derrett S, Gunter KE, Samaranayaka A, et al. Development and testing of the provider and staff perceptions of integrated care survey. Med Care Res Rev. 2017; Epub ahead of print.
24. The Commonwealth Fund. 2013 survey offederally qualified health centers. May 2014. Available at: https:// www.commonwealthfund.org/sites/default/files/ documents/_media_files_surveys_2014_2013_fqhc_ hard_copy_questionnaire.pdf. Accessed November 1, 2019.
25. Normand S-LT, Shahian DM. Statistical and clinical aspects ofhospital outcomes profiling. Stat Sci. 2007;22(2): 206-226.
26. Bureau ofPrimary Health Care. Uniform data system: reporting instructions for 2016 health center data. 2016. Available at: https://bphc.hrsa.gov/sites/default/files/ bphc/datareporting/reporting/2016udsreportingmanual. pdf. Accessed December 11, 2018.
27. National Association ofCommunity Health Centers. Health care for residents of public housing: program background. 2019. Available at: http://www.nachc.org/ health-center-issues/special-populations/health-carefor-residents-of-public-housing. Accessed November 12, 2019.
28. Health Resources and Services Administration Office of Women's Health. The HRSA strategy to address intimate partner violence. 2017. Available at: https://www. hrsa.gov/sites/default/files/hrsa/HRSA-strategy-intimatepartner-violence.pdf. Accessed August 1, 2019.
29. National Center for Medical Legal Partnership. Health center-based medical legal partnerships: where they are, how they work, and how they are funded. January 2018. Available at: https://www.nachc.org/ wp-content/uploads/2019/08/Health-Center-basedMedical-Legal-Partnerships.pdf. Accessed November 12, 2019.
30. Center for Health Care Strategies. 2-1-1 San Diego: connecting partners through the community information exchange. August 2018. Available at: https://nff.org/ sites/default/files/paragraphs/file/download/2-1-1San-Diego-Case-Study.pdf. Accessed November 11, 2019.
31. Mohanty S. Launching thrive local Kaiser Permanente's social health program. July 16, 2019. Available at: https://www.chcf.org/wp-content/uploads/2019/06/ CINWebinarROIforAddressingSocialNeeds07162019Slides. pdf. Accessed November 11, 2019.
32. US Dept ofVeterans Affairs. Community care. Available at: https://www.va.gov/COMMUNITYCARE/ providers/Care_Coordination.asp. Accessed November 11, 2019.
33. Thomas A, Ferguson E. NCCARE360 building healthier communities through collaboration. N C Med J. 2019;80(5):308.
34. Centers for Disease Control and Prevention. 500 Cities: local data for better health. November 28, 2017. Available at: https://www.cdc.gov/500cities. Accessed November 11, 2019.
35. Leonard T, Hughes AE, Donegan C, Santillan A, Pruitt SL. Overlapping geographic clusters of food security and health: where do social determinants and health outcomes converge in the US? SSM Popul Health. 2018;5:160-170.

DETAILS

Subject:	Population; Public health; Housing; Quality of care; Community involvement; Food stamps; Regression analysis; Regression models; Health care; Cancer; Nutrition; Violence; Health facilities; Social services; Food; Quality; Onsite; Aggression; Health care industry; Community centers; Health services; Primary care; Community participation; Colorectal carcinoma; Systematic review; Medicaid; Health care facilities; Social services delivery; States; Cancer screening; Referrals; Help seeking behavior; Needs; Community organizations; Medical screening
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Expansion of Syringe Service Programs in the United States, 2015–2018

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ProQuest document link

ABSTRACT (ENGLISH)

Objectives. To report on the expansion of syringe service programs (SSPs) in the United States from 2015 to 2018. Methods. We obtained data from records of the Buyers' Club of the Dave Purchase Project/North American Syringe Exchange Network (NASEN), including the number of US SSPs and the numbers of sterile syringes purchased by programs. We conducted a subset analysis of states with high numbers of counties defined as "vulnerable" by the Centers for Disease Control and Prevention. Results. SSP participation in the Buyers' Club increased from 141 in 2015 to 292 in 2018, with an increase in syringes purchased from 42 million to 88 million. In addition to these large increases in numbers of programs and in syringes purchased, there were also indications of instability among new programs in vulnerable states. Conclusions. There have been substantial increases in the number of programs established and the number of syringes distributed in response to the opioid epidemic. Ensuring high-quality services in these new programs will be critical to successfully addressing the current epidemic. (Am J Public Health. 2020;110:517-519. doi:10.2105/AJPH.2019.305515)

FULL TEXT

Headnote

Objectives. To report on the expansion of syringe service programs (SSPs) in the United States from 2015 to 2018. Methods. We obtained data from records of the Buyers' Club of the Dave Purchase Project/North American Syringe Exchange Network (NASEN), including the number of US SSPs and the numbers of sterile syringes purchased by programs. We conducted a subset analysis of states with high numbers of counties defined as "vulnerable" by the Centers for Disease Control and Prevention.

Results. SSP participation in the Buyers' Club increased from 141 in 2015 to 292 in 2018, with an increase in syringes purchased from 42 million to 88 million. In addition to these large increases in numbers of programs and in syringes purchased, there were also indications of instability among new programs in vulnerable states.

Conclusions. There have been substantial increases in the number of programs established and the number of syringes distributed in response to the opioid epidemic. Ensuring high-quality services in these new programs will be critical to successfully addressing the current epidemic. (Am J Public Health. 2020;110:517-519. doi:10.2105/

AJPH.2019.305515)

Since approximately 2000, the United States has been experiencing an opioid epidemic that has reached the stage ofbeing a national public health emergency. Critical aspects of this epidemic have been transitions from prescription opioid analgesics to heroin and illicit fentanyl and from noninjection to injection use.1 The transition to injection use has led to great increases in transmission of hepatitis C virus (HCV)2 and to outbreaks of HIV3 among people who inject drugs (PWID).

Syringe service programs (SSPs; also known as syringe exchange programs) are a primary method for reducing the transmission of infectious diseases among PWID. There is a strong evidence base for the effectiveness of SSPs in reducing HIV transmission among PWID. In addition to providing sterile syringes and injection equipment, US programs have developed into multiservice organizations in many cases, providing testing and linkage to care for HIV and HCV patients as well as linkage to substance use treatment.4 These programs are most often operated by nonprofit organizations or health departments.

From 1988to2016, there was a ban on the use of federal funds to support SSPs in the United States, with only a brief lifting of the ban in 2009. The opioid epidemic and, in particular, the 2014-2015 HIV outbreak among PWID in Scott County, Indiana, led to a partial lifting of the ban, with federal funding approved under certain conditions to support SSP services (although not for purchasing syringes). This HIV outbreak also provided strong encouragement for state and local governments to support SSPs.

We report here on the expansion of SSPs in the United States from 2015 to 2018. We consider these data a progress report on the use of SSPs to address the opioid epidemic.

METHODS

The data presented here were derived from records of the Buyers' Club of the Dave Purchase Project/North American Syringe Exchange Network (NASEN; for a description of NASEN and a map of US SSPs, see https://NASEN.org). The Buyers' Club, initiated in 1993, is a no-cost membership organization that pools the economic power of SSPs to ensure equitable access to the lowest-cost, highest-quality harm reduction supplies. The Buyers' Club receives orders from programs, sends orders to appropriate vendors, invoices programs, and then is invoiced by vendors. Supplies are sent from vendors to programs. QuickBooks Enterprise Solutions: Nonprofit 16.0 (Intuit QuickBooks, Mountainview, CA) is used for processing the orders and was used for generating the data in this study.

Not all SSPs in the United States, Puerto Rico, and the Virgin Islands purchase supplies through the Buyers' Club; however, from our more than 20 years of field experience with NASEN and SSPs in the United States, we estimate that 85% to 95% of US SSPs participate. Given the lack of any national SSP registry, the Buyers' Club provides the best available data on SSPs and on syringes distributed through SSPs in the United States.

Individual SSP purchases of syringes may be quite variable depending on factors such as available funds at the end ofa budget year. We therefore examined purchasing trends at the annual level. We assumed that all syringes purchased would eventually be distributed. We do not present data comparing syringes purchased across states, as data on PWID population sizes in states would be needed for meaningful state-level comparisons.

RESULTS

Figure 1 shows the numbers of SSPs participating in the Buyers' Club and the numbers of sterile syringes purchased through the Buyers' Club during 2015 to 2018. Both the number of SSPs and the number of syringes purchased approximately doubled over this period. Several aspects of these increases in programs and syringes purchased are worth noting. For example, the increases began before the partial lifting of the federal ban in 2016. In addition, there was great variability among states in numbers ofsyringes purchased through the Buyers' Club, including variability in 2015 purchases, variability among increases in purchasing from 2015 to 2018, and variability in 2018 purchases. Information on numbers of PWID and recent changes in these numbers in different states, however, would be needed for meaningful interpretation of this variability and for cross-state comparisons.

The Centers for Disease Control and Prevention has conducted assessments of US counties with respect to vulnerability to HIV and HCV transmission among PWID.5 Table 1 presents the numbers of syringes purchased

through the NASEN Buyers' Club from 2015 to 2018 for the 3 states with more than 20 vulnerable counties each. Syringes purchased clearly increased from 2015 to 2017 but decreased from 2017 to 2018.

SSPs in these states primarily reflect new programs: there were no SSPs in the first quarter of 2015, but from 2015 to 2018, 26 different SSPs were established, with SSPs from all 3 of these states purchasing syringes. There are indications of instability, operational problems, and lack of adequate coverage among the new SSPs in these states. In our Buyers' Club data, 11 ofthe 26 new SSPs had a period of at least 4 quarters without any syringe purchases. As possible reasons for this situation, press reports note community resistance to SSPs, the closing ofa large program in West Virginia, and an outbreak of HIV among PWID.6

DISCUSSION

Estimates of the numbers of individuals in the United States who inject drugs range from 1 520054 in 20077 to 774 434 in 2011.8 (These estimates involved the use of different methods and should not be read as a decrease in the number of PWID.) The technical guidelines of the Joint United Nations Programme on HIV and AIDS regarding coverage of SSPs range from "low" coverage (100 syringes per PWID per year) to "high" coverage (more than 200 syringes per PWID peryear).9 Even with the likelihood that some programs obtained syringes through means other than the Buyers' Club, the current overall provision of sterile syringes in the United States would be considered in or near the low category.

In our NASEN experience, new SSPs often encounter start-up problems, including issues with obtaining adequate funding, finding suitable sites for program operations, hiring and training appropriate staff, and maintaining positive relationships with the larger community and with law enforcement. Restrictions imposed on program operations, such as requiring one-for-one exchange and prohibiting "secondary exchange," may also greatly limit the effectiveness of SSPs (see also the discussion in Jones10). Start-up and restriction issues may be particularly relevant for states with high numbers of vulnerable counties. Resolution of operational and community resistance problems will be critical for the success of new programs.

The increasing use of illicitly manufactured fentanyl should also be mentioned. Relative to heroin, fentanyl is more potent and has a shorter duration of action; in addition, it generates needs for both greater distribution of naloxone to reverse drug overdoses and greater supplies of sterile syringes. The increase in fentanyl use was considered an important factor in the HIV outbreak among PWID in Massachusetts.11

Limitations

We assumed that syringes purchased in a given year are distributed in that year, even though some syringes purchased in one calendar year may not be distributed until the next year. Also, PWID obtain sterile syringes from sources other than SSPs, particularly through nonprescription pharmacy sales. We do not yet have data on these other sources to complement our data on syringes provided by SSPs.

There are currently no valid estimates of the numbers of PWID needed for state-level comparisons. A previous survey of SSP clients from 23 programs showed that the prevalence of homelessness ranged from 25% to 74%,12 and SSPs often devote considerable resources to addressing the needs of homeless PWID. State-level estimates of PWID populations would need to include homeless PWID to accurately estimate needs for SSP services.

Conclusions

The opioid epidemic in the United States has created a great need for increased health and social services for individuals who use drugs. The data presented here clearly show great increases in numbers of SSPs and in numbers of syringes provided between 2015 and 2018. There are, however, potential problems with respect to the operational capacities of new programs and community resistance to providing health and social services to individuals who use drugs. Â1PU

CONTRIBUTORS

D. C. DesJarlais originatedthe article.J. FeelemyerandK. Arasteh contributed to the data analysis and to the editing of the article. P. LaKosky and K. Szymanowski contributed important data and relevant information on the North American Syringe Exchange Network and on syringes purchased by syringe service programs through the Buyers' Club. All of the authors reviewed the article.

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References
REFERENCES
1. Mars SG, Bourgois P, Karandinos G, Montero F, Ciccarone D. "Every 'never' I ever said came true": transitions from opioid pills to heroin injecting. IntJDrug Policy. 2014;25(2):257-266.
2. Valdiserri R, Khalsa J, Dan C, et al. Confronting the emerging epidemic of HCV infection among young injection drug users. AmJ Public Health. 2014;104(5): 816-821.
3. Peters PJ, Pontones P, Hoover KW, et al. HIV infection linked to injection use of oxymorphone in Indiana, 2014-2015. NEnglJMed. 2016;375(3):229-239.
4. Des Jarlais D, McKnight C, Goldblatt C, Purchase D. Doing harm reduction better: syringe exchange in the United States. Addiction. 2009;104(9):1441-1446.
5. Van Handel MM, Rose CE, Hallisey EJ, et al. Countylevel vulnerability assessment for rapid dissemination of HIV or HCV infections among persons who inject drugs, United States. J Acquir Immune Defic Syndr. 2016;73(3): 323-331.
6. Thrasher S. HIV is coming to Rural America. Available at: https://www.nytimes.com/2019/12/01/opinion/ hiv-aids-rural-america.html. Accessed January 18, 2020.
7. Tempalski B, Pouget ER, Cleland CM, et al. Trends in the population prevalence ofpeople who inject drugs in US metropolitan areas 1992-2007. PLoS One. 2013;8(6): e64789.
8. Lansky A, Finlayson T, Johnson C, et al. Estimating the number ofpersons who inject drugs in the United States by meta-analysis to calculate national rates of HIV and hepatitis C virus infections. PLoS One. 2014;9(5):e97596.
9. World Health Organization. Technical guide for countries to set targets for universal access to HIV prevention, treatment, and care of injection drug users. Available at: https://www.who.int/hiv/pub/idu/targets_ universal_access/en. Accessed January 18, 2020.
10. Jones CM. Syringe services programs: an examination of legal, policy, and funding barriers in the midst of the evolving opioid crisis in the US. Int J Drug Policy. 2019; 70:22-32.
11. Cranston K, Alpren C, John B, et al. HIV diagnoses among persons who inject drugs-northeastern Massachusetts, 2015-2018. MMWR Morb Mortal Wkly Rep. 2019;68(10):253-254.
12. Des Jarlais DC, Braine N, Friedmann P. Unstable housing as a factor for increased injection risk behavior at US syringe exchange programs. AIDS Behav. 2007; 11(suppl 6):78-84.

DETAILS

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Influenza Vaccination and Migration at the US Southern Border

Anonymous

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ABSTRACT (ENGLISH)

n the past year, at least three children who migrated across the US southern border in the custody of Customs and Border Protection (CBP) died with laboratory-confirmed influenza infection as a contributing factor.1 The first was Felipe, an eight-year-old boy from Guatemala who died in December 2018 upon arrival to the hospital after being diagnosed with influenza B earlier in the day. The second was Wilmer, a two-year-old boy who died in May 2019 after an eightday admission to the pediatric intensive care unit, where he had tested positive for influenza A. The third was Carlos, a 16-yearold boy who was diagnosed with influenza A in May 2019 at a CBP Centralized Processing Center. He was given oseltamivir and transferred to another detention facility in isolation, where he was found dead in his cell less than 24 hours later.

After inquiries from members of Congress, CBP disclosed that border facilities neither require influenza vaccination for staffnor offer influenza vaccine to migrants. Examining the agency's decision provides a window into US immigration policy and priorities at the southern border.

Influenza and other infectious diseases are serious risks in every congregate living facility, but detention poses special additional risks. Introducing cohorts of susceptible detainees into a closed community creates a "revolving door effect," in which newly arriving people are quickly exposed to each other and to those already in the facility.2 Documentation of overcrowding, lack of access to soap and water, and inadequate infrastructure to isolate sick people in US detention facilities indicate that living conditions may be contributing to the spread ofinfectious diseases in detention centers. In addition to the deaths from influenza, there have been reported outbreaks of other infectious diseases, most notably mumps, with almost 900 confirmed and probable cases across 57 facilities run by Immigration and Customs Enforcement from September 2018 to August 2019.3

A range of actions would reduce these risks substantially. Basic steps would include surveillance for infectious diseases, prompt triage, early treatment, isolation, and improved medical monitoring of sick people. Vaccination of staff would reduce their risk as well as the risks to the detained population. In the case of influenza, vaccination of migrants themselves would reduce the incidence of disease and its severity.

FULL TEXT

In the past year, at least three children who migrated across the US southern border in the custody of Customs and Border Protection (CBP) died with laboratory-confirmed influenza infection as a contributing factor.1 The first was Felipe, an eight-year-old boy from Guatemala who died in December 2018 upon arrival to the hospital after being diagnosed with influenza B earlier in the day. The second was Wilmer, a two-year-old boy who died in May 2019 after an eightday admission to the pediatric intensive care unit, where he had tested positive for influenza A. The third was Carlos, a 16-yearold boy who was diagnosed with influenza A in May 2019 at a CBP Centralized

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A range of actions would reduce these risks substantially. Basic steps would include surveillance for infectious diseases, prompt triage, early treatment, isolation, and improved medical monitoring of sick people. Vaccination of staff would reduce their risk as well as the risks to the detained population. In the case of influenza, vaccination of migrants themselves would reduce the incidence of disease and its severity.

SO WHY HAS CBP DECLINED TO VACCINATE?

CBP's explanation is that it is too complicated for the agency to offer the influenza vaccine. An agency spokesperson recently stated, "The system and process for implementing vaccines-for supply chains, for quality control, for documentation, for informed consent, for adverse reactions-is complex, and those programs are already in place at other steps in the immigration process as appropriate."4 Border facilities are the first point of contact for asylum seekers crossing the border; they are meant to serve as temporary shelters, designed to hold individuals for no longer than 72 hours.

In reality, however, as many as one third of children have been held for longer than 72 hours,5 including two of the three children who died last year. Moreover, initiating vaccination as quickly as possible can reduce infection rates in other parts of the immigration system. Establishing mass influenza vaccination programs in transitory settings is not prohibitively difficult. Vaccination programs effectively control infectious disease outbreaks in remote refugee camps, which exhibit constant inflow of displaced peoples in addition to a host of logistical challenges that border facilities do not face.

At the end of 2018, the Centers for Disease Control and Prevention (CDC) initiated an investigation into respiratory illness in CBP facilities. CDC found evidence ofinfluenza transmission and recommended a series of control measures, including that CBP offer influenza vaccination to its staff and to individuals in detention at the southern border at the "earliest feasible point of entry to allow for maximum protection of migrant and potential to reduce transmission at Border Patrol Facilities."6 CDC advised that vaccination "may be most feasible at the border stations with current existing medical infrastructure" and that the agency should explore "local community partnerships ... to support vaccination efforts."6 CDC's report arrived in January 2019, after the first child's death, but CBP did not accept the recommendation to initiate vaccination efforts. Several months later, the two additional deaths related to influenza occurred. Most recently, CBP denied requests by community physicians to establish an immunization clinic for detainees.

A CHALLENGE TO PUBLIC HEALTH AND MEDICINE

CBP's decision not to offer influenza vaccination despite multiple fatalities is one ofseveral policies adverse to health evident at the southern border. There is ongoing litigation against the agency about the standards of detainment, the adequacy of infectious disease control, and the adequacy of the medical care provided in federal custody. There are also other ongoing controversies about the health impacts of recent immigration policies themselves, including the separation of thousands of children from their families and recent decisions to keep people seeking asylum outside of the United States during the immigration process.

In this context, the failure to immunize against influenza is more than a refusal to offer a basic measure to prevent illness and death. It signifies a lack of respect in US immigration policy for the health of people migrating and seeking asylum at the southern border, as well as for the agencies and health professionals who care for them. It reflects the diminishment of values that are core to the fields of public health and medicine. And it stands as a challenge to these fields-and to their practitioners-to advocate for change.

Sidebar

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CONFLICTS OF INTEREST

The authors report no conflicts ofinterest.

References

REFERENCES

1. Moore R. Doctors urge probe of child migrant deaths: "poor conditions" at border increase risk of spreading flu. WashingtonPost. August 1,2019. Available at: https://www.washingtonpost.com/ immigration/doctors-urge-probe-of-child-migrant-deaths-poor-conditions-at-border-increase-risk-of-spreading-flu/2019/08/01/ 0bf86b06-b445-11e9-8f6c-7828e68cb15f_ story.html Accessed January 6, 2020.
2. Riccardo F, Suk JE, Espinosa L, et al. Key dimensions for the prevention and control of communicable diseases in institutional settings: a scoping review to guide the development of a tool to strengthen preparedness at migrant holding centres in the EU/EEA. Int J Environ Res Public Health. 2018;15(6):e1120.
3. LeungJ, ElsonD, Sanders K,etal. Notes from the field: mumps in detention facilities that house detained migrants-United States, September 2018-August 2019. MMWR Morb Mortal Wkly Rep. 2019;68(34):749-750.
4. Moore R. CDC recommended that migrants receive flu vaccine, but CBP rejected the idea. Washington Post. November 25, 2019. Available at: https:// www.washingtonpost.com/immigration/ cdc-recommended-that-migrants-receive-flu-vaccine-but-cbp-rejected-the-idea/ 2019/11/25/8aba198e-0fb8-11ea-b0fc-62cc38411ebb_story.html. Accessed November 25, 2019.
5. Office of the Inspector General. Management alert: DHS needs to address dangerous overcrowding and prolonged detention ofchildren and adults in the Rio Grande Valley (redacted). July 2, 2019. Available at: https://www.oig.dhs.gov/sites/ default/files/assets/2019-07/OIG-19-51-Jul19_.pdf. Accessed November 7, 2019.
6. Letter from Director of the Centers for Disease Control and Prevention Dr. Robert Redfield to the Honorable Rosa DeLauro at 10-11. November 7, 2019. Available at: https://www.warren.senate.gov/imo/media/doc/CDC%20Response %20-%20migrant%20vaccination.pdf. Accessed January 6, 2020.

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Turning Barriers Into Benefits to Facilitate Public Health and Business Partnership/Comments

Kassler, William [1] ; Greenberg, Sally J [1] IBM Watson Health, Cambridge, MA

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ABSTRACT (ENGLISH)

On first impression, the business sector and public health in the United States may appear to be unlikely collaborators. The predominant view of business organizations reflects a doctrine articulated by economist Milton Friedman that the only social responsibility of a corporation is to increase its profits,1 and most companies have limited interactions with public health. Thus, public health practitioners tend to see their relationships with corporations through a regulatory lens. A lot of time and effort has been spent enforcing laws and regulations that protect health and ensure safety, and less in collaborating with the private sector in mobilizing community partnerships to solve health problems. This is not without good reason; history is strewn with examples of corporations causing widespread harm from the products they have sold and environmental degradation from their operations. Business is seen as being indifferent at best, and hostile at worst to larger health concerns. Yet, whether they realize it or not, every business is in the health business. Table 1 provides examples ofsuccessful corporation public health interventions.

FULL TEXT

On first impression, the business sector and public health in the United States may appear to be unlikely collaborators. The predominant view of business organizations reflects a doctrine articulated by economist Milton Friedman that the only social responsibility of a corporation is to increase its profits,1 and most companies have limited interactions with public health. Thus, public health practitioners tend to see their relationships with corporations through a regulatory lens. A lot of time and effort has been spent enforcing laws and regulations that protect health and ensure safety, and less in collaborating with the private sector in mobilizing community partnerships to solve health problems. This is not without good reason; history is strewn with examples of corporations causing widespread harm from the products they have sold and environmental degradation from their operations. Business is seen as being indifferent at best, and hostile at worst to larger health concerns. Yet, whether they realize it or not, every business is in the health business. Table 1 provides examples ofsuccessful corporation public health interventions.

STANDARDS OF CORPORATE RESPONSIBILITY

For better and the worse, companies affect population health in four broad domains: (1) through the health and safety of the products and services they sell (consumer health); (2) through the health, safety, and well-being of their employees, dependents, and retirees, including workers in their supply chains (employee health); (3) through the effect they have on the environment (environmental health); and (4) through the investments they make in the

communities in which they do business (community health).3 In each of these domains, exemplars of corporate best practices exist. These domains represent an opportunity to increase the reach and effectiveness of the public health sector, enhance business participation in the overall public health system, and improve thoughtful collaboration to achieve the shared goals of improving health (https://bit.ly/2MgjhMs).4

Shared goals with business may seem foreign, but many in the health field likely missed an important development in August 2019 that reflects a notable transformation within the private sector. The Business Roundtable, a trade association representing almost 200 chief executive officers of America's most prominent companies from all sectors ofthe economy, issued a new "Statement on the Purpose of the Corporation" (https:// bit.ly/2tyUUmK). In a sharp break from the Friedman Doctrine and their own long-held principles on the primacy of shareholders, these industry leaders established an updated standard of corporate responsibility. In addition to generating shareholder value, companies should also deliver value to their customers, invest in their employees, deal fairly and ethically with other companies, and support the communities in which they work. Public health should take this opportunity to engage at a deeper level than in the past.

As the corporate sector is beginning to engage more broadly in the health of their communities, literature is emerging to support the connections between corporate social responsibility and business outcomes. Studies have shown that companies deemed socially responsible (i.e., having sponsored programs that address the environment, the community, or health and safety in the workforce) either outperformed in the stock market, or did no worse, than non-socially responsible companies.5 While the demonstrated financial value seems stronger for return on investment in workplace health and wellness programs than it does for external investments in community health,6 financial return on investment is not necessary to create successful public health partnerships. Strengthening the business case for investments in health should involve communicating value that is often intangible and difficult to measure.

FIDUCIARY RESPONSIBILITY

The value of investing in health may not be as self-evident to business as it is to those in public health. While appeals to ethical values may resonate with individual business leaders, they have a fiduciary responsibility to the company. Thus, value propositions are stronger if they are aligned with a company's business objectives. For instance, investing in employee health programs can improve absenteeism from chronic health issues that may be rooted in social causes.2,7 These local investments can create a healthier workforce, and addressing community-based social factors such as education, transportation, food, and overall quality of life can additionally improve a company's ability to recruit and retain a skilled workforce. The public is increasingly expecting more of business, holding companies accountable for a broad range of social and political behaviors. Consumers' behavior may consider corporate social responsibility as a criterion in purchase decisions and prioritize corporations that demonstrate market differentiation in corporate social responsibility; they care about issues such as labor conditions in the supply chain, environmental degradation, and inclusion and diversity in hiring practices. These corporate social responsibility practices are critical to building a positive reputation and brand loyalty.

Beyond the potential to scale population health impact within the four large domains of consumer, employee, environmental, and community health, there are many advantages to a collaborative multisector partnership.5 While business can bring new resources to health endeavors, the potential is far greater than corporate philanthropy. Companies can provide a variety of in-kind resources and technical expertise to help to strengthen and build capacity in community organizations. For example, business can leverage a skilled workforce to provide pro bono services not typically found in the nonprofit sector, such as marketing, design, and communications. Establishing relationships may result in newfound lines of communication and opportunities to engage with business leaders to influence corporate practices and policies. Business can also recruit within their own networks to enlist new partners into coalitions and bolster advocacy in ways that nonprofit and government organizations cannot.

Recognizing the large footprint that business has in health and understanding the evolving willingness in the business community to engage in broader social issues is a start, but it may not be enough. Even though public health has many assets it brings to the table, those seeking to partner with the private sector must understand how

to anticipate and overcome key barriers. Businesses are often as bureaucratic as governments, and health-related functions can be diffused across separate departments that do not communicate or coordinate. Knowing which levers to pull within a company for specific programs or issues is essential. Table 1 outlines a few of the barriers with suggestions on how to overcome them to collaborate effectively.

PUBLIC-PRIVATE PARTNERSHIPS

In an apocryphal story that is often invoked in medicine to help students focus their diagnostic efforts, when asked why he robbed banks, Willie Sutton was supposed to have said, "Because that is where the money is." Governmental agencies often view corporations as a cause of poor health to be regulated, and community agencies often approach local business as deep pockets to support their programs. It is time to expand this perspective and approach business as a true collaborator rather than just a financier. Public- private partnerships to improve health and well-being will be challenging; business and public health have widely different cultures, speak different languages, have different priorities, and often see each other as traditional foes. Businesses will need to look beyond their dayto-day imperatives and their quarterly revenue targets to prioritize longer-term investments in health. Public health will need a revised perspective when courting partners to improve health and should be willing to help address short-term business priorities and needs to creatively identify small, early wins that build trust. The power of partnership and reciprocity between the private sector and public health is only limited by individual perspectives. Â1PU

William J. Kassler, MD, MPH

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CONFLICTS OF INTEREST

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REFERENCES

1. Friedman M. The social responsibility of business is to increase its profits. New York Times. September 13,1970. Available at: https://www.nytimes.com/1970/09/ 13/archives/article-15-no-title.html. Accessed December 20, 2019.
2. Polinski JM, Howell B, Gagnon MA, Kymes SM, Brennan TA, Shrank WH. Impact of CVS Pharmacy's discontinuance of tobacco sales on cigarette purchasing (2012-2014). AmJ Public Health. 2017;107(4):556-562.
3. Quelch J, Boudreau E. Building a Culture of Health. A New Imperativefor Business. Springer Briefs in Public Health. Cham, Switzerland: Springer International Publishing; 2016:1-174.
4. Koh, H., Singer, S., Edmondson, A. Health as a way of doing business. JAMA. 2019;321(1):33-34.
5. Goetzel RZ, Fabius R, Fabius D, et al. The stock performance of C. Everett Koop Award winners compared with the Standard &Poor's 500 Index. J Occup Environ Med. 2016;58(1):9-15.
6. Goetzel RZ, Fabius R, RoemerEC, et al. The stock performance ofAmerican companies investing in a culture ofhealth. Am J Health Promot. 2019;33(3):439-447.
7. Bipartisan Policy Center. Good health is good business: the value proposition of partnerships between businesses and governmental public health agencies to improve community health. June 2019. Available at: https://bipartisanpolicy.org/ wp-content/uploads/2019/06/GoodHealth-Is-Good-Business.pdf. Accessed December 20, 2019.

Sally Greenberg Comments

In his article, William Kassler (p. 443) quotes economist Milton Friedman's maxim that the only social responsibility of business is to increase its profits.1 To be sure, a company must earn profits to stay in business, but Friedman's

proclamation today seems narrow and outdated. The Business Roundtable (BR), in fact, in August 2019, issued a set of principles that 181 of America's leading companies signed, titled "Statement on the Purpose ofa Corporation." These companies say they want to lead for the benefit of "all stakeholders- customers, employees, suppliers, communities and shareholders" (https://bit.ly/2QgeOMk).

While I applaud the sentiment, my work as a consumer advocate makes me a cynic.

General Motors is one of the signatories of the BR document, but General Motors is actively working (https://nyti.ms/2SJieZD)-along with Toyota, inventor of the Prius-with the Trump Administration to roll back fuel efficiency requirements that would reduce US oil consumption by 12 billion barrels (https://bit.ly/37kcx8C).

Good for the environment? Hardly. Ford Motor Company, a BR statement signer, is doing the opposite, working with the state of California to maintain strong emissions standards, and good for them (https://reut.rs/2SK5zWd).

How about the BR principles' commitment to consumers and communities? Two BR document signatories, American and United Airlines, are among the four dominant airline carriers who control 80% of the routes; they divvy up the most lucrative ones and charge monopoly prices; they squeeze out the other 20% of smaller airlines from airport slots and fight all of our efforts in Congress to win consumer protections and cap outrageous cancellation, booking, baggage, and other fees for passengers. The airlines have also pulled out of less-profitable cities. At 91 small airports, the number of departures has been cut in half (https://bit.ly/ 2thn99v).

That hurts the community and hurts workers. So much for the BR principles. This is not good for consumers or communities.

Marriott is another BR statement signatory. This behemoth hotel chain is being sued by the District of Columbia Attorney General for false and deceptive practices in hiding "mandatory resort fees" that are slapped onto the bill at checkout (https://bit.ly/ 2FebGKI).

I paid $28 a day in a New York City hotel that was not a resort. The fees are not closed when compare hotel prices online, so you think you are getting a better deal until you check out. The hotel industry reaped $3 billion in resort and other surcharges in 2018.

These are but a few examples of how business claims to be committed to a laudable set of goals- to the environment, consumers, communities, and workers-but profits and shareholders always come first.

No doubt, the aforementioned companies can cite many contributions to community activities, a list of sustainability investments, support for the arts, and so on. Most have "corporate social responsibility" or "sustainability activities" reports to prove all of the wonderful things they are doing. What we need to know is how they spend their lobbying dollars influencing Congress and regulators, and suing competitors.

I agree that business has a very positive role to play in advancing public health. However, as Kassler observes, history is strewn with examples of corporations causing widespread harms from the products they have sold and environmental degradation from their operations, and I will add gouging consumers, preying on the poor with predatory debt collection practices and payday loans, and losing public confidence and customer good will. A set of principles like the BR statement states lofty goals to aspire to-but they need to be tested against real-world actions, and we must always challenge companies to actually live up to their stated commitments. Â1PH

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CONFLICTS OF INTEREST

The author has no conflicts of interest to report.

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REFERENCES

1. Friedman M. The social responsibility of business is to increase its profits. New York Times. September 13, 1970. Available at: https://www.nytimes.com/1970/ 09/13/archives/article-15-no-title.html. Accessed February 13, 2020. Sally

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Vaccination Achievements of Cuba Versus the United States Exposed by the 2019 Measles Epidemic

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ABSTRACT (ENGLISH)

The recent resurgence of measles in the United States provides an impetus to compare and contrast health and health systems here and in Cuba. We believe that there is much for the two countries to learn from each other despite the deep differences in the political and ideological conceptions between the governments, the cultural differences between their populations, and the differences in the application of principles of social and health equity. The health systems are an integral component of each society and dictate the health complexities of each country. From January 1 to December 31, 2019, 1282 cases of measles were confirmed in 31 states in the United States, more than in any single year since 1992.1 The most recent data from the Centers for Disease Control and Prevention (CDC) on US childhood vaccination completion rates indicate that only 70.4% of children aged 19 to 35 months had received all recommended vaccines; 91.5% had received at least one dose of measles vaccine.2 By contrast, Cuba has not experienced a single case of measles since 1993, and childhood vaccination completion rates (for all recommended vaccines) are over 99%.3 These differences between the United States and Cuba should be analyzed using a multilevel approach, considering the obligations of families and communities, but also the health care requirements and government health policies, as health system structural differences likely play a major role as well.

FULL TEXT

The recent resurgence of measles in the United States provides an impetus to compare and contrast health and health systems here and in Cuba. We believe that there is much for the two countries to learn from each other despite the deep differences in the political and ideological conceptions between the governments, the cultural differences between their populations, and the differences in the application of principles of social and health equity. The health systems are an integral component of each society and dictate the health complexities of each country. From January 1 to December 31, 2019, 1282 cases of measles were confirmed in 31 states in the United States, more than in any single year since 1992.1 The most recent data from the Centers for Disease Control and

Prevention (CDC) on US childhood vaccination completion rates indicate that only 70.4% of children aged 19 to 35 months had received all recommended vaccines; 91.5% had received at least one dose of measles vaccine.2 By contrast, Cuba has not experienced a single case of measles since 1993, and childhood vaccination completion rates (for all recommended vaccines) are over 99%.3 These differences between the United States and Cuba should be analyzed using a multilevel approach, considering the obligations of families and communities, but also the health care requirements and government health policies, as health system structural differences likely play a major role as well.

THE PLACE AND SOURCE OF IMMUNIZATIONS

In the United States, children receive vaccinations from a mixture of public and private sources, including private practice physicians, local health departments, and federally qualified health centers. Approximately half of children receiving immunizations are covered by private insurance, whereas Medicaid covers approximately 37%.2 Children who are American Indian or Alaska Native, Medicaid-eligible, uninsured, or underinsured qualify to receive immunizations financed through the federally funded Vaccines for Children program, which pays for over half of all childhood immunizations.2

Cuba's National Health System is based on primary care that integrates public health and clinical medicine; medical and epidemiological practices interact with each other in the daily care ofthe patient and in the implementation of population health actions. In that context, the National Immunization Program, which was created in 1962, is guided by four tenets: (1) vaccination efforts encompass the total population (equity), (2) vaccination is integrated into primary health care services, (3) the program relies on active community participation, and (4) vaccination is free of charge.4 Vaccinations are provided in 451 polyclinics in the country, where 10 782 basic health teams are involved, and in more than 50 hospitals with maternal and child services. School-based vaccination is also carried out in coordination with the education authorities in all the municipalities of the country.5

VACCINE EXEMPTIONS

As with most public health- related regulations and laws in the United States, vaccination policies, requirements, and regulations are set at the state level. Every state has vaccination requirements for children attending public schools, and such requirements allow for a range of exemptions. All states allow medical exemptions (e.g., a documented allergy to a vaccine component), whereas 45 states allow religious exemptions and 15 states allow philosophical (or personal-belief) exemptions (the latter two categories are jointly referred to as nonmedical exemptions, orNMEs).6 Olive et al. have reported on trends in NMEs between 2009 and 2016, noting that ofthe 18 states (at the time of the article) that allowed religious and philosophical-belief exemptions, the rate of NMEs increased significantly in 12 states.7 In three states (Idaho, Wisconsin, and Utah), county-level NMEs exceeded 14%, with the highest NME rate topping out at 26.7%.7

Cuba's vaccination policy is set at the national level and includes community and school-based vaccination in all the municipalities of the country. Medical exemptions (e.g., allergy to a vaccine component) are the predominant form of exemptions in Cuba. With the clinical medical team evaluating each case individually and knowing previous serious adverse events reported for each vaccine before completing vaccination schedules, the medical exemption rates are less than 1% (Belkys M. Galindo Santana, MD, MS, head ofthe Surveillance System ofVaccine Adverse Events of the National Vaccination Program, Cuba, oral communication, November 2019). Nonmedical exemptions are recognized by the National Immunization Program, but because ofthe essentially social, preventive, and community participation approach ofmedicine in Cuba, the proportions of nonmedical exemptions are very low. This can be demonstrated through the extensive coverage of complete vaccination schemes (> 99% diphtheria-pertussis-tetanus and 99% measles), the community participation in vaccination campaigns, and the program's elimination of six vaccine-preventable diseases after it applied a vaccination schedule comprising mostly nationally produced vaccines (Table 1).

CHANGING ATTITUDES ABOUT VACCINATIONS

In the United States, attitudes and beliefs about vaccines have changed substantively in the Internet era, with vaccine hesitancy and vaccine refusal often fueled by misinformation that is easily spread through social media

channels. Many vaccine-preventable diseases have been significantly reduced or eliminated, resulting in lack of personal experience with or knowledge of these diseases, which can result in complacency about the ongoing need for vaccinations. Because of this complacency-coupled with the eroding trust in government and institutions-guidelines and information provided by entities such as the CDC can simply fail to convince.

In Cuba, the vast majority of parents freely consent and agree to vaccinate their children because they believe in the recommendations given by doctors and nurses in their communities regarding the individual and collective benefits of vaccination. The fulfillment of both individual and community obligations regarding public health achieves herd immunity, which is what is now lacking in US communities where measles spreads person to person. All Cubans receive daily doses of health education from Cuban television; commercials (as we know them in the United States) are not allowed, and health messages fill what would be commercial spots. However, there are Cuban families who have concerns about what is said on social networks about some vaccines and about inappropriate vaccination practices.

Although Cuba does not escape the influence of false or non-evidence-based news circulating in social networks and promoted by antivaccine movements, the Cuban model for collective health promotes shared responsibility among the government, Cuban civil society organizations, the national health system, and families in each ofthe communities. Changes in behaviors and practices regarding the vaccination program are promoted through communication campaigns and communication tools as part of the prevention and control program. Additionally, strategies for capacity building at the national and local levels for monitoring and evaluating the results of the vaccination program are prioritized to sustain the effectiveness and impact of the Cuban program.

THE IRONIES OF THE US EMBARGO RELATED TO VACCINES

With the constraints imposed by the US embargo, the resilience and inventiveness of the Cuban people propelled them to establish biotechnology and pharmaceutical capacities and capabilities that have made significant contributions to science, medicine, and health. These and many other biotechnology achievements are not openly available in the United States, ironically, because of the US embargo. We can learn and benefit from the Cuban achievements in prevention, including approaches to providing vaccinations and vaccines. Removing the embargo will help in that regard, and will be mutually beneficial. /4JPI-I

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P. C. Erwin provided an initial draft of the manuscript, and all authors contributed to subsequent editing and revisions.

CONFLICTS OF INTEREST

The authors have no conflicts of interest.

Sidebar

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References

REFERENCES

1. Centers for Disease Control and Prevention. Measles cases and outbreaks. 2020. Available at: https://www.cdc.gov/measles/cases-outbreaks.html. Accessed January 6, 2020.
2. Hill HA, Elam-Evans LD, Yankey D, Singleton JA, Kang Y. Vaccination coverage among children aged 19-35 months- United States, 2017. MMWR Morb Mortal Wkly Rep. 2018;67(40):1123-1128.
3. World Health Organization. WHO vaccine-preventable diseases: monitoring system. 2019 global summary.

Available at: http://apps.who.int/immunization_ monitoring/globalsummary/countries?countrycriteria%5Bcountry%5D%5B% 5D=CUB. Accessed July 14, 2019.
4. Reed G, Galindo MA. Cuba's National Immunization Program. MEDICC Rev. 2007;9(1):5-7.
5. Rendon Portelles T. Cuba inmuniza su futuro: Programa Nacional de Inmunizaciones. La Habana. 2017. Available at: https:// www.paho.org/cub/index.php?option= com_docman&view=download&alias= 1528-cuba-inmuniza-su-futuro&category_ slug=entrevistas&Itemid=226. Accessed August 23, 2019.
6. National Conference of State Legislatures. States with religious and philosophical exemptions from school immunization requirements. 2019. Available at: http://www.ncsl.org/ research/health/school-immunizationexemption-state-laws.aspx. Accessed July 14, 2019.
7. OliveJK, Hotez PJ, Damania A, Nolan MS. The state of the antivaccine movement in the United States: a focused examination of nonmedical exemptions in states and counties [correction appears in PLoSMed. 2018;15(7):e1002616]. PLoS Med. 2018;15(6):e1002578.

DETAILS

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Centrality of Employment Policies for Individual and Public Health

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ABSTRACT (ENGLISH)

In this issue of AJPH (p. 499), sociologist Daniel Schneider at the University of California, Berkeley adds to the mounting evidence in support of paid sick time laws with his study of the short-term effects of Washington State's paid sick leave law, passed in 2016 and effective January 2018. Schneider provides an important and empirically strong demonstration of how the establishment of workplace standards and worker protections can benefit worker well-being and public health.

FULL TEXT

In this issue of AJPH (p. 499), sociologist Daniel Schneider at the University of California, Berkeley adds to the mounting evidence in support of paid sick time laws with his study of the short-term effects ofWashington State's paid sick leave law, passed in 2016 and effective January 2018. Schneider provides an important and empirically strong demonstration of how the establishment ofworkplace standards and worker protections can benefit worker

well-being and public health.

Paid sick leave benefits afford employees the ability to stay home from work to care for themselves or a family member in times of ill health without financial penalty. Such laws are presumed to have positive effects for workers as well as broader benefits to society through preventing illness contagion to coworkers and customers (when sick employees stay home) and to schoolchildren (when healthy employees stay home to care for sick children). Paid sick leave laws can also benefit employers through reduced absenteeism and higher productivity.1

Nevertheless, according to Bureau of Labor Statistics March 2019 data, more than one quarter of workers in private industry have no access to paid sick leave benefits, and 57% of part-time workers and 53% of workers in the lowest wage quartile are without such access.2 Workers in retail and food service occupations, which are the focus of Schneider's analysis, as well as in occupations such as construction, are particularly unlikely to have access to paid sick leave. Moreover, firms with voluntary paid sick leave policies do not necessarily extend coverage to all employees, with low-level workers having the least access.3

For numerous reasons-significant gaps in coverage, the many presumed benefits of paid sick leave for workers and society, lack of a federal law governing employer behavior in this domain-state and local action on paid sick time legislation has been especially brisk over the last 15 years. Dozens of municipalities and 11 states have passed laws that require at least some groups of employers to provide paid time off to employees who are sick or caring for a sick child. Tracking these local laws-in terms of their implementation and their effects on employees and employers-is critical if we hope to develop evidence-based employment policies that are good for workers, firms, and society.3

WHAT WE KNOW FROM PAST STUDIES

Data limitations and analysis challenges compromise the rigor of existing studies, and not all studies conclude that the promise of paid sick leave laws has been fully realized. Nevertheless, the empirical record is generally positive. On the basis of their review of 23 studies ofpaid family leave from 2008 to 2018, John Marotta and Solomon Greene conclude that (1) policy implementation has proven feasible and not overly burdensome for employers and (2) the effects on workers have been largely positive.1 The many benefits reported for employees include higher job satisfaction, greater support from employers for taking time off, reduced occupational injuries, reduced health care costs, and decreases in overall leave-taking for illness. Marotta and Greene report that research on economic outcomes has been more limited and inconsistent, and they identify this as an important research gap. Moreover, they note research gaps on the long-term effects of paid sick time on employee health and well-being and limited attention to its ability to reduce racial disparities in labor market and health outcomes.1

WHAT WE KNOW FROM SCHNEIDER'S STUDY

Schneider reports short-term impacts ofWashington's paid sick leave law on retail and food service employees in the areas of self-reported coverage, policy use, and work-family conflict.

Schneider's study uses a difference-in-difference approach to assess whether changes are greater in Washington State after implementation than in 41 states without paid sick leave. He includes a robust set ofdemographic and employment covariates as controls and runs employer fixed effects that allow for withinemployer comparisons over time. Although not a randomized experiment, Schneider's empirical strategy is more rigorous than some previous studies. I appreciated his transparency about study limitations, including insufficient preimplementation data to fully test the parallel-trends assumption and insufficient postimplementation data to examine longer-term effects.

Schneider finds evidence of relatively strong and statistically significant effects of the law on increased coverage (+17 percentage points) and reductions in working while sick (-14 percentage points). The effects are weak and only marginally significant on reductions in work-family conflict, although slightly stronger for women and mothers than their male and father counterparts. Schneider's results represent an important contribution to knowledge and provide empirical support to inform ongoing policy debates. They also suggest some future research directions.

First, Schneider's findings would be even more useful if he examined whether the gains in coverage and use were equitably distributed across all workers in his sample of retail and food service workers: by full- and part-time status, by employer size, by demographic characteristics. Government laws and regulations can be used as important

equity levers; however, the ability to achieve equity goals through public policy is not automatic and needs to be carefully assessed.3

Second, Schneider makes a strong case for why he restricted his sample to retail and food service workers, a group he argues might be especially and positively affected by the law. However, one reason the Washington law is an important case to examine is its breadth: it applies to Washington employers big and small and covers most employees. In future studies, therefore, Schneider might consider broadening the sample to include a range of occupations to explicitly test his hypothesis of differential impacts of the law across occupational groups. Fortunately, Schneider's sampling approach, which relies on Facebook advertisements for sample recruitment, could be easily extended to other target occupational categories. The Facebook methodology that he employs- and that he and his colleague Kristen Harknett developed to study the impact of other worker protections such as fair scheduling laws-is an innovative response to the heightened challenge of identifying probability samples in survey research.4

Third, future research can consider more deeply the conditions under which paid sick leave will lead to reductions in work-family conflict and other work-family outcomes. On the one hand, it makes sense that employees who are able to take time off of work when sick or to care for a sick family member may experience less conflict at home. On the other hand, to the extent that this time off puts employees further behind on work tasks or results in supervisors and coworkers questioning work commitment, it may have the unintended consequence of increasing anxiety and discontent about not fulfilling responsibilities and expectations at work. The latter interpretation does not mean that paid sick leave should not be a fundamental worker right, or that employees do not value access to paid leave. Nor does it mean that paid leave does not come with many other individual and societal benefits. Clearly, the data suggest that it does. Nevertheless, the ability to take leave may not eliminate the stress induced by missing work and falling behind on work tasks. This would be an interesting topic to further explore in future research.

Schneider has contributed several important findings to the research on paid sick leave. This study is an important addition to a growing body of literature on the centrality of employment policies for individual and public health.

AJPH

Julia R. Henly, PhD

CONFLICTS OF INTEREST

There are no conflicts of interest or disclosures to report.

Sidebar

Correspondence should be sent to Julia R. Henly, School of Social Service Administration, University of Chicago, 969 E. 60th St, Chicago, IL 60615 (e-mail: jhenly@uchicago.edu). Reprints can be ordered at http://www.ajph.org by clicking the "Reprints" link.

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References

REFERENCES

1.MarottaJ, Greene S. Paid Sick Days: What Does the Research Tell Us About the Effectiveness of Local Action? Washington DC: Urban Institute; January 2019.

2.Bureau of Labor Statistics. Economic News Release. Tableó: selected paid leave benefits: access, March 2019. Available at: https://www.bls.gov/news.release/ebs2. t06.htm. Accessed December 8, 2019.

3. Romich JL. Paid leave mandates may fail to reach part-time workers. Am J Public Health. 2015;105(5):e1.

4. Schneider D, Harknett K. (2019). What's to like? Facebook as a tool for survey data collection. Sociol Methods Res. 2019; Epub ahead ofprint.

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Measles Outbreak in Minnesota (2017): Roles of an Immunization Information System

Leeds, Maureen, MPH; Muscoplat, Miriam Halstead, MPH; Kuramoto, Sydney, MPH; Roddy, Margaret, MPH

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ABSTRACT (ENGLISH)

The Minnesota Department of Health used its Immunization Information System-the Minnesota Immunization Information Connection-to respond to an outbreak of measles in the state in 2017 by assisting with the exclusion of unvaccinated exposed individuals from public activities, providing members of the public with their immunization records, and monitoring measles, mumps, and rubella vaccine uptake. Use of the Immunization Information System was found to be an efficient and sustainable tool in responding to the outbreak. (Am J Public Health. 2020;110: 527-529. doi:10.2105/AJPH.2019. 305526)

In response to an outbreak of measles in Minnesota in 2017, staff at the Minnesota Department ofHealth's (MDH's) Immunization Information System (IIS)-the Minnesota Immunization Information Connection (MIIC)-used already available data and tools to facilitate the public health response.

FULL TEXT

Headnote

The Minnesota Department of Health used its Immunization Information System-the Minnesota Immunization Information Connection-to respond to an outbreak of measles in the state in 2017 by assisting with the exclusion of unvaccinated exposed individuals from public activities, providing members of the public with their immunization records, and monitoring measles, mumps, and rubella vaccine uptake. Use of the Immunization Information System was found to be an efficient and sustainable tool in responding to the outbreak. (Am J Public Health. 2020;110: 527-529. doi:10.2105/AJPH.2019. 305526)
In response to an outbreak of measles in Minnesota in 2017, staff at the Minnesota Department ofHealth's (MDH's) Immunization Information System (IIS)-the Minnesota Immunization Information Connection (MIIC)-used already available data and tools to facilitate the public health response.

INTERVENTION

The goals of using MIIC in MDH's response were to assist public health department workers in excluding unvaccinated individuals exposed to measles from childcare, school, work, and other activities; provide members of the general public with rapid access to their consolidated immunization record; and monitor measles, mumps, and rubella (MMR) vaccine uptake over the course of the outbreak in relation to outbreak-specific recommendations for measles vaccination.

PLACE AND TIME

This response took place between April and August 2017. Although the response was statewide, many activities

focused on Hennepin County, Minnesota, the hub of the outbreak.

PERSON

Minnesota experienced 75 measles cases between April and August of2017. Four of 87 (4.6%) counties statewide reported at least one outbreak-associated case; 66 (88%) cases were in Hennepin County; 61 (81.3%) cases were in the Somali American community; and the median age of all cases was two years.1 There were more than 8500 known exposed contacts.

PURPOSE

The purpose of MIIC and MDH's intervention was to reduce the outbreak response time of state and county health department workers, so that the outbreak could be contained more quickly and the effects of the outbreak on the public lessened.

IMPLEMENTATION

MIIC was established in 2002 as a statewide IIS maintained by the MDH's. It contains consolidated vaccination records for Minnesota residents. MIIC's goal is to support immunization practices, monitoring, and improvement for health care providers, nursing homes, schools, child care centers, and pharmacies. MIIC has a rapid look-up tool that allows users to upload a list of individuals and receive their immunization records en masse.

Identifying Unvaccinated Exposed Contacts

When a case of measles was suspected or confirmed, MDH identified the infectious period for the ill individual, determined who had been exposed during the infectious period (e.g., at childcare or in a clinic), and used the rapid look-up function in MIIC to receive immunization records for all exposed contacts with MIIC records. Using this feature allowed MDH staff to determine who was undervaccinated and focus staff resources appropriately. Unvaccinated contacts were informed that they needed to stay home and not go to childcare, school, or work.

Immunization Records for the Public

Members of the public have been able to request their consolidated immunization record by telephone since 2013 or by REDCap survey since 2015; this service was available without interruption during the 2017 outbreak. MIIC staff respond to these requests in 3 to 5 business days, sending the records by US mail, fax, or secure e-mail.

Monitoring Vaccine Uptake

Weekly during the outbreak, MIIC staff used the IIS to monitor the number of MMR doses administered. To identify Somali children for MMR vaccination rate comparison, we matched birth certificate data obtained from MDH's Office of Vital Records to immunization records. After the outbreak, we obtained numbers for MMR doses entered by week for 2016, 2017, and 2018.

EVALUATION

Using an IIS to look up immunization records to prioritize unvaccinated individuals was more efficient than the prior practice of contacting every exposed individual, obtaining permission to contact their health care provider, and calling the provider for the immunization record. On average, looking an individual up in MIIC took five minutes, whereas contacting a provider and obtaining a record took an hour. With an estimated 90% of records being found in MIIC and 10% requiring health care provider contact, MDH determined that more than 1000 hours of staff time and more than $25 000 in salary were saved by using MIIC over the course ofthe outbreak.2

Public record requests increased during the outbreak, as schools, child care centers, and other organizations sought to confirm the vaccination status of their students and employees. From January through March 2017, MDH received an average of 135 record requests per week. This rose to 282 requests per week in April, May, and early June (a 100% increase). The second quarter of 2017 also saw MIIC's highest ever total number ofpublic record requests, topping the previous highest total by more than 1000 requests. During the outbreak, MDH staff found 94% of 6980 requested records in MIIC and sent them to the requestors in 2 to 5 business days (Figure 1).

Analysis of MMR immunization rates in the Somali community showed in increase in MMR vaccination by aged two years compared with 2016 (58.9% vs 42.1%). Unfortunately, when MIIC staff looked at the Somali MMR vaccination rate in 2018, it had declined to 55.4%.

ADVERSE EFFECTS

Few challenges were reported. Occasionally inaccurate MIIC records were found- Somali naming conventions and Minnesotan lack of familiarity with them meant that immunizations were occasionally assigned to the wrong person, creating further follow-up work. Increased awareness of these issues will hopefully reduce incidents in the future.

SUSTAINABILITY

Using IISs in outbreak scenarios is an increasingly viable strategy. They contain consolidated immunization records that save time for public health workers; the Centers for Disease Control and Prevention has even explicitly outlined "control and management of vaccinepreventable disease outbreaks" as one of the goals for immunization programs.3

PUBLIC HEALTH SIGNIFICANCE

Responding to an outbreak can strain the capacity of state and local health departments as well as health care facilities. Our experience using MIIC in the public health response to a measles outbreak in Minnesota demonstrates that use of an existing IIS during a vaccinepreventable disease outbreak can enable

* public health workers to efficiently triage exposed contacts who may require exclusion from childcare, school, work, or other activities;
* the public to swiftly obtain their personal immunization records; and
* public health staffto monitor vaccine uptake in response to outbreak-specific recommendations for vaccination.

These interventions facilitated by an IIS enhance public health capacity to implement an effective response to an outbreak of a vaccine-preventable disease and reduce the time and financial resources demanded of public health staffand health care responders to do so.

CONTRIBUTORS

M. Leeds wrote the editorial and contributed to the analysis. M. H. Muscoplat, S. Kuramoto, and M. Roddy contributed significantly to the analysis.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to report.

Sidebar

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References

REFERENCES

1. Banerjee E, Griffith J, Kenyon C, et al. Containing a measles outbreak in Minnesota, 2017: methods and challenges. Perspect Public Health. 2019; Epub ahead of print.

2. Kuramoto S; Minnesota Department of Health. Cost savings of using an IIS to assess immunity status during an outbreak. 2018. Available at: https://repository. immregistries.org/resource/cost-savingsof- using-an-iis-to-assess-immunitystatus- during-an-outbreak. Accessed January 23, 2020.

3. Centers for Disease Control and Prevention. Immunization Information System (IIS): functional standards, v4.0. 2018. Available at: https://www.cdc.gov/ vaccines/programs/iis/functionalstandards/ func-stds-v4-0.html. Accessed January 23, 2020.

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Resurgent Methamphetamine Use at Treatment Admission in the United States, 2008–2017

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ProQuest document link

ABSTRACT (ENGLISH)

Objectives. To evaluate trends and correlates of methamphetamine use in the United States.
Methods. Data are from 15 747 334 drug-related treatment admissions among persons aged 12 years or older in the 2008-2017 Treatment Episode Data Set. We analyzed trends and used multivariable logistic regression.
Results. Methamphetamine-related admissions increased from 15.1% of drug-related treatment admissions in 2008 to 23.6% in 2017. Increases occurred among nearly all demographic groups. Methamphetamine injection increased from 17.5% of admissions in 2008 to 28.4% in 2017. Among methamphetamine-related admissions, heroin use increased from 5.3% of admissions in 2008 to 23.6% in 2017. Characteristics associated with increased odds of reporting methamphetamine use at admission included female sex; admissions aged 35 to 44 years; admissions in the Midwest, South, and West; unemployment; not in labor force; living dependent; living homeless; and having a referral from criminal justice, a health care provider, or other community treatment source.
Conclusions. Treatment admissions involving methamphetamine use increased significantly over the past decade and appear to be linked to the ongoing opioid crisis in the United States. Efforts to mobilize public health prevention, treatment, and response strategies to address rising methamphetamine use and overdose are needed. (Am J Public Health. 2020;110:509-516. doi:10.2105/AJPH.2019.305527)

FULL TEXT

Headnote

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Methamphetamine is a highly addictive and potent synthetic central nervous system stimulant.1 Methamphetamine use, especially chronic use, is associated with a range of physical and psychological sequelae, including psychosis and other mental disorders; cognitive and neurological deficits; cardiovascular and renal dysfunction; transmission of HIV, viral hepatitis, and sexually transmitted infections; and increased mortality.1-12

Although drug policy in the past decade has focused on the opioid crisis, recent law enforcement data and news reports indicate that methamphetamine availability and use are increasing in the United States.13-17 Methamphetamine drug seizures reported by US Customs and Border Protection increased from 19 613 pounds in fiscal year 2014 to 56 362 pounds in fiscal year 2018.15 Methamphetamine reports in the Drug Enforcement Administration's National Forensic Laboratory Information System have increased 136% since 2008.14 The Drug Enforcement Administration now reports that methamphetamine availability has increased throughout the United States.13

According to the National Survey on Drug Use and Health, 1.9 million people aged 12 years or older reported past-year methamphetamine use, and 1.1 million met diagnostic criteria for a past-year methamphetamine use disorder in 2018.18 An analysis of US drug overdose deaths found that psychostimulant-related (e.g., methamphetamine) deaths increased significantly between 2003 and 2017, with 10 333 overdose deaths involving these drugs in 2017. Furthermore, this analysis reported that opioids, particularly illicit synthetic opioids, are increasingly involved in these deaths. By 2017, 50.4% of psychostimulant-related overdose deaths involved opioids, suggesting that the rise in methamphetamine-related harms is linked to the ongoing opioid overdose epidemic in the United States.19

Several small studies lend further support to the link between resurgent methamphetamine use and the opioid crisis.20-23 Among people engaging with syringe services programs in Seattle, Washington, combined heroin andmethamphetamine injection in the past 3 months increased from 18% in 2009 to 31% in 2017 among men who have sex with men and from 10% to 53% among women andmen who did not have sex with men.20 In a Denver, Colorado, study of people who inject drugs, 50% reported injection of heroin and methamphetamine in the past 12 months in 2015.21 Among individuals seeking treatment in approximately 170 treatment facilities in the United States, past-month methamphetamine use among people with opioid use disorder increased from 18.8% in the second quarter of 2011 to 34.2% in the first quarter of 2017.22

Although these studies provide important information on rising methamphetamine use, they are limited by their small sample sizes, geographic specificity, and limited assessment of sociodemographic characteristics associated with methamphetamine use. To date, an examination of national methamphetamine trends is lacking. To address this gap and to inform prevention, treatment, and response efforts, we examined national treatment data to assess trends in methamphetamine use and the demographic and substance use characteristics associated with methamphetamine use at treatment admission.

METHODS

Data were from 15 747 334 drug-related treatment admissions reported in the 2008- 2017 Treatment Episode Data Set (TEDS) public use files.24 TEDS, reported annually by the Substance Abuse and Mental Health Services Administration, provides information on substance use treatment admissions among people aged 12 years or older to state-licensed or certified substance use treatment centers that receive federal public funding in the United States. TEDS collects data from all states and represents a compilation of data on treatment admissions collected through individual data collection systems of state substance use agencies.

Substance Use Measures

TEDS captures data on the primary substance of use at treatment admission (i.e., substance reported as primarily responsible for treatment admission) as well as secondary and tertiary substances of use at treatment admission, and the usual route of use for each substance, based on self-report by individuals at admission. TEDS may include multiple treatment admissions for the same patient. Thus, TEDS data represent admissions, not individual patients. This study focuses on the 2 772 632 treatment admissions in which any methamphetamine use was reported at treatment admission (i.e., methamphetamine as primary, secondary, or tertiary substance of use) and the subset of

1 791 686 treatment admissions in which methamphetamine was the primary substance of use reported. Usual route of methamphetamine use was categorized as (1) injection, (2) smoking, (3) snorting, and (4) oral or other.

Demographic Measures

TEDS demographic measures include

1. sex;
2. age group;
3. race/ethnicity;
4. US census region (based on US Census Bureau definition) of treatment facility;
5. living arrangement: independent living (living alone or with others without supervision), dependent living (living in a supervised setting such as a residential institution, halfway house, or group home, and children younger than 18 years living with parents, relatives, or guardians or in foster care), or homeless (no fixed address, includes shelters);
6. employment status: full-time (working ‡35 hours per week), part-time (working <35 hours per week), unemployed (looking for work in past 30 days or on layofffrom job), or not in labor force (not looking for work in past 30 days or a student, homemaker, disabled, retired, or resident of or inmate in an institution); and
7. treatment referral source: self-referral, substance abuse provider, health care provider, school or educational, employer or employee assistance program, other community referral, and criminal justice.

Statistical Analyses

First, we estimated the number of any methamphetamine and primary methamphetamine treatment admissions and percentage of drug-related treatment admissions that involved any methamphetamine or primary methamphetamine for each year, from 2008 to 2017, overall and by demographic groups. We used Joinpoint software (version 4.6.0.0, National Cancer Institute, Bethesda, MD) to assess changes in trends. Joinpoint assesses changes in trends by incorporating point estimates and their standard errors, and tests a regression model by using a Monte Carlo permutation method with no joinpoints (i.e., no changes in trends occurring during the assessed time period) against alternative models to determine whether and where more joinpoints (i.e., significant changes in trend) should be added.25 Joinpoint calculates the annual percentage change (APC), a measure of the change in trend over the joinpoint time period. We considered a P value of less than .05 to be statistically significant.

Second, we calculated usual routes of methamphetamine use for each year, from 2008 to 2017, for any methamphetamine and primary methamphetamine treatment admissions. Results are presented as percentages of admissions reporting each route of use. In addition, we calculated the percentage of any methamphetamine or primary methamphetamine admissions reporting use of other substances (i.e., alcohol, marijuana, cocaine, heroin, prescription opioids, and prescription benzodiazepines) for each year.

Finally, using 2017 data, we fit 2 separate multivariable logistic regression models to assess characteristics associated with any methamphetamine and primary methamphetamine treatment admissions among drug-related treatment admissions. Variables included in the model were sex, age group, race/ethnicity, US census region, employment status, living arrangement, and treatment referral source. Models controlled for state-level clustering. We assessed multicollinearity by using variance inflation factors, and it was not identified in final models. Results are presented as adjusted odds ratios (AORs) and 95% confidence intervals (CIs). We conducted all analyses with Stata version 15.1 (Stata Corp LP, College Station, TX).

RESULTS

Any methamphetamine use reported at treatment admission was stable between 2008 (260 364 admissions; 15.1% of drug-related admissions) and 2010 (227 372 admissions; 14.1% of drug-related admissions) before rising to 23.6% (372 926) of drug-related treatment admissions in 2017 (Figure 1, Table A, available as a supplement to the online version of this article at http://www.ajph.org). Primary methamphetamine treatment admissions were stable between 2008 (179 904 admissions; 10.4% of drug-related admissions) and 2010 (152 351; 9.4% of drug-related admissions) before rising to 14.5% (229 336) of drug-related treatment admissions in 2017 (Figure A, Table A, available as supplements to the online version of this article at http://www.ajph.org). The APC for drug-related treatment admissions involving any methamphetamine use remained stable from 2008 to 2010 and then increased

8.8% per year from 2010 to 2017. The APC for primary methamphetamine treatment admissions remained stable from 2008 to 2010 and then increased 7.4% per year from 2010 to 2017.

Methamphetamine Use by Demographic Characteristics

Methamphetamine use among drugrelated treatment admissions was higher among females compared with males (Figure 1, Table A). Among females, the percentage of drug-related treatment admissions involving any methamphetamine use increased from 19.2% of drug-related treatment admissions in 2008 to 28.3% in 2017, an APC of 5.7%. For males, the percentage remained stable from 2008 to 2010 before increasing from 11.7% in 2010 to 20.9% in 2017, an APC of 9.9%. Primary methamphetamine treatment admissions followed similar patterns by sex (Figure A, Table A).

In 2017, the highest percentage of drug-related treatment admissions involving any methamphetamine use was found among those aged 35 to 44 years (27.7%), followed by those aged 25 to 34 years (27.2%) and those aged 18 to 24 years (24.1%; Figure 1, Table A). Among those aged 18 to 24 years, trends remained stable from 2008 to 2010, then increased from 2010 to 2017 (APC= 12.2%). For those aged 25 to 34 years, trends remained stable from 2008 to 2011 and then increased from 2011 to 2017 (APC = 6.9%). For all other age groups, trends increased from2008 to 2017, with APCs ranging from 6.4% among those aged 35 to 44 years to 11.7% among those aged 12 to 17 years. Use patterns and trends for primary methamphetamine admissions were similar to those for any methamphetamine use (Figure A, Table A).

All race/ethnicity groups except non- Hispanic other experienced increases in the percentage of drug-related treatment admissions reporting any methamphetamine use (Figure 1, Table A). The largest percentages in 2017 were among the non- Hispanic American Indian/Alaska Native group (43.5%) followed by the Hispanic (30.6%), non-Hispanic White (26.2%), and non-Hispanic other (26.2%) groups; the non-Hispanic Black group had the lowest percentage, 6.5%. Trends among the non-Hispanic White and non-Hispanic American Indian/Alaska Native groups remained stable between 2008 and 2011 and then increased from 2011 to 2017, with APCs of 8.8% and 11.9%, respectively. Among the Hispanic group, trends remained stable between 2008 and 2010 and then increased from 2010 to 2017 (APC = 7.9%). Trends increased from 2008 to 2017 among the non-Hispanic Black group (APC= 15.7%). Patterns of use and trends for primary methamphetamine admissions were similar to those for any methamphetamine use (Figure A, Table A).

Methamphetamine Use by US Census Region

All US census regions experienced increases in methamphetamine-related treatment admissions between 2008 and 2017 (Figure 1, Table A). The highest percentages were found in the West, with 53.5% of drug-related treatment admissions reporting methamphetamine use in 2017. The lowest percentage was found in the Northeast, with 2.1% reporting methamphetamine use in 2017. The Northeast experienced the largest APCs among census regions, increasing 10.0% per year from 2008 to 2013 and then increasing 36.1% per year from 2013 to 2017. The Midwest and South experienced consistent increases during the study period, increasing 13.6% and 10.1% per year from 2008 to 2017, respectively. The trend in the West was stable from 2008 to 2011 and then increased 7.2% per year from 2011 to 2017. Primary methamphetamine treatment admissions demonstrated similar patterns and trends (Figure A, Table A).

Route of Methamphetamine Use

Among any methamphetamine treatment admissions, smoking methamphetamine was reported as the usual route of use in 58.8% of admissions in 2017, down from 67.3% in 2008 (12.6% relative percentage decrease; P <.001; Figure 2). Injection was reported in 28.4% of admissions in 2017, up from 17.5% in 2008 (62.3% relative percentage increase; P = .002). Snorting was reported in 9.4% in 2017, down from 10.8% in 2008 (P= .016). Oral or other routes of use were reported by 3.4% of admissions in 2017, down from 4.3% in 2008 (P <.001). Among primary methamphetamine treatment admissions, 62.0% reported smoking as the usual route of methamphetamine use, down from 70.3% in 2008 (11.8% relative percentage decrease; P <.001). Injection was reported in 25.9% of primary methamphetamine admissions in 2017, up from 16.8% in 2008 (54.6% relative percentage increase; P <.001). Snorting, reported by 8.9% of admissions in 2017, remained stable during the study period (P = .538); oral or

other routes declined during the study period (P = .031), with 3.2% of admissions reporting oral or other route of use in 2017.

Other Substances Reported at Treatment Admission

In 2017, the most common substances reported at treatment admission among any methamphetamine treatment admissions were marijuana (33.7%), alcohol (25.9%), and heroin (23.6%; Figure 3). Report of alcohol, marijuana, and cocaine use among any methamphetamine treatment admissions declined during the study period. Alcohol declined from 36.1% of admissions in 2008 to 25.9% in 2017 (28.4%relative percentage decrease; P <.001). Marijuana declined from 37.8% of admissions in 2008 to 33.7% in 2017 (10.8% relative percentage decrease; P = .002). Cocaine declined from 10.1% in 2008 to 5.7% in 2017 (43.5% relative percentage decrease; P <.001). Heroin increased from 5.3% of admissions in 2008 to 23.6% in 2017 (345.8% relative percentage increase; P <.001); prescription opioids increased from 3.8% in 2008 to 8.3% in 2017 (115.1% relative percentage increase; P = .021); and benzodiazepines increased from 0.9% in 2008 to 2.7% in 2017 (196.7% relative percentage increase; P <.001). Other substance use among primary methamphetamine treatment admissions followed a similar pattern with the exception of marijuana use, which increased slightly during the study period, from 33.2% in 2008 to 34.3% in 2017 (P <.001).

Multivariable Logistic Regression Analyses

Characteristics associated with increased odds of reporting methamphetamine use at treatment admission in 2017 were (Table 1) females (AOR = 1.41; 95% CI = 1.28, 1.55) compared with males; admissions aged 35 to 44 years (AOR = 1.13; 95% CI = 1.05, 1.21) compared with admissions aged 25 to 34 years; admissions in Midwest (AOR = 17.99; 95% CI=8.40, 38.56), South (AOR= 9.97; 95% CI = 4.35, 22.88), or West (AOR=54.40; 95% CI=35.06, 84.40) compared with Northeast; being unemployed (AOR=1.52; 95% CI=1.29, 1.78) or not in labor force (AOR=1.62; 95% CI=1.29, 2.05) compared with full-time employment; living dependent (AOR=1.45; 95% CI=1.20, 1.76) or homeless (AOR=1.98; 95% CI=1.64, 2.39) compared with independent living; and having a referral from health care provider (AOR=1.38; 95% CI=1.20, 1.60), other community (AOR=1.62; 95% CI=1.26, 2.08), or criminal justice (AOR=2.29; 95% CI=1.79, 2.93) source compared with individual or self-referral. Characteristics associated with lower odds of reporting methamphetamine use at treatment admission in 2017 were persons aged 12 to 17 years (AOR=0.11; 95% CI=0.07, 0.17), 18 to 24 years (AOR=0.74; 95% CI=0.65, 0.85), 45 to 54 years (AOR=0.77; 95% CI=0.66, 0.89), or 55 years or older (AOR=0.38; 95% CI = 0.32, 0.44) compared with those aged 25 to 34 years; non-Hispanic Black (AOR = 0.20; 95% CI = 0.13, 0.32) compared with non-Hispanic White; and having school or educational (AOR=0.25; 95% CI=0.17, 0.36) as a referral source compared with individual or self-referral. Results for primary methamphetamine treatment admissions were similar in magnitude and direction.

DISCUSSION

Methamphetamine use among drug-related treatment admissions increased bymore than 50% in the United States between 2008 and 2017. By 2017, nearly 1 in 4 treatment admissions reported any use of methamphetamine and approximately 1 in 7 admissions reported methamphetamine as the primary substance of use. Importantly, these increases were seen across nearly all demographic groups examined and all census regions and are consistent with recent increases in psychostimulant-related overdose deaths and availability of methamphetamine reported by law enforcement.13-15,19 Furthermore, nearly 1 in 4 methamphetamine-related treatment admissions reported use of heroin in 2017 compared with 1 in 20 admissions in 2008. This is consistent with findings from a recent study that found significant increases in methamphetamine use among people receiving treatment for heroin use disorder over the past decade.26 Taken together, these findings provide strong evidence that the United States is experiencing a substantial resurgence of methamphetamine use that is occurring in the midst of the ongoing opioid overdose epidemic.

The rise inmethamphetamine use reported at treatment admission and the regional variability in the timing and magnitude of those increases mirror recent increases in and geographic spread of methamphetamine availability, as well as increases in psychostimulantrelated overdose deaths.13,14,19 In the West, where methamphetamine has historically had a strong foothold in the illicit drug market, methamphetamine use was reported in more than half of

treatment admissions in 2017, after increasing 7.2% per year since 2011.

Furthermore, reflective of the surge of methamphetamine availability across the United States, areas of the country that have historically not had significant methamphetamine markets or high rates of use or overdose deaths, such as the Northeast, experienced the largest relative percentage increase, 320%, in methamphetamine-related treatment admissions. In addition, large and steady increases in methamphetamine-related treatment admissions were seen in the Midwest and South-regions that have been hit hard by increases in opioid overdoses in recent years.27 A growing population of individuals using methamphetamine, especially in combination with opioids and other substances, could overwhelm already overburdened public health, law enforcement, and substance use treatment systems.

Our findings provide new insight into populations to prioritize for prevention, treatment, and response efforts. In our analysis, females had a higher percentage of drug-related treatment admissions reporting methamphetamine use compared with males. Previous research has found that females consume more methamphetamine and transition from recreational use to dependence more quickly, potentially attributable to underlying gender differences in behavioral and subjective effects of methamphetamine. 28,29 Research also indicates that having a history of trauma, such as experiencing sexual abuse, is common among women who use methamphetamine.30 Thus, efforts to incorporate trauma-informed treatment and tailor treatment to the unique needs of women, including access to womenonly treatment programs, specialized prenatal and parenting care, and services such as child care, could be beneficial to this population.31

Younger adults, aged 18 to 44 years, are driving much of the resurgence in methamphetamine admissions. Methamphetamine use reported among treatment admissions aged 18 to 24 years went from approximately 1 in 9 admissions in 2011 to 1 in 4 in 2017, and admissions among those aged 25 to 34 years and those aged 35 to 44 years increased by more than 50% during the same period. These findings are consistent with recent mortality data showing that some of the largest increases in psychostimulant-involved overdose deaths were seen among these age groups.19 In addition, while those aged 12 to 17 years accounted for less than 2% of methamphetamine-related treatment admissions in 2017, methamphetamine use at treatment admission increased approximately 12% per year between 2008 and 2017 in this group. Taken together, these findings not only highlight the need to expand efforts to identify and link people to evidence-based treatment, but they also underscore the importance of preventing methamphetamine initiation among youths. Universal prevention programs that focus on strengthening youth social-emotional learning skills and other protective factors and reducing risk factors have demonstrated lasting protective effects in reducing substance use, including methamphetamine use.32 Affected communities may consider implementation of these programs as a central component of youth substance use prevention efforts.

Although non-Hispanic Whites comprised the majority of methamphetaminerelated treatment admissions, our findings highlight other race/ethnicity groups that warrant special attention.Methamphetaminerelated treatment admissions among non- Hispanic American Indians/Alaska Natives nearly doubled during the study period, with approximately 45% of admissions involving methamphetamine in 2017, consistent with data on psychostimulant-related overdose deaths indicating disproportionate impact among this population.19 In addition, while the percentage of methamphetamine-related treatment admissions is relatively small among non-Hispanic Blacks, they experienced the largest increases over the study period, nearly increasing 200%. Shifting illicit drug preferences and broader geographic availability of methamphetamine may be contributing to these use patterns13,14,33; further research is needed to better understand underlying drivers of these shifts. Tailoring prevention and treatment interventions that incorporate strategies that address long-standing cultural differences, biases, stigma, and structural barriers that may limit engagement and successful treatment outcomes could be beneficial in addressing the needs of these populations.

Our findings related to changing routes of methamphetamine use carry important implications for both overdose and infectious disease prevention. Although smoking remains the most common route of methamphetamine use, the increases in methamphetamine injection seen in our study-increasing 62% among any methamphetamine-related treatment admissions and 55% among primary methamphetamine admissions-are concerning and consistent with

recent findings among sentinel populations.20,21 Injection rates may be increasing because of the increasing co-use of methamphetamine and injection of opioids, including heroin and illicit fentanyl.20,21 These findings underscore the need for both response strategies to address resurgent methamphetamine use and infectious disease prevention in tandem with efforts to prevent opioid misuse and injection. Expansion of community-based interventions aimed at reducing injection drug use-related harms such as comprehensive syringe services programs are needed.

Beyond infectious disease mitigation, the increase in methamphetamine injection portends challenges with methamphetamine treatment and recovery efforts. Previous research suggests treatment outcomes for methamphetamine use are suboptimal for persons who inject compared with those who smoke or snort.34 Given the lack of medication-based treatment of methamphetamine use disorder, use of multiple treatment modalities such as combining contingency management and community reinforcement approach or cognitive behavioral therapy, in tandem with recovery support services, could be helpful in achieving optimal outcomes.35

Limitations

The study is subject to several limitations. First, TEDS comprises a significant proportion of all admissions to substance use treatment in the United States (Table B, available as a supplement to the online version of this article at http://www.ajph.org); however, it does not capture all admissions. TEDS includes admissions at facilities licensed or certified by state substance use agencies or administratively tracked for other reasons. States may include or exclude reporting by certain treatment sectors such as detoxification facilities and programs in the criminal justice system, and this may change over time. Some state substance use agencies regulate private facilities and methadone clinics, as well as individual practitioners, and require them to report TEDS data. Second, the primary, secondary, and tertiary substances of use reported to TEDS are those that led to the treatment episode, not necessarily a complete enumeration of all drugs used. Third, TEDS is based on self-report data and, thus, may be subject to social desirability bias. Fourth, these data should not be interpreted as prevalence estimates of drug use as TEDS captures admissions to treatment, not the broader population of people using substances. Finally, TEDS may include multiple treatment admissions for the same patient. Thus, TEDS data in this study represent admissions, not individual patients.

Public Health Implications

Treatment admissions involving methamphetamine use increased significantly over the past decade and appear to be linked to the ongoing opioid crisis. There is an urgent need to mobilize public health prevention, treatment, and response strategies to address rising methamphetamine use that are pursued in tandem with efforts already underway to prevent opioid misuse, use disorder, and overdose.

CONTRIBUTORS

C. M. Jones conceptualized the study, performed data and statistical analysis, and was the primary drafter of the article. E. O. Olsen, J. O'Donnell, and D. Mustaquim helped conceptualize the study and contributed to article writing and revisions.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to report.

HUMAN PARTICIPANT PROTECTION

Human participant protection was not required because the study was a secondary analysis of de-identified data.

References

REFERENCES

1. Barr AM, Panenka WJ,MacEwan GW, et al. The need for speed: an update on methamphetamine addiction. J Psychiatry Neurosci. 2006;31(5):301-313.

2. Voce A, Calabria B, Burns R, Castle D, McKetin R. A systematic review of the symptom profile and course of methamphetamine-associated psychosis. Subst Use Misuse. 2019;54(4):549-559.

3. Prakash MD, Tangalakis K, Antonipillai J, Stajanovska L, Nurgali K, Apostolopoulos V. Methamphetamine: effects on the brain, gut and immune system. Pharmacol Res. 2017;120:60-67.

4. Wang TY, Fan TT, Bao YP, et al. Pattern and related factors of cognitive impairment among chronic methamphetamine users. Am J Addict. 2017;26(2):145-151.
5. Darke S, Duflou J, Kaye S. Prevalence and nature of cardiovascular disease in methamphetamine-related death: a national study. Drug Alcohol Depend. 2017;179:174-179.
6. Cheng WS,Garfein RS, Semple SJ, Strathdee SA,Zians JK, Patterson TL. Increased drug use and STI risk with injection drug use among HIV-seronegative heterosexual methamphetamine users. J Psychoactive Drugs. 2010;42(1): 11-18.
7. Strathdee SA, Stockman JK. Epidemiology of HIV among injecting and non-injecting drug users: current trends and implications for interventions. Curr HIV/ AIDS Rep. 2010;7(2):99-106.
8. Cunningham EB, Jacka B, DeBeck K, et al. Methamphetamine injecting is associated with phylogenetic clustering of hepatitis C virus infection among streetinvolved youth inVancouver,Canada. Drug AlcoholDepend. 2015;152:272-276.
9. Darke S, Kaye S, Duflou J. Rates, characteristics and circumstances of methamphetamine-related death in Australia: a national 7-year study. Addiction. 2017;112(12): 2191-2201.
10. Degenhardt L, Sara G, McKetin R, et al. Crystalline methamphetamine use and methamphetamine-related harms inAustralia. Drug Alcohol Rev. 2017;36(2):160-170.
11. Leslie EM, Smirnov A, Cherney A, et al. Simultaneous use of alcohol with methamphetamine but not ecstasy linked with aggression among young adult stimulant users. Addict Behav. 2017;70:27-34.
12. Uhlmann S, DeBeck K, Simo A, Kerr T, Montaner JS, Wood E. Health and social harms associated with crystalmethamphetamine use among street-involved youth in a Canadian setting. Am J Addict. 2014;23(4):393-398.
13. Drug Enforcement Administration. National drug threat assessment, 2018. Available at: https://www. dea.gov/sites/default/files/2018-11/DIR-032-18% 202018%20NDTA%20final%20low%20resolution.pdf. Accessed October 2, 2019.
14. Drug Enforcement Administration.NFLIS-drug special report: methamphetamine reported in NFLIS, 2001-2017. 2019. Available at: https://www.nflis.deadiversion.usdoj. gov/DesktopModules/ReportDownloads/Reports/ 12568NFLISdrugMethamphetamine.pdf. Accessed September 30, 2019.
15. US Customs and Border Protection. CBP Enforcement Statistics FY 2019. Available at: https://www. cbp.gov/newsroom/stats/cbp-enforcement-statistics. Accessed October 2, 2019.
16. Glatter R. In shadow of opioid crisis, methamphetamine use rising in US. Forbes. 2018. Available at: https:// www.forbes.com/sites/robertglatter/2018/10/29/inshadow- of-opioid-crisis-methamphetamine-use-risingin- u-s/#5c9882044a06. Accessed October 1, 2019.
17. Dembosky A. As meth use surges, first responders struggle to help those in crisis. National Public Radio. Available at: https://www.npr.org/sections/healthshots/ 2019/05/01/716404677/as-meth-use-surgesfirst- responders-struggle-to-help-those-in-crisis. Accessed October 2, 2019.
18. Substance Abuse and Mental Health Services Administration. 2017 National Survey on Drug Use and Health. Detailed tables. 2018. Available at: https://www. samhsa.gov/data/sites/default/files/cbhsq-reports/ NSDUHDetailedTabs2017/NSDUHDetailedTabs2017. pdf. Accessed September 30, 2019.
19. Kariisa M, Scholl L, Wilson N, Seth P, Hoots B. Drug overdose deaths involving cocaine and psychostimulants with abuse potential-United States, 2003-2017. MMWR Morb Mortal Wkly Rep. 2019;68(17):388-395.
20. Glick SN, Burt R, Kummer K, Tinsley J, Banta- Green CJ, Golden MR. Increasing methamphetamine injection among non-MSM who inject drugs in King County,Washington. Drug AlcoholDepend. 2018;182:86-92.
21. Al-Tayyib A, Koester S, Langegger S, Raville L. Heroin andmethamphetamine injection: anemerging drug use pattern. Subst Use Misuse. 2017;52(8):1051-1058.
22. Ellis MS, Kasper ZA, Cicero TJ. Twin epidemics: the surging rise of methamphetamine use in chronic opioid users. Drug Alcohol Depend. 2018;193:14-20.
23. Jones CM. Syringe services programs: an examination of legal, policy, and funding barriers in the midst of the evolving opioid crisis in the US. Int J Drug Policy. 2019; 70:22-32.

24. Substance Abuse and Mental Health Services Administration. Treatment Episode Data Set (TEDS) public use files. 2019. Available at: https://wwwdasis.samhsa. gov/dasis2/teds.htm. Accessed September 7, 2019.
25. Kim HJ, Fay MP, Feuer EJ, Midthune DN. Permutation tests for joinpoint regression with applications to cancer rates. Stat Med. 2000;19(3):335-351.
26. Jones CM, Underwood N, Compton WM. Increases in methamphetamine use among heroin treatment admissions in the United States, 2008-17. Addiction. 2019; Epub ahead of print.
27.O'Donnell JK,Gladden RM, Seth P. Trends in deaths involving heroin and synthetic opioids excluding methadone, and law enforcement drug product reports, by Census region-United States, 2006-2015. MMWR Morb Mortal Wkly Rep. 2017;66(34):897-903.
28. Hser YI, Evans E, Huang YC. Treatment outcomes among women and men methamphetamine abusers in California. J Subst Abuse Treat. 2005;28(1):77-85.
29. Mayo LM, Paul E, DeArcangelis J, Van Hedger K, de Wit H. Gender differences in the behavioral and subjective effects of methamphetamine in healthy humans. Psychopharmacology (Berl). 2019;236(8):2413-2423.
30. Maxwell JC. A new survey of methamphetamine users in treatment: who they are, why they like "meth" and why they need additional services. Subst Use Misuse. 2014;49(6):639-644.
31. Ashley OS,Marsden ME, Brady TM. Effectiveness of substance abuse treatment programming for women: a review. Am J Drug Alcohol Abuse. 2003;29(1):19-53.
32. Spoth R, Redmond C, Shin C, Greenberg M, Feinberg M, Trudeau L. PROSPER delivery of universal preventive interventions with young adolescents: longterm effects on emerging adult substance misuse and associated risk behaviors. Psychol Med. 2017;47(13): 2246-2259.
33. Flynn KC, Hoffer LD. Transitioning illicit drug preferences and emerging user identifies in Ohio: the proliferation of methamphetamine use among African Americans. J Ethn Subst Abuse. 2019;18(1):67-88.
34. Rawson RA, Gonzales R, Marinelli-Casey P, Ang A. Methamphetamine dependence: a closer look at treatment response and clinical characteristics associated with route of administration in outpatient treatment. Am J Addict. 2007;16(4):291-299.
35. De Crescenzo F, Ciabattini M, D'Alo GL, et al. Comparative efficacy and acceptability of psychosocial interventions for individuals with cocaine and amphetamine addiction: a systematic review and network metaanalysis. PLoS Med. 2018;15(12):e1002715.

DETAILS

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Baltimore Ceasefire 365: Estimated Impact of a Recurring Community-Led Ceasefire on Gun Violence

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ProQuest document link

ABSTRACT (ENGLISH)

Objectives. To estimate the impact of recurring community-led, weekend-long ceasefires on gun violence in the City of Baltimore, Maryland.
Methods. The City of Baltimore releases detailed data on all crimes occurring in the city. We compiled daily counts of fatal and nonfatal shootings occurring between January 2012 and July 2019 and fit a Bayesian model to estimate the impact of the ceasefires on gun violence during designated weekends after accounting for yearly seasonality, day of the week, calendar days, and overall time trends. We also looked at the 3-day periods following each 3-day ceasefire weekend to test for a possible postponement effect.
Results.There was an estimated 52% (95% credible interval [CI] = 33%, 67%) reduction in gun violence during ceasefire daysand no evidence of a postponement effect on either the next 3 days or the next 3-day weekend following each ceasefire weekend (incidence rate ratio = 0.88; 95% CI = 0.72, 1.06).
Conclusions. The Baltimore Ceasefire weekends may be an effective short-term intervention for reducing gun violence. Future research should aim to understand the key components and transferability of the intervention. (Am J Public Health. 2020;1 10:554- 559. doi:10.2105/AJPH.2019.305513)

FULL TEXT

Headnote

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The homicide rate in Baltimore, Maryland, is among the highest of large cities in the United States, and the vast majority of these killings involve firearms.1,2

In mid-2017, community members in Baltimore called for a city-wide, weekendlong cessation of violence under the title Baltimore Ceasefire.3 They organized 3 public meetings before the first ceasefire weekend with a statement to the city that "Nobody Kill Anybody" for the 72 hours from Friday through Sunday.4 The movement also incorporated a proactive "peace challenge" and decided to rename itself Baltimore Ceasefire 365 to reflect the importance of peace throughout the year and to distinguish the movement from other initiatives. Since then, ceasefire weekends have occurred on a quarterly basis, with 6 to 10 public meetings held across the city between each of the weekends to coordinate planning and invite participation.

Ceasefire weekends are communicated through personal outreach on the streets of Baltimore, social media, radio, television, public events, and newspaper articles. Throughout the weekend, community members are encouraged to organize peacebuilding activities, including helping one another connect to resources to address root causes of violence. These activities-which are voluntary-have included rallies, resource fairs, parties, vigils, and poetry readings. In addition, "sacred space rituals" are performed when someone is killed in the city, wherein groups of

people visit murder locations to pray, burn sage, and express love in the spaces where someone has lost their life to violence.5 These efforts are directed at the city as a whole rather than any specific neighborhood.

Although Baltimore Ceasefire 365 shares the term "ceasefire" with several violence reduction initiatives from other cities, it is not modeled after these initiatives. For instance, in Boston, Massachusetts, Operation Ceasefire was part ofa focused deterrence approach by criminal justice agencies aimed at gang violence.6 In Chicago, Illinois, a program that was originally called CeaseFire is now Cure Violence, an intervention that deploys outreach professionals to specified neighborhoods to deescalate and mediate disputes that might otherwise lead to serious violence.7-12 In 2007, the Baltimore City Health Department itself implemented a replication of Cure Violence called Safe Streets that measured reduced gun violence in 3 of the 4 target neighborhoods.11 Baltimore also started a focused deterrence approach in 2014 called Ceasefire in which criminal justice personnel directly communicated to targeted individuals that any violence would result in a severe criminal justice response, with that group's final operation occurring in late 2015.13 Unlike any of these aforementioned initiatives, the Baltimore Ceasefire 365 movement is entirely community-driven and calls for a literal stop to all violence across the city for discrete weekend-long periods-days when research suggests gun violence is heightened.14

Baltimore Ceasefire 365 is unique from previous and existing initiatives within Baltimore and in other cities, and researchers have not yet tried to estimate the effect of ceasefire weekends on gun violence. In fact, to our knowledge, there have been no evaluations of the effectiveness of any discrete-length ceasefire events in decreasing gun violence in the United States. In this article, we model the impact of Baltimore Ceasefire 365 weekends on gun violence in the city by using data compiled by Baltimore City.

METHODS

The City ofBaltimore has released data on every victim-based crime reported by police since January 2012. We used this data set (ranging from January 1, 2012, to July 6, 2019) to count the number of shootings observed on each day (fatal and nonfatal). We then fit a Poisson regression model of daily shooting counts by using the Stan software via the rstanarm R package (https://mc-stan.org/ rstanarm), which allows for the estimation of multilevel Bayesian models with Hamiltonian Monte Carlo.

The statistical model incorporates the following covariates: a spline for the overall time trend in shootings, 5 a cyclical spline to capture yearly seasonality, a random effect for the day of the week (Monday-Sunday), a random effect for the 366 calendar days of the year (including February 29) to adjust for the effects of special days such as Christmas, a floating indicator for Mother's Day, and a binary predictor for ceasefire days. Baltimore Ceasefire 365 days are the first weekends (Friday, Saturday, and Sunday) of February, August, and November, and the Mother's Day weekend of May, with the first ceasefire weekend occurring in August 2017.

One might raise the concern of a "postponement effect" such that violence that would otherwise have occurred during ceasefire is simply delayed until the weekend is over. We tested this hypothesis by adding an indicator for the 3 days immediately following each 3-day ceasefire weekend as well as the 3-day weekend following each ceasefire weekend.

We did not include demographic or neighborhood-specific covariates (e.g., poverty rates, median household income) in any of these models. Although there are data sources that provide information on longterm trends in such geospatial variables, none of these sources measure short-term changes that would allow us to attribute variance in shootings during single weekends to variance in these factors, and in any case it is not theoretically plausible for geospatial trends to have impacts that are reliably restricted to such brief 3-day time periods. We also did not include separate dummy variables for specific historical events that have influenced trends in gun violence in Baltimore, such as the in-custody death of Freddie Gray and subsequent community and police reaction,16 the trial of police officers involved in Gray's arrest and transport,17 or ongoing problems within local law enforcement.18,19 These events have certainly had a causal impact on gun violence in Baltimore, but their mediumor long-term impacts are captured by the spline time trend in our model, and we are not aware of short-term impacts that coincide with ceasefires.

Please see the data file (available as a supplement to the online version of this article at http://www.ajph.org) for the

full data set and an R script markdown that enables the complete reproducibility of our data preparation and analyses.

RESULTS

There were 6024 shootings observed between January 1, 2012, and July 6, 2019. The time series decomposition (excluding the calendar day effect, which can be found in the online supplement but suggests little evidence of consistent changes in number of shootings on specific calendar days) is given in Figures 1 through 3. The long-term time trend (Figure 1) suggests an increase in shootings beginning around 2015, which likely reflects the events surrounding Freddie Gray's death16 (preceding Baltimore Ceasefire 365 by about 2 years). Another increase is visible in June 2018, which is possibly artificial and attributable to the introduction of the automated "ShotSpotter" system at that time, which increased rates of detection of gunshots in the city.20 The yearly seasonal trend (Figure 2) shows that summers display relatively high rates of shootings and the cold winter months of February and March have relatively low rates. There is no real evidence of a weekday effect (Figure 3). The model suggests that Mother's Days (which intersect the May Ceasefire weekends) tend to see a relative increase in shootings on average rather than a decrease, though that effect is not statistically significant (incidence rate ratio [IRR] = 1.28; 95% credible interval [CI] = 0.79, 1.96).

The full model is plotted over the observed data in Figure 4, with model estimates in dark gray and 80% posterior predictive intervals shaded in light gray. Ceasefire weekends are visible to the naked eye as 8 downward spikes beginning with the first ceasefire event in August 2017. The model estimates a 52% (95% CI = 33%, 67%) reduction in shootings on ceasefire days. For example, during the out-of-sample ceasefire day of August 2, 2019, the model predicted that there would be approximately 2 shootings (50% posterior predictive interval ranging from 1 to 3) versus the approximately 4 shootings that would be expected on the same day in the absence ofa ceasefire (50% posterior predictive interval ranging from 3 to 5). The actual number of shootings observed on August 2, 2019, while this article was in preparation, was 3.

To test for a possible postponement effect, we refit the model with an additional binary predictor for the 3 days following each 3-day ceasefire weekend and the 3-day weekend following each ceasefire weekend. However, we estimated no increase in shootings on these days (IRR = 0.88; 95% CI = 0.72, 1.06).

DISCUSSION

In this study, we evaluated the impact of Baltimore Ceasefire 365 and found that ceasefire weekends feature dramatic reductions in gun violence. While Baltimore Ceasefire 365 organizers have stated that the success of the movement cannot be solely measured by the murder rate and that, even if a murder is committed during the ceasefire weekend, this does not necessarily mean that the effort is a failure, decreasing gun violence is an essential goal of the campaign.21,22 Although there are no signs of an overall decreasing trend in gun violence in Baltimore, this study suggests a one third to two thirds reduction in gun violence during ceasefire weekends, with no evidence ofpostponed violence.

This "ceasefire effect" is consistent with or better than estimates from other gun violence initiatives.23,24 However, it is important to acknowledge unique characteristics of Baltimore Ceasefire 365 that render direct comparison difficult. Ceasefires represent just 12 days per year across the entire city, whereas most other programs are intended to have a year-round effect on specific neighborhoods, which is a substantively different target. In addition, the Ceasefire Weekend intervention is repeatedly activated for a limited time and then deactivated, producing a natural "ABAB" design that allows for extremely robust causal inference and mostly rules out the influence of lurking geospatial trends.

This unique feature ofBaltimore Ceasefire 365 has technical ramifications that make program evaluation easier than it is for other violence prevention programs. For example, a team at Johns Hopkins recently evaluated a Safe Streets program and measured a 2fold increase in monthly homicides in the Baltimore neighborhood ofElwood Park following the introduction of Safe Streets.25 However, it is plausible that this measured increase in violence was attributable to independent background trends that were specific to this neighborhood and that would have produced a measurable increase in homicides regardless of the presence of Safe Streets (e.g., gentrification, increasing

poverty, or other unknown factors).

By contrast, because the Baltimore Ceasefire intervention is repeatedly applied for 3-day periods across the city and then removed, most of these confounding variables are trivially ruled out, and it becomes unnecessary to include demographic or neighborhood-specific covariates in the model (e.g., while poverty is associated with increased violence, it does not cause violence in a series of contained 3-day stretches). The contingent design of the Baltimore Ceasefire 365 movement is thus uniquely amenable to program evaluation and it is therefore easier to cleanly measure its impact.

There are several mechanisms that might explain the success of the Baltimore Ceasefire 365 movement. First, unlike other gun violence interventions, Baltimore Ceasefire 365 is an entirely communitydriven approach not affiliated with any agency or government body. By contrast, the Philadelphia One Vision initiative- which was modeled after several focused deterrence and public health strategies but was not found to be effective at reducing violence-was also described as a grassroots effort, but it collaborated with law-enforcement officials.12 Gun violence initiatives that are driven by law enforcement may be shaped by these frameworks, which can lead to competing goals and priorities that conflict with community concerns, program ownership, and sustainability.26,27

Second, Baltimore Ceasefire 365 is led by Baltimore community members who have been affected by gun violence and who may therefore be more effective interventionists given their background and knowledge. Other gun violence initiatives have also attempted to employ members of the target population among their interventionists. For example, Chicago's Cure Violence program uses violence interrupters who reside in the community and who sometimes have a history of gang membership or incarceration.28 Replication of the Cure Violence model has proven difficult with variable estimates of its effectiveness,9,11,29 but a study of one of these replications found that successful violence mediation required the outreach worker to have credibility and a presence in the community.30 Thus, having strong ties to the community may be a key component of effective gun violence initiatives that is amplified in the community-driven Baltimore Ceasefire 365 movement. An additional potential mediating factor is the promotion of peace-building efforts and events that might serve to target and intensify antiviolence messages and produce a stronger impact.

Limitations

One of the key limitations of the present analysis is that we did not measure potential causal factors that could mediate the strength of this ceasefire intervention. We have attempted to create a research design that can be easily replicated with publicly available data, but contextual factors often interact with public health interventions, and transferability of the Baltimore Ceasefire 365 model could be challenging. Future research should aim to understand the key components and mechanisms of action in this intervention that are associated with reductions in gun violence; for example, awareness of the weekend among those at highest risk, credibility ofthe organizers, perceived social pressures to avoid using violence on those weekends, and the type of violence threatening a city may all affect the strength of this style of intervention, and the importance of these specific factors could be estimated in future research programs.

Researchers and community activists should also consider ways of expanding the impact of this style of intervention beyond specified days. Ceasefire members consciously engage in peace-building activities year-round31 including providing trainings at schools about conflict management, emotional intelligence, and the effects of trauma; going to murder sites year-round to perform Sacred Space Rituals; and engaging in community outreach; and some of the ceasefire weekend activities such as resource fairs may help address root causes of violence and, therefore, have an impact beyond the weekend itself.But this data set does not allow us to test the impact of these practices empirically.

Public Health Implications

Gun violence is a pervasive public health problem in the United States, and there is evidence that certain measures are effective at reducing these harms, including limiting access to firearms32 34 and engaging in focused deterrence and public health initiatives.6 12 Baltimore Ceasefire 365 offers a rare example of a community-driven, discrete-length intervention to reduce gun violence. We found that this initiative produced a substantial reduction in shootings

during designated weekends. While communities wait for effective policies to prevent gun violence, this movement has the potential to reduce harms, and future research should aim to build a roadmap for potential replication of this intervention in other jurisdictions.

CONTRIBUTORS

P. Phalen designed the study, performed the data analysis, and prepared the article.E.Bridgeford and L. Gant advised on model interpretation, participated in article preparation, and are organizers and cofounders ofBaltimore Ceasefire 365. A. Kivisto, B. Ray, and S. Fitzgerald contributed substantially to article preparation and data analysis and interpretation.

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CONFLICTS OF INTEREST

E. Bridgeford, L. Gant, and S. Fitzgerald are unpaid volunteers for Baltimore Ceasefire 365.

HUMAN PARTICIPANT PROTECTION

The institutional review board for University ofMaryland Baltimore reviewed this project proposal and determined that it did not require institutional review board review.

Sidebar

ABOUT THE AUTHORS

Peter Phalen is with the Veterans Affairs Capitol Health Care Network Mental Illness Research, Education, and Clinical Center, and the Department of Psychiatry of the University of Maryland School of Medicine, Baltimore. Erricka Bridgeford is with Baltimore Ceasefire 365, Baltimore, and Community Mediation Maryland, Takoma Park. Letrice Gant is with Baltimore Ceasefire 365. Aaron Kivisto is with the University of Indianapolis, Indianapolis, IN. Brad Ray is with the Center for Behavioral Health and Justice at Wayne State University School of Social Work, Detroit, MI. SimonFitzgerald is with Kings County Hospital Center and the State University ofNew York Downstate College ofMedicine, Brooklyn, NY, and Baltimore Ceasefire 365.

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References

REFERENCES

1. Mirabile F, Nass D. What's the homicide capital of America? Murder rates in US cities, ranked. The Trace. April 26, 2018. Available at: https://www.thetrace.org/ 2018/04/highest-murder-rates-us-cities-list. Accessed September 17, 2019.

2. Federal Bureau of Investigation. Crime in the US 2017. Available at: https://ucr.fbi.gov/crime-in-the-u.s/2017/crime-in-the-u.s.-2017. Accessed September 17, 2019.

3. Baltimore Ceasefire. Available at: https://baltim.oreceasefire.com. Accessed November 25, 2019.

4. "Nobody kill anybody": murder-free weekend urged in Baltimore. Baltimore Sun. July 18, 2017. Available at: https://www.baltimoresun.com/maryland/baltimorecity/bs-md-ci-ceasefire-20170718-story.html. Accessed November 17, 2019.

5. Smith EE. Baltimore's Ceasefire program strives to create peace amid the violence-at least for a weekend. Washington Post. February 8, 2019. Available at: https://www.washingtonpost.com/local/social-issues/ baltimores-ceasefire-program-strives-to-create-peaceamid-the-violence-at-least-for-a-weekend/2019/02/ 08/557c52aa-296d-11e9-b2fc-721718903bfc_story. html. Accessed November 18, 2019.

6. Weisburd D, Braga AA. Police Innovation: Contrasting Perspectives. Cambridge, England: Cambridge University Press; 2019.

7. Butts JA, Bostwick L, Porter J. Denormalizing violence: evaluation framework for a public health model ofviolence prevention. New York, NY: Research and Evaluation Center, John Jay College of Criminal Justice, City University of New York; 2014.
8. Butts JA, Roman CG, Bostwick L, Porter JR. Cure violence: a public health model to reduce gun violence. Annu Rev Public Health. 2015;36(1):39-53.
9. Fox AM, Katz CM, Choate DE, Hedberg E. Evaluation ofthe Phoenix TRUCE project: a replication ofChicago CeaseFire. Justice Q. 2015;32(1):85-115.
10. Picard-Fritsche S, Cerniglia L. Testing a public health approach to gun violence: an evaluation of Crown Heights Save Our Streets, a replication of the Cure Violence model. New York, NY: Center for Court Innovation; 2013.
11. Webster DW, WhitehillJM, VernickJS, Curriero FC. Effects ofBaltimore's Safe Streets Program on gun violence: a replication of Chicago's CeaseFire Program. J Urban Health. 2013;90(1):27-40.
12. Wilson JM, Chermak S. Community-driven violence reduction programs: examining Pittsburgh's One Vision One Life. Criminol Public Policy. 2011;10(4): 993-1027.
13. Webster DW, Buggs SA, Crifasi CK. Estimating the Effects of Law Enforcement and Public Health Interventions Intended to Reduce Gun Violence in Baltimore. Baltimore, MD: Johns Hopkins Bloomberg School of Public Health; 2018.
14. Irvin-Erickson Y, La Vigne N, Levine N, Tiry E, Bieler S. What does Gunshot Detection Technology tell us about gun violence? Appl Geogr. 2017;86:262-273.
15. Hyndman RJ, King ML, Pitrun I, Billah B. Local linear forecasts using cubic smoothing splines. Aust N Z J Stat. 2005;47(1):87-99.
16. MacGillis A. The tragedy of Baltimore. New York Times. March 12, 2019. Available at: https://www. nytimes.com/2019/03/12/magazine/baltimoretragedy-crime.html. Accessed November 21, 2019.
17. Stohlberg SG. Baltimore trial leaves unanswered question: what happened to Freddie Gray? New York Times. December 15, 2015. Available at: https://www. nytimes.com/2015/12/15/us/baltimore-freddie-gray-police-trial.html. Accessed January 27, 2020.
18. US District Court of Maryland. Baltimore City Consent Decree. Available at: https://www.mdd. uscourts.gov/Baltimore-City-Consent-Decree. Accessed November 21, 2019.
19. Lussenhop J. Baltimore rogue police leader sentenced. BBC News. June 7, 2018. Available at: https://www.bbc. com/news/world-us-canada-44402948. Accessed November 21, 2019.
20. Meehan T, Prudente S. Baltimore's new gunshot detection system hears four shootings in first night. Baltimore Sun. June 1, 2018. Available at: https://www. baltimoresun.com/news/crime/bs-md-ci-shotspotter-20180601-story.html. Accessed November 21, 2019.
21. Campbell C, Wells C. Despite killings, Baltimore Ceasefire leaders say spirit of event will continue. Baltimore Sun. August 6, 2017. Available at: https://www. baltimoresun.com/news/crime/bs-md-ci-ceasefire-day-three-20170806-story.html. Accessed November 18,2019.
22. Simon D, Sanchez R. Organizer: despite two weekend shooting deaths, Baltimore ceasefire is a "movement." CNN. August 7, 2017. Available at: https://www.cnn.com/2017/08/06/us/baltimore-ceasefire-ends/index.html. Accessed November 21, 2019.
23. Makarios MD, Pratt TC. The effectiveness ofpolicies and programs that attempt to reduce firearm violence: a meta-analysis. Crime Delinq. 2012;58(2):222-244.
24. Braga AA, Weisburd D, Turchan B. Focused deterrence strategies and crime control: an updated systematic review and meta-analysis of the empirical evidence. Criminol Public Policy. 2018;17(1):205-250.
25. Webster DW, Buggs SAL, Crifasi CK. Estimating the effects oflaw enforcement and public health interventions intended to reduce gun violence in Baltimore. Johns Hopkins Center for Gun Policy and Research. 2018. Available at: https://www.jhsph.edu/research/centers-and-institutes/johns-hopkins-center-for-gun-policy-and-research/_archive-2019/_pdfs/JHSPH-Gun-Violence-in-Baltimore.pdf. Accessed January 27, 2020.
26. Richardson M-A. Framing community-based interventions for gun violence: a review of the literature. Health Soc

Work. 2019;44(4):259-270.
27. McLeroy KR, Norton BL, Kegler MC, Burdine JN, Sumaya CV. Community-based interventions. 2003; 93(4):529-533.
28. Slutkin G, Ransford CL, Decker B, Volker K. Cure Violence-an evidence based method to reduce shootings and killings. Washington, DC: World Bank Group; 2014.
29. Boyle DJ, Lanterman JL, Pascarella JE, Cheng C-C. The impact ofNewark's Operation Ceasefire on trauma center gunshot wound admissions. Justice Res Policy. 2010; 12(2):105-123.
30. WhitehillJM, Webster DW, Frattaroli S, Parker EM. Interrupting violence: how the CeaseFire Program prevents imminent gun violence through conflict mediation. J Urban Health. 2014;91(1):84-95.
31. Baltimore Ceasefire 365. Baltimore Ceasefire Calendar. Available at: https://baltimoreceasefire.com/ calendar. Accessed November 25, 2019.
32. Hemenway D. Reducing firearm violence. Crime Justice. 2017;46(1):201-230.
33. Blumstein A, Wallman J, Farrington D. The Crime Drop in America. Cambridge, England: Cambridge University Press; 2006.
34. Miller M, Hemenway D. Guns and suicide in the United States. NEnglJMed. 2008;359(10):989-991.

DETAILS

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Health Conditions, Outcomes, and Service Access Among Filipino, Vietnamese, Chinese, Japanese, and Korean Adults in California, 2011–2017

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ABSTRACT (ENGLISH)

Objectives. To determine the impact of data disaggregation on the ability to identify health disparities and needs for future research for Filipino, Vietnamese, Chinese, Japanese, and Korean adults in California. Methods. Using available data from the 2011-2017 California Health Interview Survey, we conducted bivariate and multivariable analyses to assess disparities in health conditions, outcomes, and service access compared with non-Hispanic Whites for Asians as an overall group and for each individual subgroup. Results. As an aggregate category, Asians appeared healthier than did non-Hispanic Whites on most indicators. However, every Asian subgroup had at least 1 disparity disguised by aggregation. Filipinos had the most disparities, with higher prevalence of fair or poor health, being obese or overweight, and having high blood pressure, diabetes, or asthma compared with non-Hispanic Whites (P< .05) in multivariable analyses. Conclusions. Failure to disaggregate health data for individual Asian subgroups disguises disparities and leads to inaccurate conclusions about needs for interventions and research. (Am J Public Health. 2020;110:520-526. doi:10.2105/AJPH.2019.305523)

FULL TEXT

Headnote

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Results. As an aggregate category, Asians appeared healthier than did non-Hispanic Whites on most indicators. However, every Asian subgroup had at least 1 disparity disguised by aggregation. Filipinos had the most disparities, with higher prevalence of fair or poor health, being obese or overweight, and having high blood pressure, diabetes, or asthma compared with non-Hispanic Whites (P< .05) in multivariable analyses.

Conclusions. Failure to disaggregate health data for individual Asian subgroups disguises disparities and leads to inaccurate conclusions about needs for interventions and research. (Am J Public Health. 2020;110:520-526. doi:10.2105/AJPH.2019.305523)

Asians are the fastest growing racial group in the United States, with the population growing by 12.8% from 2013 to 2017, a rate 4 times faster than that of the overall US population.1 Currently, California has the largest population of Asian Americans.1 Overall, Asians have historically been branded as a "model minority," despite evidence that Asians are underserved in health care.2 This designation has harmful impacts, as Asian Americans are viewed as healthier than are members of other races and are de-emphasized in research focusing on health disparities.3 Subsequently, few large-scale health surveys specifically tailor methods toward increasing accessibility among Asian subgroups (e.g., providing survey questions in Asian languages) or enabling subgroup analyses rather than an aggregate Asian category.4 Calls for disaggregation of Asian Americans into distinct subgroups to properly assess health disparities and needs for interventions have increased over the years.4-6

Previous efforts to disaggregate health data for Asian Americans have shown substantial variation in mortality patterns,7,8 insurance coverage and health service utilization,9,10 health condition,11,12 and health outcomes.11 13 However, many previous studies focused on a limited set ofhealth dimensions or analyzed data from small samples, which limited the capacity for quantitative disaggregation of health data by health condition and by ethnic group. Although identification of specific differences between Asian subgroups in smaller studies is useful, disaggregation in broader population-based surveys is necessary to better assess health needs for diverse Asian subpopulations. Problematically, many surveys that collect disaggregated data do not contain adequate samples to allow subgroup-specific analyses,4,6 which would help to identify priorities for research and programming.

Given this, our focus was to use the California Health Interview Survey (CHIS) to examine patterns and potential disparities in self-reported health between Asian subgroups. CHIS has been used in previous efforts to assess health disparities by race in California.14,15 Specifically, we examined health indicators (including health condition, health outcomes, and health service access) in a single aggregated Asian category compared with these health indicators disaggregated into Filipino, Vietnamese, Chinese, Japanese, and Korean subgroups. Through these analyses, we provided data-driven identification of how aggregation into a single Asian category limits the identification of health disparities and identified future priorities for research, policy, and health programs.

METHODS

We used 7 years of publicly available data from adults included in the 2011 to 2017 iterations of CHIS. The largest state health survey in the country, CHIS is a random-dial telephone survey using a multistage sampling design conducted in English, Spanish, Cantonese, Mandarin, Korean, Tagalog, and Vietnamese and was initiated in 2001 as a biennial survey. CHIS data have been collected annually since 2011. CHIS employs oversampling of Koreans and Vietnamese to ensure sufficient representation for analysis.

Outcomes

To form a comprehensive understanding about potential health disparities among Asian American subgroups, we selected 4 health indicators based on measures of health condition, health outcomes, and health service utilization

assessed in CHIS. Health condition indicators assessed in CHIS included being obese or overweight, self-reported health status, having a disability, and experiencing serious distress. Self-reported height and weight were used to calculate body mass index (BMI; defined as weight in kilograms divided by the square of height in meters). Non-Hispanic Whites with BMIs of25.0 or above were classified as overweight or obese. Per World Health Organization guidelines, Asians with BMIs of 23.0 or above were classified as overweight or obese.16 Self-reported health status included excellent, very good, good, fair, and poor and was dichotomized into those reporting fair or poor health versus those who did not.

Disability was a CHIS-constructed variable whereby participants were categorized as disabled if they indicated yes to any of the following: blind, deaf, or severe vision or hearing problem; difficulty learning, remembering, or concentrating; difficulty dressing, bathing, or getting around the house; difficulty going outside the home alone to shop or visit a doctor's office; difficulty working at a job or business; or at least 1 limitation in 1 or more basic activity such as walking or climbing stairs. Serious distress was assessed using the Kessler 6 scale, which has a range of6 to 30, andscores of13 or higher are indicative ofserious mental distress in the past 30 days.17

Health outcomes assessed in CHIS included having any previous diagnosis of heart disease, diabetes, or high blood pressure and any occurrence of asthma. Health service access assessed in CHIS included whether participants had a usual source of care besides the emergency room, had seen a doctor in the past year, delayed getting care in the past year, and delayed getting medications in the past year.

Race

Race was assessed through self-report. Participants who indicated they were Asian were asked with which what specific ethnic group they identified. In the public use files, 5 Asian subgroups had sufficient respondents for CHIS to create unique analytic categories: Filipino, Vietnamese, Chinese, Japanese, and Korean. Participants who indicated their race as Bangladeshi, Burmese, Cambodian, Indian, Indonesian, Laotian, Malaysian, Pakistani, Sri Lankan, Taiwanese, Thai, or other Asian were aggregated into a separate "other Asian" category; these participants were included in the aggregate Asian category but were not specifically examined in subgroup analyses because our goal was to present disaggregated estimates. We included non-Hispanic Whites to provide a referent group for our analyses; 13 297 Asians and 88 296 non-Hispanic Whites were included in our sample. Of the 13 297 Asians included, 2101 identified as Filipino, 1939 as Vietnamese, 4106 as Chinese, 1343 as Japanese, and 1587 as Korean.

Covariates

We included the following demographic variables: age, sex, marital status, employment, education, annual income, health insurance status, nativity, and English proficiency. We coded age into 3 categories: 18 to 44 years, 45 to 64 years, and 65 years or older. We dichotomized marital status into those who were married or living with a partner versus those who were not. We coded educational attainment as high school, some college, and bachelor's degree or more. We categorized annual income using the 2011-2017 US Department of Health and Human Services' federal poverty guidelines (FPG) into 138% or less ofFPG, 139% to 400% FPG, and greater than 400% FPG. We assessed nativity using percentage ofa participant's life lived in the United States and we categorized it into 0% to 60%, 61% to 99%, and 100%. We dichotomized English proficiency into participants who spoke English only or had strong English proficiency versus those who did not speak English.

Statistical Analyses

We first created descriptive analyses to assess the distribution of demographic characteristics, general health condition, health outcomes, and health service utilization across the Asian subgroups. We conducted the %2 test by subgroup to assess differences in our study sample. We performed multivariable logistic regressions to assess racial differences for all Asians in an aggregate category compared with non-Hispanic Whites. We then performed specific comparisons for Filipino, Vietnamese, Chinese, Japanese, and Korean adults on each outcome compared with non-Hispanic White adults for all health indicators. Regression models adjusted for all covariates as well as the survey year to minimize correlation based on survey year. Adjusted odds ratios (AORs) and 95% confidence intervals (CIs) are presented. We used sample weights specific to each iteration of CHIS to account for the complex sampling

design and to obtain correct variance estimations for all ofour analyses. We performed all analyses using Stata version 15 (StataCorp LP, College Station, TX).

RESULTS

Weighted sample characteristics are presented in Table 1. Because of CHIS's design and sample weights, the sociodemographic characteristics of the sample reflect the nonHispanic White and Asian population in California overall. A majority or plurality of Asians in our sample were female (53.4%), aged 18 to 44 years (57.3%), making a yearly income of more than 400% of the FPG (45.2%), college graduates (57.2%), employed (66.5%), married or living with a partner (58.3%), proficient in English (82.4%), and insured (89.8%) and had spent 0% to 60% of their life in the United States (49.2%).

Prevalence of Health Burdens

Weighted information about the health of respondents is presented in Table 2. Because of varying ages for our sample, we included weighted information about the health of respondents stratified by age in Table A (available as a supplement to the online version of this article at http:// www.ajph.org).

For health condition indicators, Vietnamese participants (36.4%) reported fair or poor health more than twice as often as did non-Hispanic Whites (13.9%) and Asians overall (17.8%). Filipino (72.5%) andJapanese (65.0%) respondents had a higher proportion ofindividuals who were obese or overweight than did non-Hispanic Whites (57.7%) and Asians overall (61.2%). Filipino (3.6%) and Korean (5.0%) participants reported serious distress more often than did non-Hispanic Whites (3.2%) and Asians overall (2.5%). No subgroup had higher rates of disability than did non-Hispanic Whites, but Vietnamese (30.1%) and Filipino (26.5%) respondents had higher rates of disability than did Asians as an aggregate group (21.0%).

For health outcome indicators, Filipino andJapanese adults (both 32.3%) reported having high blood pressure more often than did non-Hispanic Whites (31.0%) and Asians overall (22.9%). Filipino (12.6%), Japanese (10.6%), and Korean (8.8%) respondents had higher rates ofdiabetes than did non-Hispanic Whites (7.5%) and Asians overall (8.4%). Filipino (17.9%) andJapanese (16.7%) participants reported having asthma more often than did non-Hispanic Whites (16.1%) and Asians overall (11.5%). No subgroup had higher rates of heart disease than did nonHispanic Whites, but Filipino (6.1%), Vietnamese (4.8%), andJapanese (4.7%) respondents had greater rates of heart disease than did Asians overall (4.4%).

For health service access indicators, Korean (27.0%) and Vietnamese (18.4%) participants had higher rates of lacking a usual source of care than did both non-Hispanic Whites (10.9%) and Asians overall (17.4%). Chinese (27.1%), Korean (26.4%), and Vietnamese (23.1%) adults reported going without a doctor's visit in the past year more often than did both non-Hispanic Whites (11.7%) and Asians overall (23.0%). No subgroup delayed medications more often than did nonHispanic Whites (11.7%), but Korean (9.0%) and Filipino (8.4%) respondents delayed medications more often than did Asians overall (6.6%). Korean participants (16.6%) delayed seeking care more often than did both non-Hispanic Whites (15.7%) and Asians overall (9.2%).

Multivariable Modei Results

In Table 3, we present AORs for all health indicators after controlling for all covariates.

Health condition. For health condition, although Asians overall had higher odds (that were ultimately nonsignificant) of reporting fair or poor health (AOR = 1.2; 95% CI = 1.0, 1.4; P = .13) compared with non-Hispanic Whites, Vietnamese (AOR = 1.6; 95% CI = 1.2, 2.3; P< .05) and Filipino (AOR = 1.4; 95% CI = 1.0, 1.9; P< .05) respondents reported fair or poor health more often than did non-Hispanic Whites. Asians overall reported higher odds ofbeing obese or overweight (AOR=1.8; 95% CI = 1.4, 2.4; P< .001) compared with non-Hispanic Whites, whereas Filipino participants reported odds of being obese or overweight (AOR = 2.9; 95% CI = 2.1, 3.8; P< .001) nearly 3 times that of the odds for nonHispanic Whites, and Chinese participants also reported higher odds ofbeing obese or overweight (AOR = 1.4; 95% CI = 1.1, 1.8; P< .05) compared with non-Hispanic Whites.

Neither Asians overall nor any subgroup had significantly higher odds of serious distress compared with non-Hispanic Whites after disaggregating. Asians overall had lower odds of disability (AOR = 0.7; 95% CI = 0.6, 0.9; P< .05) compared with non-Hispanic Whites, but Filipino (AOR = 1.1; 95% CI = 0.8, 1.4; P = .62) and Vietnamese (AOR

= 0.9; 95% CI = 0.5, 1.3; P =.49) participants were the only Asian subgroups to have odds of disability that were not significantly lower than those of non-Hispanic Whites.

Health outcomes. For health outcomes, Asians overall had no significant difference in odds of having high blood pressure (AOR = 1.1; 95% CI = 0.9, 1.4; P = .20) compared with non-Hispanic Whites, but Filipino respondents had 2 times the odds (AOR = 2.0; 95% CI = 1.4, 2.8; P< .001) of having high blood pressure compared with non-Hispanic Whites. Asians overall had nearly twice the odds of having diabetes (AOR = 1.8; 95% CI = 1.4, 2.4; P< .001) compared with non-Hispanic Whites, whereas Filipinos overall had nearly 3 times the odds of having diabetes (AOR = 2.9; 95% CI = 2.0, 4.3; P< .001) as did non-Hispanic Whites.

Asians overall had no significant difference in odds of having asthma compared with non-Hispanic Whites (AOR= 1.0; 95% CI = 0.8, 1.3; P = .84), but Filipino respondents had higher odds of having asthma (AOR = 1.4; 95% CI = 1.0, 2.0; P< .05) compared with non-Hispanic Whites. Neither Asians overall nor any subgroup had significantly higher odds of heart disease compared with non-Hispanic Whites after disaggregating.

Health service access. For health service access, Asians overall had odds of having no usual source of care (AOR = 1.2; 95% CI = 1.0, 1.5; P = .09) that were not significantly different from those ofnon-Hispanic Whites, but Korean participants had more than 2 times the odds of having no usual source of care (AOR = 2.4; 95% CI = 1.6, 3.7; P< .001) compared with non-Hispanic Whites. Although Asians overall did not significantly differ from non-Hispanic Whites on having no doctor's visit in the past year (AOR= 1.2; 95% CI = 0.9, 1.4; P = .15), Chinese respondents had higher odds of having no doctor's visit in the past year (AOR= 1.5; 95% CI = 1.1, 1.9; P< .05).

Asians overall had lower odds of having delayed medications (AOR = 0.6; 95% CI = 0.4, 0.7; P< .001) compared with non-Hispanic Whites, although Filipino (AOR = 0.8; 95% CI = 0.5, 1.1; P = .21), Japanese (AOR = 0.6; 95% CI = 0.4, 1.1; P = .08), and Korean (AOR = 0.6; 95% CI = 0.3, 1.1; P = .08) respondents did not significantly differ from non-Hispanic Whites in having delayed medications. Asians overall also had lower odds of having delayed care (AOR = 0.5; 95% CI = 0.4,0.6; P< .001) compared with non-Hispanic Whites, but Korean (AOR = 1.2; 95% CI = 0.7, 2.0; P = .52) and Japanese (AOR = 0.8; 95% CI = 0.4, 1.3; P = .28) participants did not significantly differ from non-Hispanic Whites in having delayed care.

DISCUSSION

Data disaggregation for Asians in largescale research efforts has been long identified as a way to combat the pervasive notion of Asian Americans as the model minority assumed to be healthier.3 Using CHIS data, we identified many health disparities through disaggregation that would otherwise be obscured when an aggregate Asian category was used. These findings point to several disparities that, because of disaggregation, can be prioritized in research and interventions that would have otherwise been masked by aggregation. Without disaggregation, these disparities may continue to go unaddressed when distinct Asian subgroups are combined into an aggregate category. Building on previous arguments regarding the need for disaggregation,4-6 we extend points made in previous articles about disaggregation, illustrating the distortive effect of using a single Asian category through our analyses.

Overall, we identified several disparities in both our descriptive statistics and our models that would have otherwise gone unidentified for each of the subgroups included in our analyses. Relying on aggregate statistics may have encouraged action to address obesity and overweight disparities, higher prevalence of diabetes, and gaps in accessing a usual source of care or having a doctor's visit in the past year. However, using an aggregate Asian category would not prompt further investigation and action into serious distress faced by Korean adults or the third of Vietnamese respondents in fair or poor health. Therefore, the aggregation ofsubgroup data into a single Asian category should be reframed as a choice that leads to inaccurate conclusions about health. Doing so ensures that efforts to protect Asian Americans' right to health are properly informed and targeted.

Importantly, merely including different subgroups as options during data collection must be identified as insufficient. Guidelines for better data collection practices that can address the need for disaggregation already exist.4,6 Investment in data collection practices, such as oversampling Asian subpopulations and surveying in their languages, that enable disaggregation should not be viewed as good, but unnecessary, features of populationbased

health research. Instead, these investments are critical steps toward producing accurate evaluations ofthe health ofAsians in the United States. Population-based surveys drive our understanding ofwhat health needs exist and what actions should be taken to correct these challenges. Therefore, aggregation acts as a barrier to identifying interventions that can be used to reduce costs in health service provision (through improved prevention activities) and improve health outcomes among minority populations.

Previously, reports using 2004-2006 data from the National Health Interview Survey (NHIS) that attempted to show disaggregated data had inadequate sample sizes (with large SEs).18 A 2016 report using2010-2014 NHIS data concluded that Asian subgroups were healthier than average,19 but consistent with our findings, the disaggregated trends showed variation across Asian subgroups. In both reports, limitations from inadequate samples and non-Asian language administration of the NHIS present opportunities for improving Asian American population health insights. Currently, in addition to English and Spanish, CHIS is conducted in several Asian languages, and oversamples for Koreans and Vietnamese. Although investment in practices that enable meaningful disaggregated analyses do have upfront costs, increased prevention and improved targeting can yield savings once efforts are more appropriately tailored.

Although all Asian subgroups certainly were disadvantaged by aggregation of health data, Filipinos in particular had the most disparities identified after disaggregation. Indeed, a key finding of this study is that Filipinos appeared to be in the worst health of all Asian subgroups included in these analyses, which suggests a need to address Filipinospecific needs in future policies and interventions. These findings are consistent with a growing body of research demonstrating a need to address chronic diseases among Filipino Americans.20-22 Paradoxically, Filipinos are overrepresented in the provision of health23,24 and long-term care services in the United States25 27 but, according to the analyses presented here, may face unique drivers of health disparities in their own lives. Further research and interventions are thus needed to specifically address the needs of Filipino Americans.

Importantly, further research is needed to assess the drivers of disparities identified. Social determinants ofhealth were included as covariates,28 although other cultural, behavioral, and structural factors not included in CHIS may also drive disparities. Previous research has suggested that different Asian subgroups have distinct risk profiles in health behaviors,29,30 which may contribute to the underlying trends observed in this study. Additionally, insurance coverage and annual provider visits may not reflect access to or utilization of care because distinct barriers to care-including unfamiliarity with patient- provider dynamics, perceived discrimination in health care, and a general avoidance ofcare until absolutely necessary-may limit access and utilization ofcare, even when patients are j 31,32 insured.

Qualitative research is necessary, as perspectives into patterns of behavior or other disparities not captured by quantitative research can better inform interpretations of results, targeting for interventions, and intervention content tailored to each Asian subpopulation. Lastly, contextualizing disparities we have identified alongside those faced by other racial groups (e.g., Black and Hispanic Californians) is important for identifying priorities for research and interventions. Future research including the disparities faced by these groups alongside Asian subgroups can aid in the identification of communities or shared needs for interventions that can yield more efficient targeting of resources.

Limitations

There are limitations to this study. First, these findings may not be generalizable outside California, marking a need to study similar indicators in health condition, outcomes, and service access in other areas with high Asian populations. These findings should not be considered representative ofall Asians in the United States; New York, Texas, New Jersey, and Hawaii, among other states, also contain substantial Asian populations.

Second, we relied on self-reported metrics ofhealth. Stigmatized health conditions, such as mental health,33 may be underreported, whereas socially desirable actions, such as seeing a doctor in the past year, may be overreported. Additionally, relying on reported diagnoses ofoutcomes like high blood pressure and diabetes may substantially underestimate the prevalence of these health outcomes in our sample. For example, previous research suggests that more than half of Asian Americans with diabetes may be undiagnosed.34

Lastly, although we critique aggregation, many Asian groups were included in CHIS but were aggregated into another Asian category because of insufficient sample size. These groups were included in our overall Asian category for analyses, but we could not perform a subgroup-level analysis. Future research focused on members ofthese groups is warranted and necessary, as disparities among these subpopulations may also be masked by the current practice ofaggregating their members into a single Asian category. Additional research is necessary to identify health disparities in these groups as efforts continue to ensure the right to health for every Asian American.

Public Health Implications

Overall, these findings support further data disaggregation in other large-scale research efforts to support interventions tailored specifically to Asian subpopulations in need. Interpreting the aggregated results using a single Asian category would provide little support for the need to dedicate resources to improving the health of any Asians in California. Disaggregation showed that each Asian subgroup faced disparities in health condition, outcomes, and service access that would have been masked. Altogether, disaggregation is a necessary process to ensure that health needs can be properly identified where they exist among diverse sets of Asians in the United States. Stronger and more accurate research and programming might be enabled by greater investment in practices such as oversampling Asian subgroups and providing surveys in Asian languages that can ensure appropriate sample size for analysis by subgroup, as well as a broader commitment toward presenting data by Asian subgroup. ÂfPU

CONTRIBUTORS

A. C. Adia devised the research question and study, conducted the analyses, interpreted the results, and led the writing of the article. J. Nazareno, D. Operario, and N. A. Ponce assisted in refining the analyses, strengthened interpretations ofthe results, and contributed to the writing of the article. All authors discussed article findings and contributed to revisions.

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Note. This article represents the ideas of the authors and does not necessarily reflect the views ofany institution or sponsors.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to report.

HUMAN PARTICIPANT PROTECTION

This study used publicly available data and so was not subject to institutional review board approval.

Sidebar

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References

REFERENCES

1.US Census Bureau. 2013-2017 American Community Survey 5-year estimates. Available at: https://www. census.gov/programs-surveys/acs/technical-documentation/ table-and-geography-changes/2017/5-year.html. Accessed January 5, 2020.

2. Chen MS, Hawks BL. A debunking of the myth of healthy Asian Americans and Pacific Islanders. Am J Health Promot. 1995;9(4):261-268.

3. Yi SS, Kwon SC, Sacks R, Trinh-Shevrin C. Commentary: persistence and health-related consequences of the model minority stereotype for Asian Americans. Ethn Dis. 2016;26(1):133-138.

4. Islam NS, Khan S, Kwon S, Jang D, Ro M, TrinhShevrin C. Methodological issues in the collection, analysis, and reporting ofgranular data in Asian American populations: historical challenges and potential solutions. JHealth Care

Poor Underserved. 2010;21(4):1354-1381.
5. Ghosh C. Healthy People 2010 and Asian Americans/ Pacific Islanders: defining a baseline of information. Am J Public Health. 2003;93(12):2093-2098.
6. Holland AT, Palaniappan LP. Problems with the collection and interpretation ofAsian-American health data: omission, aggregation, and extrapolation. Ann Epidemiol. 2012;22(6):397-405.
7. Jose PO, Frank AT, Kapphahn KI, et al. Cardiovascular disease mortality in Asian Americans (2003-2010). J Am Coll Cardiol. 2014;64(23):2486-2494.
8. Hastings KG, Jose PO, Kapphahn KI, et al. Leading causes of death among Asian American subgroups (2003-2011). PLoS One. 2015;10(4):e0124341.
9. Tan C, Wyatt LC, Kranick JA, Kwon SC, Oyebode O. Factors associated with health insurance status in an Asian American population in New York City: analysis ofa community-based survey. J Racial Ethn Health Disparities. 2018;5(6):1354-1364.
10. Carreon DC, Baumeister SE. Health care access among Asian American subgroups: the role of residential segregation. J Immigr Minor Health. 2015;17(5):14511457.
11. Mui P, BowieJV, Juon H-S, Thorpe RJ. Ethnic group differences in health outcomes among Asian American men in California. Am J Men Health. 2017;11(5): 1406-1414.
12. Staimez LR, Weber MB, Narayan KMV, Oza-Frank R. A systematic review ofoverweight, obesity, and type 2 diabetes among Asian American subgroups. Curr Diabetes Rev. 2013;9(4):312-331.
13. Fuller-Thomson E, Brennenstuhl S, Hurd M. Comparison of disability rates among older adults in aggregated and separate Asian American/Pacific Islander subpopulations. Am J Public Health. 2011;101(1):94-100.
14. Wang L, Southerland J, Wang K, et al. Ethnic differences in risk factors for obesity among adults in California, the United States. J Obes. 2017; Epub ahead of print.
15. Du Y, Xu Q. Health disparities and delayed health care among older adults in California: a perspective from race, ethnicity, and immigration. PublicHealth Nurs. 2016; 33(5):383-394.
16. World Health Organization Expert Consultation. Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies. Lancet. 2004;363(9403):157-163. [Erratum in Lancet. 2004;363(9412):902]
17. Kessler RC, Andrews G, Colpe LJ, et al. Short screening scales to monitor population prevalences and trends in non-specific psychological distress. Psychol Med. 2002;32(6):959-976.
18. Barnes PM, Adams PF, Powell-Griner E. Health characteristics of the Asian adult population: United States, 2004-2006. Adv Data. 2008;(394):1-22.
19. Bloom B, Black LI. Health of Non-Hispanic Asian Adults: United States, 2010-2014. Hyattsville, MD: National Center for Health Statistics; 2016. NCHS data brief no. 247.
20. Ghimire S, Cheong P, Sagadraca L, Chien L-C, Sy FS. A health needs assessment of the Filipino American community in the Greater Las Vegas Area. Health Equity. 2018;2(1):334-348.
21. Bhimla A, Yap L, Lee M, Seals B, Aczon H, Ma GX. Addressing the health needs of high-risk Filipino Americans in the Greater Philadelphia Region. J Community Health. 2017;42(2):269-277.
22. Montano JJ, Acosta-Deprez V, Sinay T. Assessing the health care needs ofFilipino Americans in Greater Long Beach. Public Adm Manag Middlet. 2009;14(1):156-190.
23. Choy CC. Empire of Care: Nursing and Migration in Filipino American History. Durham, NC: Duke University Press; 2003.
24. US Department ofHealth and Human Services. The registered nurse population: findings from the 2008 National Sample Survey of Registered Nurses. 2010. Available at: https://bhw.hrsa.gov/sites/default/files/bhw/nchwa/rnsurveyfinal.pdf AccessedJanuary 5,2020.
25. Riley K, Nazareno J, Malish S. 24-hour care: work and sleep conditions ofmigrant Filipino live-in caregivers in Los Angeles. Am JInd Med. 2016;59(12):1120-1129.
26. Nazareno J. Welfare state replacements: deinstitutionalization, privatization and the outsourcing to Immigrant

Women Enterprise. Int JHealth Serv. 2018;48(2): 247-266.
27. Browne CV, Braun KL, Arnsberger P. Filipinas as residential long-term care providers: influence of cultural values, structural inequity, and immigrant status on choosing this work. J Gerontol Soc Work. 2007;48(3-4): 439-455.
28. Singh GK, Daus GP, Allender M, et al. Social determinants ofhealth in the United States: addressing major health inequality trends for the nation, 1935-2016. Int J MCH AIDS. 2017;6(2):139-164.
29. Becerra MB, Herring P, Marshak HH, Banta JE. Social determinants of physical activity among adult AsianAmericans: results from a population-based survey in California. J Immigr MinorHealth. 2015;17(4):1061-1069.
30. Maxwell AE, Crespi CM, Alano RE, Sudan M, Bastani R. Health risk behaviors among five Asian American subgroups in California: identifying interventionpriorities.JImmigrMinorHealth.2012;14(5):890-894.
31. Clough J, Lee S, Chae DH. Barriers to health care among Asian immigrants in the United States: a traditional review. J Health Care Poor Underserved. 2013;24(1): 384-403.
32. Lee S, Martinez G, Ma GX, et al. Barriers to health care access in 13 Asian American communities. Am J Health Behav. 2010;34(1):21-30.
33. Leong FTL, Lau ASL. Barriers to providing effective mental health services to Asian Americans. Ment Health Serv Res. 2001;3(4):201-214.
34.Menke A, Casagrande S, Geiss L, Cowie CC. Prevalence of and trends in diabetes among adults in the United States, 1988-2012. JAMA. 2015;314(10): 1021-1029.

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Toward Epistemic, Intersectoral, and Disciplinary Humility for Population Health Science

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ABSTRACT (ENGLISH)

Toward Epistemic, Intersectoral, and Disciplinary Humility for Population Health Science Philosophy of Population Health: Philosophy for a New Public Health Era By Sean A. Valles London: Routledge; 2018 Hardback: 212 pp; $37.59 ISBN-10: 036735862X ISBN-13: 978-0367358624

FULL TEXT

Toward Epistemic, Intersectoral, and Disciplinary Humility for Population Health Science Philosophy of Population Health: Philosophy for a New Public Health Era By Sean A. Valles London: Routledge; 2018 Hardback: 212 pp; $37.59 ISBN-10: 036735862X ISBN-13: 978-0367358624

Sean Valles is a philosopher of science interested in population health ethics. With Philosophy of Population Health,

he offers an intriguing book,1 written with the intent to "clarify the relationship between the theory/ practice of population health sciences and the ethical goals of health equity" (p. 161). He does this on roughly 200 pages in eight chapters that are organized into three parts. The first part deals with the meaning of health, the second with determinants of health, and the third with health equity. Valles places each part into the wider context of one of three major areas of philosophical discourse: metaphysics (reflection on meaning), epistemology (reflection on knowledge), and ethics (reflection on morals).

Taken together, the three parts provide a comprehensive and innovative look at population health science. The concept has been around for a while. Perhaps the first formal attempt to define population health was published in AJPH by Kindig and Stoddart: "The health outcomes of a group of individuals, including the distribution of such outcomes within the group. "2(p381) Neither these authors nor others distinguish clearly between "population health" and "population health science," so that the former term is often used to mean the latter. In a similarly inclusive way, Valles takes population health to be

a loosely organized field of research and practice, united by a commitment to understanding patterns of health distribution within and between human populations, and to achieving desirable patterns of health distribution via interdisciplinary and intersectoral efforts [that is] also committed to the view that health's causes and effects are embedded in nuanced ways within human populations' diverse cultures, social structures, and environments. (p. 4)

Right from the beginning, Valles refuses to follow any one single definition or conceptualization of population health. Instead, he offers his own decidedly inclusive and pluralist view, not just to be inclusive and pluralist but to acknowledge that both population health and population health science are young, developing concepts that have the potential to overcome narrow, individualistic, and potentially even hazardous notions ofhealth and health care as they are enshrined in the biomedical model and shallow versions of public health targeting lifestyle changes to improve individuals' health. This "activist stance" makes Valles's book a pleasure to read and stand out among others that deal with population health in a more descriptive, textbook-like fashion.

Valles proposes a fusion of the World Health Organization (WHO) definition ofhealth (with its positive focus on well-being) with aspects of the work of McDowell et al.3 and Arah4 (with its focus on the life trajectory). The resulting conception of

health as a lifelong complete physical, mental and social well-being . . . insists that health cannot be adequately understood as a phenomenon that exists at a single moment in time, but it necessarily refrains from dictating to any population what it means to have complete well-being. (p. 14)

One particularly interesting aspect of Valles's proposal is that, in his view, the WHO definition is often misinterpreted as an "off-the-shelf' definition, whereas he prefers to think of it as a metaconcept to be used in custom-tailored ways according to individual populations' needs (chapter 3, p. 65). In support of this view, he offers a case study of health disparities between Aboriginal and settler Australians (pp. 71-75), which have been tackled by the 2008 "Close the Gap" initiative, which builds on the recognition of the importance of social determinants of health and a life course perspective of health and puts community participation as well as bidirectional flow ofknowledge between population health practitioners and the populations served front and center. I applaud Valles for opening a door for inclusion, while others seem to prefer rather exclusive definitions of health.

Early in the book Valles acknowledges that population health and public health are not the same and that their differences and similarities are still a matter of debate. He acknowledges that terminological difficulties are "typical in young and developing fields" and sees "growing support for a new set of theories and methods-those of population health as opposed to a narrowly conceived public health" (p. 2). This becomes slightly problematic in the second part of the book (chapters 4 and 5), where he defends a broad vision ofpopulation health against narrow visions of public health. He calls this tension the "boundary problem" of population health.

Interestingly, one of the authors Valles quotes as standing in opposition to his broad vision for population health, Mark Rothstein, does indeed defend a narrow definition of public health-"specifically authorized activities by public officials to protect, promote and improve population health"5(p84)-but also holds a broad view of population health, as Valles does. From this perspective, there seemsto be no conflict at all, simply because population health and

public health are not identical and can, thus, not be directly compared with regard to their boundaries. What remains to be discussed in detail is how and to what extent Valles's vision of population health should be organized, implemented, and paid for, just like public health as defined by Rothstein.

Valles also explores differences and similarities between health needs and solutions and health care needs and solutions, between epidemiology and medicine, between population health and public health approaches; and he calls for inclusive rather than exclusive efforts to improve population health. In all of this, he "advocate[s] for the importance of investigating and intervening in upstream causes [without saying] that more proximate causes, or mechanisms, are unimportant" (p. 122).

The third section of the book is about health equity and how to achieve it. Valles discusses tradeoffs and juxtapositions among different stakeholder groups in population health science (in chapter 6) and the role it plays in debates about the meaning of health equity (chapter 7). As everywhere else in the book, he illustrates his arguments with pertinent and interesting case studies.

Valles's main accomplishment is to have offered a unique philosophical perspective of population health. Over long stretches, he builds on the work of others (as we all do), for example, Arah's4 life course perspective and Goldberg's6 defense of wide boundaries for public health. In chapter 8, his final chapter, he adds to his deliberately politicized discussion of previous chapters the notion that epistemic, intersectoral, and disciplinary humility would be a good starting point for successful population health and population health science.

Philosophy of Population Health is fascinating because it pulls together strands of discussion from multiple literatures and weaves them into a mosaic-ish, still coherent whole. However, Valles's technique to cover as much of population health as possible, from the epistemology of causation to the social ethics of health policy, leaves one with the impression that some of the points he raises deserve a more elaborate discussion than offered here. The upside of this downside is, obviously, that Valles has laid the groundwork on which he and others can now build.

The book is very accessible; no prior knowledge in philosophy or population health is necessary, although it would be helpful at times. Therefore, I do not hesitate to recommend it to a broad readership. Any population health practitioner or theoretician interested in thinking about meaning, reasoning, and ethics in population health will benefit from reading Valles's arguments, whether she works primarily in health care or comes from a public health perspective. I think the book would be a particularly interesting choice for interdisciplinary courses in public health ethics and medical humanities programs. Graduate students should be aware of the growing literature at the intersection between philosophy and population health. May these ideas catch on and contribute to better health for all. >4jPI-l

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CONFLICTS OF INTEREST

The author has no conflicts of interest to declare.

Sidebar

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References

REFERENCES

1.Valles SA. Philosophy ofPopulation Health Science: Philosophy for a New Public Health Era. Milton Park, UK: Routledge; 2018.

2. Kindig D, Stoddart G. What is population health? Am J Public Health. 2003; 93(3):380-383.

3. McDowell I, Spasoff RA, Kristjansson B. On the classification of population health measurements. Am J Public Health. 2004;94(3):388-393.

4. Arah OA. On the relationship between individual and population health. Med Health CarePhilos. 2009;12(3):235-

244.
5. Rothstein MA. The limits of public health: a response. Public Health Ethics. 2009;2(1):84-88.
6. Goldberg DS. In support ofa broad model ofpublic health: disparities, social epidemiology and public health causation. Public Health Ethics. 2009;2(1):70-83.

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Single-Payer Reform: Heed the Evidence, Not the Soothsayers/Comments

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ABSTRACT (ENGLISH)

Advocating single-payer reform in the United States is a fool's errand. At least that's what most authors in the November 2019 AJPH special section on health care financing counseled. Contrary to what we and others advocated, also in the AJPH,1 they advise pressing for more "realistic" reforms, like small improvements to the Affordable Care Act (ACA), or a public option, or perhaps a German-style multipayer system.
That advice rests on the shaky science of political prognostication and discounts the real-world evidence on what works and what doesn't in health care finance.
Despite the ACA, 30 million remain uninsured, tens of millions with coverage face ruinous out-of-pocket costs, death rates are rising, and the growth of medical expenditures continues to outpace inflation. Even the most ambitious proposed tweaks to the ACA would leave millions uninsured or saddled with unaffordable copayments and deductibles.
By contrast, single-payer systems have a track record of success. Until Canada implemented its single-payer reform, its health care financing and delivery systems mirrored those of the United States, health costs were virtually identical, and Canada trailed in life expectancy and infant mortality. Soon thereafter Canada pulled ahead on health outcomes and fell behind on expenditures.

FULL TEXT

Advocating single-payer reform in the United States is a fool's errand. At least that's what most authors in the November 2019 AJPH special section on health care financing counseled. Contrary to what we and others advocated, also in the AJPH,1 they advise pressing for more "realistic" reforms, like small improvements to the Affordable Care Act (ACA), or a public option, or perhaps a German-style multipayer system.
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Today, Canada's life expectancy is 3.4 years longer, its infant mortality rate 22% lower (https://bit.ly/2rVObD0), and its income-based health inequities2 are far smaller than ours. In conditions whose outcomes closely track care quality, such as type-1 diabetes, end-stage renal disease, and cystic fibrosis,3 Canadians fare better.

Canada produces these superior outcomes at spectacularly lower costs: a difference of $6198 per capita in 2018. US private insurers' overhead siphons $243.8 billion (13.2% ofpremiums) from patient care. Canadian private insurers-and those in Europe4-are similarly inefficient, but they play a miniscule role in those nations' health systems. Meanwhile, the public Medicare programs in both nations (Canada's single-payer system is also known as Medicare) subsist on 2% overhead.

The United States wastes even more-$401 billion in 20175- on providers' billing-related bureaucracy. Hospitals spend billions attributing costs and charges to individual patients, visits, and procedures and fighting with insurers to extract payment. Reliance on operating profits (labeled "surpluses" at nonprofit institutions) to fund the equipment purchases and renovations essential to survival drives CEOs to fritter away additional billions on upcoding, tailoring services to profitability, marketing to recruit profitable patients and demarketing to avoid unprofitable ones, and the other entrepreneurial exertions needed to generate profits and surpluses.

A single-payer system could pay each hospital a lump sum to cover its operations with new buildings and major equipment financed through targeted grants rather than operating profits and surpluses-just as we fund public schools, fire departments, and health departments. In Canada and Scotland, this lump sum noncommercial payment strategy has kept hospital administrative costs at 12% of revenues, versus 25% in the United States.

A single-payer reform would also spare doctors (and other practitioners) the expense and aggravation of negotiating contracts with payers and navigating varying billing and prior-approval requirements, referral networks, and formularies.

The $600 billion in savings attainable through single-payer reform could be repurposed to make universal, first-dollar coverage affordable. Most singlepayer cost estimates foresee modest initial cost reductions, with mounting savings thereafter (https://bit.ly/2O6d46X).

Multipayer alternatives to single-payer reform would cost much more or cover much less because the persistence of multiple payers (and commercial incentives) precludes achieving large administrative savings. For instance, Maryland's (mislabeled) global hospital-budgeting system hasn't trimmed hospitals' administrative costs because they must still attribute charges to individual patients and payers.

Public option reform would face additional obstacles. Proponents suggest that a Medicarelike public insurance option with low overhead and a benevolent attitude toward enrollees could outcompete its commercial rivals, or at least force them to behave better. But experience with the Medicare Advantage program and the Consumer-Oriented and Operated Plans (Co-Ops) included in the ACA as a quasipublic option belies that hope.

The 24 Co-Ops that received start-up funding have dwindled to 4, covering only 150 000 enrollees. Co-Ops, such as those in Iowa and New York, failed because they were too benevolent. Iowa's, which set copayments for HIV drugs far lower than its rivals, enrolled almost every HIV patient covered through Iowa's ACA exchange. New York's Co-Op became a magnet for expensively ill cancer patients because it was the only exchange plan that covered care at Memorial Sloan Kettering Cancer Center. Although the ACA promised to compensate Co-Ops for such "adverse selection," Congress balked at the price tag.

The Medicare Advantage experience is even more relevant to a public option. The Centers for Medicare &Medicaid Services (CMS) offers seniors the option of enrolling in traditional Medicare (the public option) or in a private managed care plan, with CMS picking up most of the premium. Despite having higher total costs than traditional

Medicare-a difference driven by their sevenfold higher overhead6-private plans' enrollment has skyrocketed. What's the secret to their success? Selectively enrolling profitable low-cost patients ("cherry picking"), driving unprofitable ones away ("lemon dropping"), and using a fraction of the gains from this cheating to lure enrollees with attractive extra perks. When CMS tried to level the playing field by risk-adjusting premiums using enrollees' diagnoses, plans set to work on upcoding. Many seniors can be labeled with a premium-inflating diagnosis such as arthritis, and echocardiograms can frequently ferret out clinically unimportant heart failure that's inexpensive to care for but spectacularly inflates risk scores, and hence premiums. Medicare Advantage plans have also prospered by cheating on quality measures and pushing out enrollees newly needing nursing home care or renal dialysis (despite CMS' ban on forcing patients out). And Advantage plans (but not traditional Medicare) can simply pull out of counties where they've accumulated unprofitable patients.

In health insurance competition, misbehavior trumps efficiency: good guys finish last. Private competitors reap profits by turning the public option into a de facto high-risk pool. And microtargeted marketing using individual-level data about Web purchases and searches looks set to supercharge cherry picking; Google has already invested in a health insurance start-up.

What about the relatively successful non-single-payer programs in nations such as Germany? Single payer skeptics often suggest that a German-style reform would escape the wrath of the powerful insurance and drug firms who would torpedo a single-payer system. Yet although Germany has multiple insurers, only nonprofit agencies (most jointly controlled by employers and unions) are permitted to offer the mandated coverage. All charge the same premiums; pay the same, governmentmandated rates; and include all doctors and hospitals in their networks. Also government transfers funds from profitable to unprofitable insurers (creating a single risk pool) and directly funds most hospital investments. In effect, Germany's statutory insurers play a role akin to the fiscal intermediaries that cut the checks for traditional Medicare, a transformation that Aetna seems unlikely to accept without a fight.

Pundits who warn against a single-payer system often concede its policy advantages but counter that it's politically impossible. Yet experts' confident political pronouncements frequently prove wrong: few foresaw the Soviet Union's fall or Hillary Clinton's presidential election defeat.

Health professionals should recommend the health care financing reform that evidence says would work best and reject bad policy advice masquerading as sage political guidance. >4jPI-l

David U. Himmelstein, MD
Steffie Woolhandler, MD, MPH

CONTRIBUTORS

The authors contributed equally to all aspects of this work.

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REFERENCES

1. Gaffney A, Woolhandler S, Angell M, Himmelstein DU. Moving forward from the Affordable Care Act to a single-payer system. AmJ Public Health. 2016;106(6): 987-988.
2. Canadian Institute for Health Information. Trends in income-related health inequalities in Canada. 2016. Available at: https://secure.cihi.ca/free_products/ trends_in_income_related_inequalities_ in_canada_2015_en.pdf Accessed December 12, 2019.
3. Stephenson AL, Sykes J, Stanojevic S, et al. Survival comparison of patients with cystic fibrosis in Canada and the United States: a population-based cohort study. Ann Intern Med. 2017;166(8):537-546.
4. Hagenaars LL, Klazinga NS, Mueller M, Morgan DJ, Jeurissen PP. How and why do countries differ in their governance and financing-related administrative expenditure in health care? An analysis ofOECD countries by

health care system typology. IntJ Health Plann Manage. 2018;33(1):e263-e278.
5. Himmelstein DU, Campbell T, Woolhandler S. Health care administrative costs in the United States and Canada, 2017. Ann Intern Med. 2020; E-pub ahead of print.
6. Curto V, Einav L, Finkelstein A, Levin J, Bhattacharya J. Health care spending and utilization in public and private Medicare. AmEconJApplEcon. 2019;11(2):302-332.
David Sundwall Comments
Himmelstein and Woolhandler are respected long-time advocates of health reform and with their piece in AJPH, "Single Payer Reform: Heed the Evidence, Not the Soothsayers" (p. 447), continue to add their voices to a growing chorus ofinfluential individuals and organizations calling for a single payer for health insurance financing in the United States. Their editorial is bolstered by compelling reasons for why such a change in financing of health care in our country is needed, among them unconscionable profits made from health care, egregious costs of administrative overhead, ever increasing overall costs (to government and individuals because of higher copayments and deductibles), and provider harassment related to seeking prior authorizations for services already provided. Perhaps the most compelling reason is that our health status by most measures lags behind every other industrialized country. So, what's not to like about a proposal that promises to be more fair to and affordable for Americans?
I support their objective of improved financing for health care, but in addition to just calling for financing reform we should be rallying providers and the public to seek universal access to basic care for all. Health insurance coverage is an essential part of this but hardly all that is needed. Himmelstein and Woolhandler outline well some of our current disparities in care, but it is also important to acknowledge the remarkable efforts of federal and state governments to provide access to care through public health clinics and services. The scope of these efforts is considerable and without question mitigates costs and improves health status for millions of poor and disadvantaged people. The Health Resources and Services Administration (HRSA) served more than 28 million people in 2019; 1 in 12 people nationwide relied on a HRSA-funded health center for affordable and accessible primary health care (bit.ly/ 39WJEkL). Even if we had a single payer, many of those served through these efforts would still likely need to receive care in such clinics-financing reforms alone won't make us a healthier nation.
Furthermore, to be successful in seeking needed change, we also must acknowledge the political climate: the rancorous rhetoric on the left and right and the failure of Congress to come together on big issues (e.g., immigration reform, international trade, and the power struggles between the executive and legislative bodies related to military interventions). How can we expect them to agree on reforms that will affect as much as one fifth of our economy? Although we rail against insurance companies, the pharmaceutical industry, hospital administrators, and costly specialty services, together they employee millions of people who also contribute to our national economy and have a strong voice in the public square. We can likely agree that the monies spent related to our commercialized health care system could be much better allocated and result in better health outcomes, but to get there we need to take an incremental approach (e.g., provide the public with the option to choose Medicare in lieu of private insurance).
Himmelstein and Woolhandler ask us not to be misled by soothsayers who warn that a single-payer system is politically impossible, but at this point in time this is in fact the case. They call on us to look at the evidence supporting adoption of a singlepayer system, but their evidence is projections of potential economic benefits and improved health outcomes; it is not political evidence. The call for "Medicare for all" has been criticized by politicians in both major political parties (including presidential candidates in the Democratic party), and the Committee for a Responsible Federal Budget has reported that cost estimates for similar legislation puts the federal government costs at roughly $28 to $32 trillion over a decade (http://bit.ly/2Hf2NBB). Given our current national debt of $21 trillion, policymakers have neither the funds nor likely the political will to greatly expand deficit spending. Like it or not, we live in a political world and must seek consensus on incremental policies on how to best achieve universal access to affordable health care in our nation. As Otto von Bismarck reportedly said, "Politics is the art of the possible, the attainable-the art of the next best," not necessarily the art of the ideal policy option. Á¡PU
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CONFLICTS OF INTEREST

The author has no conflicts of interest to declare.

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Moving From the National Negro Health Week to the National Public Health Week in the United States

Braff, Paul, MS

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ABSTRACT (ENGLISH)

There has been relatively little published on National Negro Health Week, and what has been published has often focused on physicians, nurses, or women. This article offers a brief but comprehensive overview of the organization and health emphases of nonmedical African American leaders on issues of health and explains how health concepts made their way to ordinary African Americans. In addition, in this article, I argue that the current National Public Health Week campaign might be best seen as a metamorphosis of National Negro Health Week because they share many similarities in practice and direction. The article's main message is that the United States has a long history of a "National Health Week"; that these Weeks support the interests of subjugated groups by race, ethnicity, or class; and that these Weeks have worked to empower these groups by providing them with basic health knowledge to improve their health without needing to consult a physician. (Am J Public Health. 2020;110:470-477. doi: 10.2105/AJPH.2019.305546)

April 2020 marks the 25th anniversary of National Public Health Week (NPHW), the American Public Health Association's campaign to improve the nation's health. Efforts to advance public health by dedicating a particular period of time to intensified local activities have a long history dating back to National Negro Health Week (NNHW), which began in 1915. Observance of NPHW thus provides an opportune time to examine the origins and evolution of "National Health Weeks."

FULL TEXT

Headnote

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April 2020 marks the 25th anniversary of National Public Health Week (NPHW), the American Public Health Association's campaign to improve the nation's health. Efforts to advance public health by dedicating a particular period of time to intensified local activities have a long history dating back to National Negro Health Week (NNHW), which began in 1915. Observance of NPHW thus provides an opportune time to examine the origins and evolution of "National Health Weeks."

NNHW ORIGINS: BEFORE 1915

In the early 20th century, like today, African Americans had poorer health than their White counterparts. However, the health discrepancy was more pronounced. The laws of the Jim Crow South combined with less formal hiring and residential restrictions in the North to confine the majority of African Americans to the lowest paid jobs and the worst, most crowded accommodations.1 Such conditions contributed to African Americans suffering from, and dying at, a higher rate than Whites for almost all diseases.2 The crude death rate in the United States in 1900 was 17.2 deaths per 1000 people, but the African American rate was 25. In addition, the average life expectancy in the early 1900s was 49.2 years, but that of African Americans was only 35 years.3 In the South, where the vast majority of African Americans lived, researchers found that 450 000 African Americans were seriously ill at any given time and that 45% of those illnesses, such as tuberculosis and pneumonia, were preventable with basic health education.4

Problematically, many White physicians thought like the anonymous doctor who said, "You might as well try to teach sanitation to mules as to try to teach it to the negroes [sic]."5 Some believed that African Americans simply did not have the capacity to understand disease, infection, and treatment.6 Such conclusions led doctors to debate the utility of providing African Americans with even basic health education, such as lectures on disease and sex.7 And because of racial exclusions at many medical schools, there were few African American physicians to contradict these conclusions. The African American-doctorto-African American-patient ratio in the early 20th century was 1:3000, as opposed to 1:700 for White doctors and patients, and whereas African American physicians primarily practiced in cities, most African Americans lived in rural areas.8

For Booker T. Washington, the principal of Tuskegee Institute and one of the most wellknown and respected African Americans of his time, African American poor health, and White perceptions of that health, required a solution. Washington's philosophy for African American racial uplift rested on economic self-determination and on an accommodationist philosophy that emphasized industrial labor and honing a skill.9 Sick African Americans could not improve their economic status or prove their worth. Although African Americans did organize campaigns for health improvement, their often limited financial means and their focus on local concerns made them insufficient to change the race's outlook nationally.10

THE FIRST NNHW: 1915

With the power ofWashington's name and the "Tuskegee Machine's" connections to African American newspapers and social, professional, and religious organizations, NNHW began in 1915. The program targeted issues that poor African Americans, particularly those in the South, could solve in their limited spare time, making the "National" part

of NNHW a bit of a misnomer at this early stage.11 The first NNHW had six goals:

1. removing and burning trash;
2. dusting furniture;
3. cleaning and painting walls, ceilings, and floors;
4. cleaning yards;
5. repairing stables and barns; and
6. keeping wells and outhouses in clean and working order.12

The Week's aims reflected Washington's interest in improving African American health and ensured that Whites could recognize African Americans' efforts at health improvement. Three of the six goals had to do with outward appearance- what passers-by could see. For Washington, health was a social construct tied to race, and the more obvious the improvements, the more likely Whites were to perceive African Americans as adopting White health standards and to think better of the race. Washington hoped that, over time and through the campaign, White perceptions of African Americans would improve and lead Whites to extend more rights and better treatment to African Americans.13 In addition, because germs did not respect the color line, Washington thought Whites would support African American health improvement out of their own self-interest, which could cause a chain reaction of caring about African American welfare in other aspects and greater cooperation between the races.14 Combined with the health information NNHW provided to African Americans, this campaign had the potential to give African Americans access to the tools and resources to take ownership of, and vastly improve, their health and economic potential.

To achieve this goal, Washington, in contrast with medical professionals, used the term "healthy" to mean "clean outward appearance." A "healthy" person was one who had no visible dirt on his or her skin. Similarly, a "healthy" home was one without peeling paint or trash in the yard. While a clean body and home would help stave off disease, the omission of advice regarding specific medical practices or treatment allowed participants to decide for themselves if they were healthy. In short, one did not need to consult a doctor, take physicianprescribed medicine, or get vaccinated to improve one's health. While these were all good steps to take to achieve good health, the lack of access most African Americans had to medical professionals, because of location and racism, made the Week's emphasis on personal action to support health a necessity. The Week's emphasis also aligned with the greater "black discourse about domestic spaces [which] maintained that the weal or woe of African Americans was bound up in the purification of home environments."15

While NNHW ideas were not novel, the scale was. The first NNHW had extensive support. The Indianapolis Freeman reported that "Never before has there been such a widespread co-operation of the races in a movement for the general good."16 In addition to the participation of African Americans from all backgrounds, classes, religious denominations, and areas, rural and urban, the newspaper noted that "The health department of every Southern State, [and] of many of the cities in the South . . ." supported the Week, along with the state departments of education in Arkansas, Tennessee, and North Carolina.17 The popularity of the Week meant that, even after Washington died in November 1915, support for the campaign remained strong, encouraging Tuskegee's new leader, Robert Moton, to continue NNHW and seek out new partners, including the US Public Health Service (USPHS).

NNHW AND THE USPHS: EARLY PARTNERSHIP, 1921-1931

From Moton's perspective, the USPHS could help the campaign in several ways. First, any support at all from the USPHS, an agency of the federal government, would legitimize the Week in the eyes of both Whites and African Americans. Second, the USPHS's connections to state, county, and city health departments would provide wider support for the Week. Third, the USPHS provided another significant media outlet to promote the Week.

For US Surgeon General Hugh Cumming, the Week represented an opportunity to establish the Service's credentials. In the early 1900s,

Private physicians and their powerful professional organizations frequently thwarted the PHS's efforts . . . at the delivery of care [which] were often denounced as the beginnings of "state" medicine.18

NNHW provided Cumming with a way to legitimize USPHS health authority with a group of people medical leaders often overlooked. Indeed, the Week's mission and goals aligned with those of the USPHS's where "'Cleaning up' was always central to the service's expanded role; the provision of privies and clean water was often at the core of its public health work."19 For these reasons, the USPHS agreed to publish the Week's annual health bulletin and otherwise publicize the Week.20 USPHS endorsement quickly led a variety of new groups to support the Week, such as the National Tuberculosis Association, Federal Children's Bureau, and American Red Cross.21 However, all these new developments and increased publicity came with a caveat: USPHS participation in the campaign's direction and scope. Given the opportunity to deliberate on African American health, the Service began to question its emphasis on personal health and health displays, instead promoting orthodox medical professionals as the ultimate arbiters of health.

The effect of enhanced medical professional leadership in the Week was best seen in the Week's bulletin. Over the course of the 1920s, the bulletin included more detail on the types of illnesses African Americans should worry about, concentrating on venereal diseases and tuberculosis, and placed an ever greater emphasis on the need for African Americans to get vaccinated and see a physician, especially if they suffered from these diseases.22 The Week's turn toward disease education made those with detailed medical knowledge a necessity. While nonmedical professionals could still lead on health issues, they were now nudged to work closely with physicians. The increased focus on the knowledge of medical professionals also mitigated some of the emphasis on health displays, signaling that cleaning and whitewashing were not enough to improve poor African American health. In short, under the USPHS, the bulletin began to assert that what one did internally had as great an impact on health, and perceptions of health, as what one did externally.

During the 1920s, the formal structure of the Week became solidified. Each year had a theme, and each day had a particular focus. The Sunday the Week began was Mobilization Day, a day dedicated to publicizing the need for NNHW and the Week's activities. Because about one in three African Americans was a member of a religious institution, the primary way to motivate participation was to coordinate with ministers who often dedicated sermons to kicking off NNHW23 As NNHW Committee member F Rivers Barnwell explained, "We have found that the race on a whole listens to the minister."24 In addition to the sermon, many communities held a mass meeting that included music and entertainment to, as Algernon Jackson, MD, another NNHW Committee member put it, "make health the fashionable thing."25

After mobilization, NNHW days focused on discussing and improving health in the home, at school, in children, in adults, and in the community; coordinating a general cleanup; and conducting a special campaign against a community health menace.26 For the Special Campaign Day, which first began in 1927, some communities focused on precise medical objectives, such as vaccination drives against smallpox, while others worked on less measurable concerns, such as raising awareness about what constituted proper living conditions.27 Regardless of the day, NNHW observances included health talks featuring medical and nonmedical professionals, demonstrations of proper health, such as appropriate meat preparation or human waste removal, films and radio addresses on diseases, and health plays, pageants, and parades.

The final day of the Week was for recording participation and activity data. These statistics told the story of an ever-expanding campaign, both by participation and geography. In 1930, 31 states, including practically every state between Connecticut and Texas, had at least one community participate in NNHW as the USPHS's publicity campaign for NNHW combined with the Great Migration that saw African Americans move out of the South and across the country in search of greater economic opportunities, taking their interest in NNHW with them. By the end of the 1920s, one fifth of all African Americans lived in Northern and Western states and one third in cities and towns, pushing NNHW beyond, "the rural people, the farming element."28 Indeed, the Baltimore Afro-American reported that the 1930 NNHW reached one million people-10% of all African Americans.29 Yet even with all the publicity and participation, financial constraints from the Great Depression forced the Week's headquarters to relocate from Tuskegee Institute to Howard University and eventually led the Week's leaders to turn to the USPHS to run the campaign.

NNHW AND THE USPHS: LATER PARTNERSHIP, 1932-1940

The establishment of the Office of Negro Health Work within the USPHS in 1932 to coordinate NNHW represented a significant achievement for African Americans. As Jesse O. Thomas of Atlanta's National Urban League explained,

That the federal government has adopted the Negro Health Week as its own project is an unmistakable testimony that the government has recognized the beneficial results that have come from the activities of this organization . . . and it is disposed to assume a larger share of its responsibility in connection with the health of this frequently, 'forgotten 10 per cent' of our population.30

The takeover legitimized the place of African American health as a national priority and established a pathway for future government aid to support African American health improvement and outreach throughout the country. USPHS control of NNHW provided "a communication bridge for the federal public health movement into the black lay community at the local, personal, household level."31 At this level, the government could direct the health priorities and values of the African American community through the NNHW campaign African Americans trusted and associated with their race's leadership.

With the USPHS in charge, NNHW Chairman Roscoe Brown, an African American dentist, characterized the Week's two objectives as

(1) To provide practical suggestions for the local Health Week Committees that conduct the observance, and (2) to stimulate the people as a whole to cooperative endeavor in clean-up, educational, and specific hygienic and clinical services for general sanitary improvement of the community and for health betterment of the individual, family, and home.32

Brown's aims for the Week were similar to those Washington outlined in his original program in that they mostly focused on health education and community cleaning. To encourage greater participation, Brown introduced a national radio address, a national health sermon, community certificates and awards for participation, and a poster contest. Brown designed the certificates, awards, and contests to stimulate interest in health beyond the Week in an attempt to create a year-long movement.33 However, as Brown explained, as the Week grew, it "naturally and logically assumed other phases of health conservation, such as clinics for treatment, inoculation, and period health examination."34

These new NNHW elements supported the power of the burgeoning medical professional community. For instance, the Week introduced a "Better Babies Certificate of Examination" in 1932. During NNHW, parents regularly took their children to clinics and physicians. The certificate required the medical professional to check the child for proper physical and mental development and assign the patient a score.35

These certificates supported Washington's idea of proving African American health, but the involvement of medical experts opposed Washington's vision of giving the African American lay public the tools to improve their health on their own. Indeed, the rating system implied that medical experts were the lone judges of health improvement as only they could assign scores.

THE DEMISE OF NNHW: 1940-1951

Regardless of the potential for White oversight, the Week's continued growth, counting as many as four million participants in 1941, created a situation in which a popular and ostensibly useful health campaign singled out a particular segment of the population.36 The Week coincided with a significant increase in African American health: between the 1920s and 1949, African American life expectancy increased at a greater rate than that ofWhites. For males, the increase was about 10 years, giving them a life expectancy of 57.5 years compared with an improvement of six years for Whites, who averaged 65 years of life. For females, African Americans increased their life expectancy by almost 16 years to just under 63 years of age, while White women improved by a little less than 10 years to expect to live to 72 years.37 Although developments in waste removal, sanitation, medicine, and municipal services promoted these health improvements, Moton claimed that NNHW "may be regarded as an institution definitely contributing to better health habits and the prevention of disease."38 From this perspective, Robert Olesen, a White assistant surgeon general, declared, "it is the hope that the benefits of National Negro Health Week may be made available to the white population as well."39

However popular the campaign, during the 1940s, a growing number of African American physicians and professionals grew increasingly concerned that NNHW implied that African Americans faced different health concerns than their White counterparts, meaning that NNHW was helping to segregate, not integrate, health. As the Pittsburgh American put it, "a Jim Crow Health Week is an admission of physical inferiority and mental weakness on our [African Americans'] part."40 The emphasis on health patriotism that occurred during World War II, which promoted proper health as the duty of every American regardless of race, sparked the National Association for the Advancement of Colored People (NAACP) and the National Medical Association to campaign for desegregation in health practices, turning a critical eye toward the Week.41 According to the Philadelphia Tribune, at the close of the city's 1944 NNHW campaign, "public opinion opposed the designation of health as a racial difference."42 Philadelphians, while interested in health programs, did not support the "Negro" part of the Week. The following year, the Chicago Defender celebrated that "many communities and areas sponsor 'Health Weeks' now with no reference to race."43

Perhaps it was the conglomeration of these movements- that is, African American advocacy for integration in health; the beginning of the trend toward removing racial barriers, with President Truman gradually integrating the Army and being the first president to speak before the NAACP; and the Supreme Court's abolition of"racial covenants" in housing in 1948- that led the USPHS to terminate NNHW in 1950. The Journal of the National Medical Association attributed the decision to it being "time that Negro health ceased to be considered as a special and separate kind of health, apart from that of the general population."44 Indeed, the Journal portrayed this decision as part of a pattern of increased integration efforts throughout the medical profession. The National Association of Colored Graduate Nurses (NACGN) voted to dissolve after the American Nursing Association decided to integrate, and a variety of state and local medical associations eliminated their racial qualifications for membership.45

Within the confines of health, the end of the Week also had important overtones. As the historian David McBride explains,

Ironically, this [the termination of NNHW and the NACGN] meant that those black institutions traditionally most effective in stimulating community health projects throughout the nation's black population were merged into larger, predominately white-controlled organizations.46

The African American voice in medicine, such as it was, shrunk significantly in 1950- 1951. The USPHS disbanded the Office of Negro Health Work. In its place, it created the Special Programs Branch to publish articles on African American health in USPHS journals and coordinate health efforts for African Americans with those of Whites, joining African American health issues with the health of the entire nation.47 Without the NNHW and NACGN, it was now up to the few African American, and many White, medical professionals to improve racial equality in their area of expertise. That inequality in health, by race or income, remained was part of the basis for the establishment of Public Health Week, which, after beginning in the Los Angeles County Department of Health Services in 1988, became a national campaign when President William J. Clinton officially designated it in 1995: National Public Health Week.48

NNHW AND NPHW: A COMPARISON

Ostensibly, the 2 Health Weeks have little in common (see the box on page 475). While NNHW's goal was to improve African American health, NPHW's is "to recognize the contributions of public health and highlight issues that are important to improving our nation."49 Instead of focusing on one particular racial group, the American Public Health Association designed NPHW to address the health problems of all types of people: low-income Whites, Native Americans, Hispanics, Asian Americans, and even seniors. Given these divergent target populations and the combination of advances in public health, technology, and race relations, it seems self-evident that NPHW would conduct a completely different campaign from NNHW.

Yet, in the context of scientific advances that have demonstrated the similarities in health issues across race, NPHW might be better seen as a metamorphosis of NNHW. One area of similarity is the idea that diseases cross boundaries. For NNHW, those borders were race. As Washington put it, "germs know no color line," and throughout NNHW's campaigns, leaders made efforts to connect African American health with White health.50 For NPHW, boundaries are about space, not race. As Robert James Kim-Farley, associate editor of AJPH, put it, "Borders and

geographic distances are increasingly irrelevant to the agents of disease in our 'global village.'"51 Diseases do not recognize territorial divisions and country borders, just as they do not see skin color. In this way, both Weeks promote the idea that ordinary people must work together to share information on health and improve the health of all, not just some.

This discussion illustrates another important theme between the two weeks: empowering ordinary people. According to NNHW Committee Member Monroe Work, the Week's annual health bulletin "was intended for the layman - to give information and inspiration - so that any one [sic] who got hold of it could use it."52 Early NNHW materials provided how-to guides that taught readers about proper sanitation and hygiene. Later NNHW bulletins included photographs of NNHW activities to illustrate what participation looked like. For NPHW, the discussion on individual actions has evolved and ranges from "eating healthy, avoiding tobacco, receiving vaccinations, and using seatbelts," to the basics of how to avoid accidents and injury.53 Both Weeks focus on using simple examples, instructions, and information to empower those in the unhealthiest situations to uplift themselves and improve their health. Both advocate physicians as a good source for health maintenance but perceive medical professionals as one of a number of resources in promoting good health. Thus, both emphasize the individual as having primary control over well-being.

One other notable connection between the two Weeks is the way in which each expands its discussion of health to greater issues of inequality. Some NNHW meetings concentrated on Jim Crow practices and the "criminally negligent," inequities African Americans faced not only in health, but also in economics, education, and municipal services.54 Others focused on access to the franchise, tying health to politics.55 Similarly, NPHW connects health problems, particularly those in working class and poor neighborhoods, to greater issues of inequality. As New Mexico Senator Tom Udall put it in promoting NPHW, "We know that food contributes to a longer life. But it is difficult to choose a healthy diet if you live in a community without access to a store that sells affordable, fresh produce."56 NPHW highlights the roles that poverty, housing, education, the environment, and even transportation have in affecting health and implementing best practices.57 In this way, the connections that NPHW makes between health and other facets of life are similar to the appeals African Americans made decades earlier during NNHW, but with a wider scope that engages a much greater variety of people of diverse backgrounds.

The major problem that challenges NPHW is the same one that Washington faced when he started NNHW 105 years ago. As Udall stated,

We often think of good health as something that happens in a doctor's office. The unfortunate reality, however, is that even the best medical care in the world will not solve some of our nation's most pressing health problems.58

For Washington, those problems were the treatment and perceptions of African Americans and their health. Today, although we have come far, these problems remain and are not limited by race. NPHW provides us with an opportunity to reflect on how much we have done to improve our health; how our health affects a wide range of issues, opportunities, and people; and how we can hone our efforts to improve the health and, therefore, the treatment and well-being of those around us.

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CONFLICTS OF INTEREST

The author reports no conflicts of interest.

Footnote

ENDNOTES

1. St Clair Drake and Horace R. Cayton, Black Metropolis: A Study of Negro Life in a Northern City (New York, NY: Harcourt, Brace and Company, 1945), 62; Robert Gregg, Sparks From the Anvil of Oppression: Philadelphia's African Methodists and Southern Migrants, 1890-1940 (Philadelphia, PA: Temple University Press, 1993), 28-29; Otis Dudley Duncan and Beverly Duncan, The Negro Population of Chicago: A Study of Residential Succession (Chicago, IL: The University of Chicago Press, 1957), 19.
2. David McBride, From TB to AIDS: Epidemics Among Urban Blacks Since 1900 (Albany, NY: State University of New York Press, 1991), 11; Edward H. Beardsley, A History of Neglect: Health Care for Blacks and Mill Workers in the Twentieth-Century South (Knoxville, TN: University of Tennessee Press, 1987), 13; Linda O. McMurry, Recorder of the Black Experience: A Biography of Monroe Nathan Work (Baton Rouge, LA: Louisiana State University Press, 1984), 111; Monroe N. Work, Negro Year Book and Annual Encyclopedia of the Negro, 1913 (Nashville, TN: Sunday School Union Print, 1912), 152-155; Monroe N. Work, Negro Year Book and Annual Encyclopedia of the Negro, 1913 (Tuskegee, AL: Negro Year Book Co, 1913), 245-247; L.C. Allen, "The Negro Health Problem," American Journal of Public Health 5 (1915): 194-203, 197. There were a few exceptions to the general understanding that African Americans were more susceptible to disease than Whites. See for example Keith Wailoo, How Cancer Crossed the Color Line (New York, NY: Oxford University Press, 2011).
3. US Bureau of the Census, Historical Statistics of the United States, Colonial Times to 1970 (Washington, D.C.: U.S. Department of Commerce, 1975), 69; Bonnie Bullough and George Rosen, Preventive Medicine in the United States, 1900-1990: Trends and Interpretations (Canton, MA: Science History Publications/USA, 1992), 3; John W Ward and Christian Warren, eds., Silent Victories: The History and Practice of Public Health in Twentieth-Century America (New York, NY: Oxford University Press, 2007), V; McBride, From TB to AIDS, 11; McMurry, Recorder of the Black Experience, 111.
4. Monroe N. Work, ed., Negro Year Book and Annual Encyclopedia of the Negro, 1914-1915 (Tuskegee, AL: The Negro Year Book Publishing Company, 1915), 331; Monroe N. Work, Negro Year Book and Annual Encyclopedia of the Negro, 1913 (Tuskegee, AL: The Negro Year Book Publishing Company, 1914), 325; McMurry, Recorder of the Black Experience, 114; "The Conservation of Negro Health," 5-7, 831-832, "National Negro Health Week," reel 713, Booker T. Washington Collection, Tuskegee University Archives, Tuskegee, AL.
5. Allen, "The Negro Health Problem," 201. Allen thought the only way to educate African Americans about health was to discuss the topic with them in very small groups or clubs, 202.
6. These conclusions received support from flawed research, which found, among other things, African American brains to be smaller than those ofWhites; see, for example, Robert Bennett Bean, "Some Racial Peculiarities of the Negro Brain," The American Journal of Anatomy 5 (September 1906): 353-432; William Benjamin Smith, The Color Line:A Brief in Behalf of the Unborn (New York, NY: McClure, Phillips &Co, 1905), 12, 46-47, 84-90.
7. H.H. Hazen, "Syphilis in the American Negro," Journal of the American Medical Association 63 (1914): 463-466, 465; Allen, "The Negro Health Problem," 202. While Hazen argued that African Americans were incapable of understanding sex lectures, Allen thought that the only way to improve African American health was to lecture African Americans in small groups. See also John Parascandola, Sex, Sin, and Science: A History of Syphilis in America (Westport, CT: Praeger, 2008), 159-168.
8. Reynolds Farley, Growth of the Black Population: A Study in Demographic Trends (Chicago, IL: Markham Publishing Co, 1970), 41; W Michael Byrd and Linda A. Clayton, An American Health Dilemma: A Medical History of African Americans and the Problem of Race, vol. 2 (New York, NY: Routledge, 2002), 398.
9. Booker T. Washington, Up From Slavery (Boston, MA: Doubleday, Page &Company, 1901); Louis Harlan, Booker T Washington: Volume 2: The Wizard of Tuskegee, 1901-1915 (New York, NY: Oxford University Press, 1983); Michele Mitchell, Righteous Propagation: African Americans and the Politics of Racial Destiny After Reconstruction (Chapel Hill, NC: The University of North Carolina Press, 2004), 135.
10. Monroe Work to Booker T. Washington, November 27, 1914, 431, "Aug-Dec 1914," "Records and Research, Work, Monroe Nathan," reel 533, Booker T. Washington Collection, Tuskegee University Archives, Tuskegee, AL; Jessica P. Guzman, "Monroe Nathan Work and His Contributions," Journal of Negro History XXXIV (October 1949):

428-461, 452; Susan L. Smith, Sick and Tired of Being Sick and Tired: Black Women's Health Activism in America, 1890-1950 (Philadelphia, PA: University of Pennsylvania, 1995), 36; Mitchell, Righteous Propagation, especially 96-169. The Negro Organization Society ofVirginia organized one of the largest campaigns and Washington copied many elements from their Health Week in creating National Negro Health Week.
11. "Negro Health Week Conference," 8, folder 2, box 1, National Negro Health Week Collection, Tuskegee, AL.
12. "National Negro Health Week Program," 928, "National Negro Health Week," reel 713, Booker T. Washington Collection, Tuskegee University Archives, Tuskegee, AL; Virginia Department of Health, Virginia Health Bulletin VI, no. 2(April 10, 1914), 69, 468, "Moton, Robert Roussa, 1914" reel 61, Booker T. Washington Collection, Tuskegee University Archives, Tuskegee, AL.
13. Peter A. Coclanis, "What Made Booker Wash(ington)?: The Wizard of Tuskegee in Economic Context," in Booker T. Washington and Black Progress: Up From Slavery 100 Years Later, ed. W. Fitzhugh Brundage (Gainesville, FL: University Press of Florida, 2003): 81-106, 81.
14. "The Conservation of Negro Health," 7, 832, "National Negro Health Week," reel 713, Booker T. Washington Collection, Tuskegee University Archives, Tuskegee, AL.
15. Mitchell, Righteous Propagation, 148.
16. "National Negro Health Week," The Freeman, June 12, 1915, "Tuskegee Health Collection, 1915," 249, Tuskegee, AL.
17. Ibid.
18. Susan M. Reverby, Examining Tuskegee: The Infamous Syphilis Study and Its Legacy (Chapel Hill, NC: The University of North Carolina Press, 2009), 19-20.
19. Reverby, Examining Tuskegee, 19.
20. Roscoe C. Brown, "The National Negro Health Week Movement," Journal of Negro Education 6 (1937): 553-564, 558; "In Memoriam: Dr. Monroe N. Work, Tuskegee Institute, Ala.," National Negro Health News 13, no. 2 (April-June 1945): 24.
21. "National Health Week to Be Fully Observed," New York Age (March 26, 1921), "Tuskegee Health Collection 1921," 298, Tuskegee, AL; "National Negro Health Week," Journal of the National Medical Association 14, no. 1 (Jan-Mar 1922): 55-57, 56. Having more than five million members, the American Red Cross's support was particularly noteworthy. Julia F. Irwin, Making the World Safe: The American Red Cross and a Nation's Humanitarian Awakening (New York, NY: Oxford University Press, 2013), 165.
22. National Negro Health Week, April 1 to 7, 1923, The Ninth Annual Observance (Washington, DC: Government Printing Office, 1923), 1-10, folder 660, box 89, Robert Moton General Correspondence, Tuskegee, AL; National Negro Health Week, March 30 to April 5, 1924, The Tenth Annual Observance (Washington, DC: Government Printing Office, 1925), 3-6, T 27.2: N31 924, box T702, "Publications of the Federal Government," Record Group 287, National Archives and Records Administration, College Park, MD; National Negro Health Week, April 5 to 11, 1925, The Eleventh Annual Observance (Washington, DC: Government Printing Office, 1925), 3-6, folder 1032, box 132, Robert Moton General Correspondence, Tuskegee, AL.
23. Sydney E. Ahlstrom, A Religious History of the American People (New Haven, CT: Yale University Press, 1972), 707-709. The author notes that 2.7 million African Americans belonged to a African American church out of 8.3 million.
24. "Conference of Agencies Cooperating in the Promotion of National Negro Health Week," January 20, 1927, 6, "Annual" folder, box 44, Robert Moton Local Correspondence, Tuskegee, AL.
25. "Negro Health Week Conference," November 1, 1926, 10, folder 2, box 1, National Negro Health Week, Tuskegee, AL; "National Negro Health Week: April 3 to 10, 1927," US Public Health Service, Washington, DC, 1927, 4, folder 1032, box 132, Robert Moton General Correspondence, Tuskegee, AL.
26. See, for example, Program of The Seventh Annual National Negro Health Week, April 3 to 9, 1921 (Washington, DC: Government Printing Office, 1921), 3, T 27.2: N31, box T702, "Publications of the Federal Government," Record Group 287, National Archives and Records Administration, College Park, MD; "National Negro Health Week: April 3

to 10, 1927," US Public Health Service, Washington, DC, 1927, inside cover, folder 1032, Box 132, Robert Moton General Correspondence, Tuskegee, AL.
27. "A Fitting Climax," Savannah Tribune (April 7, 1927), "Tuskegee Health Collection, 1927," 421, Tuskegee, AL; "Announce Date of Negro Health Week," Cincinnati Times Star (April 3, 1926), "Tuskegee Health Collection, 1926," 852, Tuskegee, AL; "Negro Health Week Set for April 1 to 6," St Louis Globe-Democrat (March 25, 1928), "Tuskegee Health Collection, 1928," 362, Tuskegee, AL; "Stewed Caterpillars Warned Against," Baltimore Afro-American (March 2, 1929), 17; "To the Leaders of the Colored Communities of LaSalle Parish," February 22, 1929, folder 2, box 2, National Negro Health Week, Tuskegee, AL; "Health Week to Be Observed Here," Nashville Globe (March 19, 1926), "Tuskegee Health Collection, 1926," 855, Tuskegee, AL; "Health Week Held by Negroes," Louisville Courier (April 4, 1927), "Tuskegee Health Collection, 1927," 431, Tuskegee, AL; "Negro Health Week," Macon Telegraph (March 1, 1927), "Tuskegee Health Collection, 1927," 421, Tuskegee, AL; "Health Week for Negroes Planned," Birmingham News (March 31, 1929), "Tuskegee Health Collection, 1929," 157; "Negro Health Week Dates Are Set for Observance Here," Springfield Register (March 16, 1930), "Tuskegee Health Collection 1930," 486, Tuskegee, AL; "Negro Health Week," Middletown Times-Herald (March 31, 1930), "Tuskegee Health Collection, 1930," 507, Tuskegee, AL; C.E.H. Daniel, "The Institute and Negro Health," St Mary's Beacon (April 4, 1930), "Tuskegee Health Collection, 1930," 497, Tuskegee, AL.
28. Edwin R. Embree, "Negro Illness and the Nations Health," Crisis 36, no. 3(March 1929): 84, 97; "Negro Health Week Observance," N/D, folder 2, box 1, National Negro Health Week, TA; "Negro Health Week Conference," November 1, 1926, 1, folder 2, box 1, National Negro Health Week, Tuskegee, AL. The quote is from "Negro Health Week Conference" and attributed to Cumming.
29. "Preliminary Conference on the National Negro Health Week of 1931," 2-3, folder 9, box 4, National Negro Health Week, Tuskegee, AL; "Health Week Change," Baltimore Afro-American (November 29, 1930), 6; "Negro Health Week Observance," N/D, folder 2, box 1, National Negro Health Week, Tuskegee, AL. While, as discussed, some Whites participated in National Negro Health Week, the vast majority of campaign organizers and attendees were African American.
30. Jesse O. Thomas, "N/T" Atlanta Constitution (March 12, 1934), "Tuskegee Health Collection, 1934," 663, Tuskegee, AL.
31. McBride, From TB to AIDS, 109.
32. Brown, "National Negro Health Week Movement," 555.
33. Thus, NNHW is sometimes referred to as NNHM or NNHWM. I will continue to refer to it as NNHW or "the Week" because the goals of the Week and Movement were similar with time-frame being the biggest difference.
34. Brown, "National Negro Health Week Movement," 558.
35. "National Negro Health Week: 18th Annual Observance, Sunday, April 3, to Sunday, April 10, 1932," US Public Health Service, Washington, DC, 1932, 11, folder 3, box 6, National Negro Health Week, Tuskegee, AL.
36. Walter White to Harry S. Truman, October 21, 1947, 4, folder 095 "National Association for the Advancement of Colored People," box 25, Records of the Department of Health, Education and Welfare, RG 235, National Archives and Records Administration, College Park, MD; "Statistical Report: National Negro Health Week - 1941," National Negro Health News 9, no. 3 (July-September 1941): 2-3. Regarding the potential for White oversight, Brown was basically the only African American in the US Public Health Service during this period. In addition, this four million figure is quoted by a few sources, but the US Public Health Service counted all the people who attended each individual event, not the number of individuals attending each event. There is likely double, triple, quadruple, or even greater counting of people. However, it is also worth remembering that the National Negro Health Week Committee did not receive reports from every community that participated in National Negro Health Week, so the total figure here could be correct. This issue is true of all National Negro Health Week statistics.
37. "Study of Negro Health Status Reveals Progress, But Much More Improvement Needed," National Negro Health News 18, no. 1 (January-March 1950): 18-19; Bullough and Rosen, Preventive Medicine in the United States, 90.
38. "Health News,"Jackson News (July 25, 1925), "Tuskegee Health Collection 1925," 119, Tuskegee, AL.

39. Robert Olesen, "The Citizens Responsibility for Community Health," 1939, 6, folder 8, box 12, National Negro Health Week, Tuskegee, AL.
40. "National Negro Health Week," Pittsburgh American (April 3, 1925), "Tuskegee Health Collection 1925," 152, Tuskegee, AL.
41. McBride, From TB to AIDS, 125.
42. "Nation Has 1 Health Week; Phila. Observes 52 Weeks," Philadelphia Tribune (March 30, 1946): 20.
43. Alfred Smith, "Adventures in Race Relations," Chicago Defender (May 10, 1947): 15.
44. "The Honorable Oscar Ross Ewing," Journal of the National Medical Association 43, no. 6 (November 1951): 402-404, 403.
45. W. Montague Cobb, "The Future of Negro Medical Organizations," Journal of the National Medical Association 43, no. 5 (September 1951): 323-328.
46. McBride, From TB to AIDS, 145. See also David Barton Smith, The Power to Heal: Civil Rights, Medicare, and the Struggle to Transform America's Health Care System (Nashville, TN: Vanderbilt University Press, 2016), 21; Paul Starr, The Social Transformation of American Medicine (New York, NY: Basic Books Inc Publishers, 1982), 311-334.
47. "Special Notice" National Negro Health News, vol. 18, no. 2 (April-June 1950): 1.
48. Interview with Georges Benjamin, MD, American Public Health Association Executive Director, by Paul Braff, via Zoom oral interview, October 1, 2019, 4:00 p.m.-5:00 p.m.
49. "National Public Health Week," American Public Health Association, N/D, https://www.apha.org/events-and-meetings/national-public-health-week (accessed October 13, 2019).
50. Smith, Sick and Tired of Being Sick and Tired, 40, 75. For more on this idea, see Vanessa Northington Gamble, ed., Germs Have No Color Line: Blacks and American Medicine, 1900-1940 (New York, NY: Garland Publishing Inc, 1989).
51. Robert James Kim-Farley, "A Healthier America, A Healthier World," American Journal of Public Health 100, no. 4(April 2010): 585.
52. "Negro Health Week Conference," 8, folder 2, box 1, National Negro Health Week, Tuskegee, AL.
53. Mary E. Northridge, "We Are the 99 Percent," American Journal of Public Health 102, no. 4 (April 2012): 585; Georges C. Benjamin, "Safety Is No Accident: Live Injury-Free," American Journal of Public Health 101, no. 4 (April 2011): 586. See also Tom Udall, "National Public Health Week: Small Steps Toward Big Change," American Journal of Public Health 106, no. 5 (May 2016): 779-780; Sandro Galea and Roger D. Vaughan, "Public Health and Marginalized Populations: A Public Health of Consequence, October 2019," American Journal of Public Health 109, no. 10 (October 2019): 1327-1328.
54. "Live 100 Years Says Senator Copeland Here," Baltimore Afro-American (April 17, 1926): 1; "Va. Negligent About Health of the Negro," Norfolk Journal and Guide (April 11, 1936): 529, "Tuskegee Health Collection, 1936," Tuskegee, AL; J.B. Jordan, "News Among Negroes," Evergreen Courant (March 26, 1936): 485, "Tuskegee Health Collection, 1936," Tuskegee, AL; Eva Lee Garrison and J.B. Jordan, "News Among Negroes," Evergreen Courant (April 16, 1936): 486, "Tuskegee Health Collection, 1936," Tuskegee, AL.
55. "Health Week," Houston Informer (April 4, 1936): 524, "Tuskegee Health Collection, 1936," Tuskegee, AL.
56. Udall, "National Public Health Week," 779.
57. Caroline D. Bergeron, "Envisioning a Healthier Future," American Journal of Public Health 105, no. 4 (April 2015): 612. See also Galea and Vaughan, "Public Health and Marginalized Populations"; Naomi Zevde, Erica Eliason, Heidi Allen, Tal Gross, "The Effects of the ACA Medicaid Expansion on Nationwide Home Evictions and Eviction-Court Initiations: United States, 2000-2016," American Journal of Public Health 109, no. 10 (October 2019): 1379-1383.
58. Udall, "National Public Health Week," 780.

DETAILS

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Violence Against Women and Health Care Costs

Puac-Polanco, Victor; Kalia, Vrinda

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FULL TEXT

The direct consequences oF violence against women are well documented; however, the indirect consequences, such as health care utilization and out-of-pocket costs, in low- and middle-income countries are less known. Using data from the 2015 Tanzanian Demographic and Health Survey, Vyas studied the association between physical and sexual violence against women and health care utilization and out-of-pocket costs. Female victims of physical or sexual violence, by either a partner or nonpartner, were significantly more likely to utilize health services (adjusted odds ratio = 1.26; 95% confidence interval = 1.08, 1.47). Women who needed inpatient care also incurred higher outoF-pocket costs. The consequences of violence against women extend beyond personal costs.

Citation. Vyas S. Violence against women in Tanzania and the relationship with health-care utilisation and out-of-pocket payments. East Afr Health Res J. 2019;3(2):125-133.

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A Case for Experiential Expertise in Opioid Overdose Surveillance

Anonymous

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ABSTRACT (ENGLISH)

We are well into the third decade of a public health event marked by the greatest failure in the modern history of drug safety, sustained lethality of drug use, and epochal changes in the illicit drug market. Decades of work addressing different components of substance use have been at best greatly augmented, or at worst poorly supplanted, by complex policy regimes creating a new infrastructure for supply, demand, and harm reduction. To function well under this new structure, public health programming, including surveillance activities and other research, must explicitly define the domains with which it is concerned and its goals. The most efficient and ethical means to do this remains direct engagement and collaboration with affected communities, in particular people who use drugs. A new study by Nesoff et al. provides a description of the spatiotemporal clustering of overdose deaths involving fentanyl or its analogs in Cook County, Illinois.1 The authors employed elegant methods, offered easy-to-understand heat maps, and confirmed that fentanyl-involved overdose clusters nearly mirrored those observed in an

analysis of Chicago overdose hot spots performed in 2007.2 However, it must be noted that their study did not engage drug users in the Chicago area or long-standing programs serving this population, nor was it performed by local researchers.

FULL TEXT

We are well into the third decade of a public health event marked by the greatest failure in the modern history of drug safety, sustained lethality of drug use, and epochal changes in the illicit drug market. Decades of work addressing different components of substance use have been at best greatly augmented, or at worst poorly supplanted, by complex policy regimes creating a new infrastructure for supply, demand, and harm reduction. To function well under this new structure, public health programming, including surveillance activities and other research, must explicitly define the domains with which it is concerned and its goals. The most efficient and ethical means to do this remains direct engagement and collaboration with affected communities, in particular people who use drugs. A new study by Nesoff et al. provides a description of the spatiotemporal clustering of overdose deaths involving fentanyl or its analogs in Cook County, Illinois.1 The authors employed elegant methods, offered easy-to-understand heat maps, and confirmed that fentanyl-involved overdose clusters nearly mirrored those observed in an analysis of Chicago overdose hot spots performed in 2007.2 However, it must be noted that their study did not engage drug users in the Chicago area or long-standing programs serving this population, nor was it performed by local researchers. BIG DATA THROUGH A

LOCAL LENS A synthesis of the Nesoff et al. results serves as an important case study in the shortcomings of omitting people who use drugs and local expertise when interpreting findings, a common omission in "big data" opioid surveillance research. The authors' findings are not a revelation in comparison with the 2007 study. For example, the authors were unable to explain why the communities hardest hit by opioid overdoses in 2002 were nearly the same as those identified in 2014 to 2018 data, whereas a 2017 report by Chicago-area experts revealed underlying

disparities and their roots.3 Content and experiential expertise among researchers results in discussion sections more robustly oriented toward solutions in research and practice. In large epidemiological studies, the input ofpeople who use drugs may drive analyses considering complex and structural factors that influence disproportionate deaths. When a participatory approach is used, the findings can be discussed in the context ofthe effects of racialized drug policies, structural violence, and policing on people who

use drugs, particularly people of color. Equipped with local and experiential expertise, we offer an alternative discussion of the findings. The authors hypothesized that there is a bifurcated drug market wherein drug users in resource-deprived areas may not be able to access a fentanyl-free opioid supply. However, death data are not a suitable proxy for the overall landscape of illicit drug sale and use. In Chicago specifically, overdoses involving any illicit opioid should be considered more similar than different because fentanyl is inconsistently and unpredictably incorporated into the illicit opioid supply. Alternatively, in San Francisco, California, for example, tar heroin is rarely combined with fentanyl and fentanyl is sold separately in powder form, thus making informed consumption considerably more feasible. Thus, in Chicago during the study period as well as the fentanyl overdose spike in 2005, fentanyl-involved opioid overdoses were largely the result of individuals acquiring

substances in an inconsistent heroin market.4 We disagree with the notion of a bifurcated market in Chicago through 2018; we instead propose that monitoring fentanyl-involved overdoses is important because the acuity highlights and exacerbates existing vulnerabilities. In advance of pondering a redevelopment- or gentrification-focused variation of "broken windows policing" as an approach to discourage substance use, known risks for opioid overdose should be considered. Structural violence and policing of people who use drugs directly affect overdose deaths.5 Additional indirect effects ofstructural violence and policing on overdose risk include chilling effects on naloxone and syringe access program participation; frequent incarceration, creating high-risk postrelease periods oflow opioid tolerance; reluctance to call 911 during an overdose emergency; and slower emergency medical service response times in certain neighborhoods. These effects are seen most dramatically among people of color who use drugs and the

communities in which they reside. These http://www.ajph.org by clicking the "Reprints" link. This et al., supporting the hypothesis that fentanyl-involved fatalities highlight existing conditions.

In their discussion, Nesoff et al. suggested investigating targeted infrastructure improvements or other community development options such as park making, building renovation, or vacant lot remediation as overdose prevention strategies. However, people who use drugs and community organizations are currently highly invested in establishing or expanding programs that have an emerging evidence base, such as safer consumption and drug checking sites, and strategies for extending proven, evidence-based interventions (e.g., naloxone access and agonist-based pharmacotherapy for opioid use disorder) to untapped social networks and resource-deprived settings.6 For example, there are two residential hotels in Chicago where at least 20 fatal overdoses have occurred in the past five years. These hotels are located within some of the most vulnerable communities identified by Nesoff et al. Their approach and findings could be used to support the siting of safer consumption and drug checking sites near or within the two hotels.

In addition, a 2018 study focusing on a safety net emergency department in Chicago revealed that only 22% of people using opioids and 2% of noninjecting opioid users had access to naloxone.7 In that study, needle exchange programs were the primary naloxone source. Geographic methods can also assist in planning where needle exchanges are sited, determining where people who use drugs via noninjection routes are located, and learning how to engage with noninjection opioid users.

REVISITING THE CHICAGO SCHOOL

One framework that allows these diverse approaches to be well differentiated also has its roots in Chicago: the social ecological model. Under this framework, interventions acknowledge the interconnectedness of factors at all levels and include components that act at each of the levels. The proposals suggested by Nesoff et al. target the community and the different levels of public policy (Figure 1). Other harm reduction strategies that have been aggressively pursued by policymakers and community stakeholders have tended toward the middle and lower levels of the social ecological model. Although some higher-level interventions have been widely adopted (e.g., Good Samaritan laws), engagement with law enforcement- oriented programs present obvious barriers to people who use drugs.

Expanding prevention paradigms to include environmental interventions, as proposed by Nesoff et al., may provide benefits as part ofa grander approach to demand reduction than has typically been considered. Ongoing psychological research is establishing the role of opioids in human social connections, building on earlier animal models. This research suggests a significant long-term role for programs profoundly altering the built and social environment, in parallel with the immediate considerations of the harm reduction movement. Such an expansive demand reduction approach may transcend the typically perceived boundaries of public health and will undoubtedly require the engagement, efforts, and leadership of individual drug users and communities. /4JPI-I

Sidebar

communities were notably

featured by Nesoff ABOUT THE AUTHORS Apostolos A. Alexandridis is with the US Food and Drug Administration, Silver Spring, MD. Maya Doe-Simkins and Gregory Scott are with the Chicago Recovery Alliance, Chicago, IL. Gregory Scott is also with the

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CONTRIBUTORS

All of the authors were involved in the outlining, drafting, and editing of the editorial. M. Doe-Simkins and G. Scott developed specific examples of events in Chicago.

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Note. A. A. Alexandridis is currently a postdoctoral fellow at the US Food and Drug Administration (FDA). This editorial solely reflects the views of the authors and does not necessarily represent FDA's views or policies, nor is it related to work conducted at the FDA.

CONFLICTS OF INTEREST

The authors declare no conflicts ofinterest.

References

REFERENCES

1.NesoffED, Branas CC, Martins SS. The geographic distribution of fentanyl-involved overdose deaths in Cook County, Illinois. Am J Public Health. 2020;110(1): 98-105.

2. Scott G, Thomas SD, Pollack HA, Ray B. Observed patterns of illicit opiate overdose deaths in Chicago, 1999-2003. JUrban Health. 2007;84(2): 292-306.

3. Bechteler SS, Kane-Willis K. Whitewashed: The African American Opioid Epidemic. Chicago, IL: Chicago Urban League; 2017. 4. Denton JS, Donoghue ER, McReynolds J, Kalelkar MB. An epidemic of illicit fentanyl deaths in Cook County, Illinois: September 2005 through April 2007. J Forensic

Sci. 2008;53(2):452454. 5. Bohnert ASB, Nandi A, Tracy M, et al. Policing and risk of overdose mortality in urban neighborhoods. Drug Alcohol

Depend. 2011;113(1):62-68. 6. Carroll JJ, Green TC, Noonan RK. Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States: An Introduction for Public Heath, Law Enforcement, Local Organizations, and Others Striving to Serve Their Community. Atlanta, GA: Centers for Disease Control and Prevention; 2018. 7. NikolaidesJK, Rizvanolli L, Rozum M, Aks SE. Naloxone access among an urban population of opioid users. Am J Emerg

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Paid Sick Leave in Washington State: Evidence on Employee Outcomes, 2016–2018

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ABSTRACT (ENGLISH)

Objectives. To estimate if Washington State's paid sick leave law increased access to paid sick leave, reduced employees' working while sick, and relieved care burdens. Methods. I drew on new data from 12 772 service

workers collected before and after the law took effect in January 2018 in Washington State and over the same time period in comparison states that did not have paid sick leave requirements. I used difference-indifference models to estimate the effects of the law. Conclusions. Mandated paid sick leave increased access to paid sick leave benefits and led to reductions in employees' working while sick. However, covered workers did not experience reductions in work-life conflict in the period immediately following passage. (AmJ Public Health. 2020;110:499-504. doi:10.2105/AJPH.2019.305481)

FULL TEXT

Headnote

Objectives. To estimate if Washington State's paid sick leave law increased access to paid sick leave, reduced employees' working while sick, and relieved care burdens.

Methods. I drew on new data from 12 772 service workers collected before and after the law took effect in January 2018 in Washington State and over the same time period in comparison states that did not have paid sick leave requirements. I used difference-indifference models to estimate the effects of the law.

Results. The law expanded workers' access to paid sick leave by 28 percentage points (P<.001). The law reduced the share of workers who reported working while sick by 8 percentage points (P<.05). Finally, there was little evidence that the law served to reduce work-life conflict for Washington workers.

Conclusions. Mandated paid sick leave increased access to paid sick leave benefits and led to reductions in employees' working while sick. However, covered workers did not experience reductions in work-life conflict in the period immediately following passage. (AmJ Public Health. 2020;110:499-504. doi:10.2105/AJPH.2019.305481)

Compared with other developed countries, in the United States, access to paid time off from work is low and stratified by socioeconomic status.1 The dearth and the inequality ofcoverage arises from the lack ofa federal provision or mandate for paid vacation, parental leave, or sick days.2 Yet the provision ofthese benefits can have important positive effects on worker well-being and population health. In the domain ofpaid sick leave, employees who lack the benefit are more likely to forgo needed medical care,3 and parents without paid sick leave are less likely to stay home to care for themselves or a family member.4 More broadly, expansion of paid sick leave appears to have positive population-level effects on health.5

In recognition of this evidence, over the past decade a number of cities and states have attempted to address this lack of federal policy by passing mandates that require privatesector employers to provide paid sick leave, with 11 states and 30 cities having passed such laws.6 However, the requirement to provide benefits does not necessarily equate with actual provision or use. A large body of research demonstrates significant noncompliance by private-sector employers with other provisions of labor law, including the classification of workers,7 wage and hour violations,8,9 and occupational health and safety rules.10

Evaluations of paid sick time statutes do show that following passage, employers report increased provision of paid sick time. In San Francisco, California, the share of firms reporting provision ofpaid sick time rose from 73% to 91%,11 and in Seattle, Washington, the share rose from 80% to 91%.12 Other studies only survey employers following passage and report similarly high levels of self-reported compliance-87% in New York City13 and 93% in Jersey City, New Jersey,14 after implementation.

However, relying on employer reports of provision of benefits is not without limitations. Employers may overstate their provision of paid sick time if they are concerned that reporting noncompliance could lead to sanction.10 Furthermore, and perhaps more importantly, if workers do not know about the availability of paid leave they cannot use it, and employer-side surveys cannot capture this dynamic.10

Yet there is much less evidence on the employee side, and what evidence exists does not align with employer reports. In Seattle, although the employer data showed a 91% compliance rate, 12 of 19 workers who did not have paid sick coverage before the ordinance reported still not having it afterward during in-depth interviews.15 A small-scale poll of 100 workers in Jersey City did not directly assess changes in employees' reports of access to paid sick leave, but it did find that 50% had not heard of the law. Among workers, half had earned at least 1 paid sick day

since the law went into effect, a quarter reported not earning any, and another quarter were unsure of whether they had earned any paid sick days, in contrast to the 93% of employers who reported providing earned sick days.14 Although this research raises the concern that there may be a substantial disconnect between legal mandates, employers' reports, and employees' experiences, the data are quite limited by the small samples available in Seattle and Jersey City.

Furthermore, beyond access to paid sick time, there is limited research that gauges the effects of expansion of paid sick leave on worker behavior. Observational research finds evidence of strong associations between having paid sick leave and staying home while sick,3 as well as parents taking time off to care for themselves or others.4 However, having paid sick leave is not random and is strongly correlated with other occupational worker attributes,16 raising concerns about whether such associations are causal. The only existing research that gauged worker-level responses to expansions of paid leave in a quasi-experimental framework focused on labor market effects, and it found either no evidence of reductions in employment17 or modest reductions.18

The literature is largely silent on the question of whether expanding paid sick leave actually reduces rates of "presenteeism," or employees' reporting to work when sick.19 This question is particularly pressing in sectors that involve customer-facing interactions, perhaps especially food service,6 because of the risk ofcontagion from sick workers to the broader population.5

Paid sick leave can be used when employees themselves are ill, but also to care for family members. One might then expect that access to paid sick leave would make it easier to meet care obligations. The unequal distribution of informal care obligations by gender and by parental status20 would suggest that paid sick leave might reduce work-life conflict for women and for mothers.

METHODS

Washington State's paid sick leave law was enacted directly by voter initiative in November 2016. The law requires that nearly all employers, regardless of size and industry, provide paid leave and that it be provided to nearly all workers, regardless of full- or part-time status. Workers accrue leave at the rate of at least 1 hour for every 40 hours worked and may take leave to care for themselves or a family member when sick or to seek preventative care. The law went into effect January 1, 2018.21

I drew on a repeated cross-section of workers in the retail and food service industries. Although Washington's paid sick leave law covers nearly all employees in the state, workers in the targeted industries are of particular policy relevance because they are among the most unlikely to have had paid sick leave coverage prior to the law3 and may be among the most financially unable to take unpaid time off from work or to hire others to care for sick family members.22 For these reasons, the effects of the law are likely to be greatest for retail and food workers, a population of considerable policy interest. For these same reasons, however, the estimates in this study are unlikely to provide insight into the broader effect of the law across industries.

The Shift Project (of which I am coprincipal investigator) recruited workers to a custom survey using paid advertisements on Facebook that targeted workers on the basis of their employer. The data collection methodology and tests ofbias are described in detail in Schneider and Harknett.23 The Shift Project fielded recruitment advertisements in the fall of2016, the fall of2017, and the spring of 2018. The project fielded the advertisements nationally to workers at 87 ofthe largest retail or food service firms in the United States. It recruited respondents using incentives that ranged in value from an entry into a drawing for an iPad to a $15 gift card. At each wave, the survey oversampled Washington State workers. An important limitation ofthe data is that this convenience sampling approach probably yielded a sample that was not representative of the target population of retail and food service workers employed at large firms in Washington and comparison states.

I restricted the sample to 12 772 workers employed in Washington State (outside of Seattle and Tacoma) or in 1 of41 states (listed in Table A, available as a supplement to the online version of this article at http:// www.ajph.org) that had not passed a paid sick time law as of June 2018 and who worked at 1 of 24 large employers whose workers were surveyed at each wave and had complete data on all covariates. I also examined a subsample of female workers (reducing the sample to 9618 respondents) and of mothers (reducing the sample to 4796 respondents).

These sample restrictions are described in detail in Appendix A (available as a supplement to the online version of this article at http:// www.ajph.org).

Key Variables

Treatment. To define the key independent variable, I geocoded responses based on Internet Protocol (IP) addresses for Washington State (coded 1) versus all other states (without a paid sick leave law, coded 0; a full list is included in Table A). I interacted this dichotomous variable with a measure of time relative to the implementation date of Washington's paid sick leave law: January 2018. I disaggregated the pretreatment period and separately examined fall 2016 and fall 2017 versus the posttreatment period of spring 2018.

Paid sick leave. I took respondents' reports of whether they were provided with paid sick time as the first dependent variable. These data were collected with an item that instructed respondents to "Please look at the following list of benefits that employers sometimes make available to their employees. Which of the benefits on this list can you receive as part of your job at [name of employer]?" The first option was "paid sick days."

Working while sick. I also examined respondents' reports of presenteeism, or working while sick. Respondents were asked, "In the past month, did you ever work at [name of employer] even though you were feeling sick?" Respondents could select "Yes," "No, I was sick but I stayed home," or "No, I haven't been sick in the past month." This item was asked in fall 2017 and spring 2018. In fall 2016, respondents were asked a variant ofthe question: "In the past month, how often have you been sick, but gone to work anyway?" where the response options were "once," "twice," "three ormore times," or "never." I harmonized the 2 items and compared respondents who either reported that they were sick and worked anyway (fall 2017 and spring 2018) or who were sick and worked at least once (fall 2016; all 3 items coded as 1) against all others (coded as 0).

Work-life conflict. The survey data contained 2 items used in the literature to capture work-life conflict and that apply to the case of paid sick leave. The first item asked respondents to rate their agreement or disagreement with the statement, "In my work schedule at [name ofemployer], I have enough flexibility to handle family needs." Responses were "always true" (coded 1), "often true" (coded 2), "sometimes true" (coded 3), or "never true" (coded 4). The second item asked respondents to rate their agreement or disagreement with the statement, "My shift and work schedule at [name of employer] cause extra stress for me and my family." Response categories were the same (reverse coded). I also created a scale that combined these 2 items (a = 0.69).

Control variables. I was able to account for a set of potentially confounding worker characteristics. I adjusted estimates for gender, race/ethnicity, age, presence of children by age group, educational attainment, school enrollment status, marital status, usual work hours, tenure at current employer, hourly wage, and managerial status. These controls guarded against the risk of bias introduced if the composition of the workforce changed over time, especially if such compositional changes differed between Washington and comparison states.

Anaiysis

I used a difference-in-differences model to estimate the effect of the Washington paid sick leave law. Importantly, this model relied on the strong assumption that absent intervention, the difference between treatment and control units observed in the time period prior to treatment would be unchanged in the period posttreatment. Although this counterfactual cannot be tested directly, the presence of steady differences in the pretreatment period can be seen as evidence in support of this assumption.24 I estimated a linear probability model for the first 2 outcomes and an ordinary least squares regression model for the 3 work-life conflict outcomes in which the key term was an interaction between working in Washington State and time. For the binary outcomes, I estimated robust standard errors. For each outcome, I estimated a model that allowed for distinct estimates of the dependent variables in each of the 2 pretreatment periods. This allowed at least partial assessment of the parallel trends assumption, although I was limited by having only have 2 pretreatment observations. For the analysis of the work-life conflict measures, I estimated 3 versions of each model: first for the full sample, then for women, and finally for women with children.

In addition to controlling for a set of worker-level demographic and work-related characteristics, I was able to include employer fixed effects, which allowed within-employer comparisons overtime. Appendix B (available as a supplement to the online version of this article at http://www.ajph.org) presents a set of robustness tests.

RESULTS

I first present results from the analysis of the effects of Washington's paid sick leave law on employee's reports of having paid sick time. I then examine the effects of the law on employees' reports of working while sick. Finally, I examine how the law affected work-life conflict.

Paid Sick Leave Coverage

Table 1 presents the key regression result for the model examining how worker access to paid sick time changed after the implementation of the Washington law. In model 1, I separated the preimplementation period into 2 blocks-fall 2016 and fall 2017-and contrasted the predicted levels of the outcome with the postimplementation period: spring 2018. The interaction terms indicate that the Washington State and comparison state trend between fall 2016 and fall 2017 is indeed parallel (B = 0.02; P = .782) but that there is significant divergence after implementation (B = 0.28; P< .001).

Figure 1 plots predicted values from this model. In the left-side panel, the gray vertical line denotes when the Washington law went into effect (and the black line when it was passed). The share of workers reporting paid sick leave benefits was nearly identical in Washington State (33%) and in comparison states (27%) prior to implementation. Although there were clear parallel trends in the preimplementation period for Washington State and comparison states, there was also a clear upward slope in both between fall 2016 and fall 2017. However, following implementation, the slope is significantly flatter for comparison states than for Washington State, where there is a distinct steepening to the slope. At follow-up, the share of workers in Washington reporting paid sick leave was 72% versus 38% in comparison states, an estimated effect size of a 28 percentage point increase in coverage.

Working While Sick

The Washington State paid sick leave law appears to have increased access to paid sick time. In model 2 of Table 1, I examined whether that translated into workers being less likely to come to work when sick. Here too, there was clear evidence in support of parallel trends: there was no difference in the change in working while sick between Washington and comparison workers between fall 2016 and fall 2017 (B = 0.02; P = .761). Following implementation, however, there was a significant difference, with Washington workers less likely to work while sick (B = -0.08; P< .05).

Figure 1b plots predicted values from this model using the same approach as before. There was no evidence of change in the share of workers in comparison states who reported working while sick; it stayed at a steady 64% across all 3 periods. In contrast, the share was steady in Washington State in the preimplementation periods (68% and 70%), but then dropped significantly after implementation to 59%. The plot shows the emergence of difference between Washington comparison states after implementation of the paid sick leave law.

Work-Life Conflict

Estimates from the difference-in-differences models of work-life conflict are presented in Table 2. The table presents results for 3 models (all respondents, female respondents, and mothers) for 3 outcome measures. The first 3 models (1-3) show the estimates for respondents' reports of having enough flexibility in their schedules to deal with personal and family matters. This outcome variable most closely captures the dimension of work-life conflict that paid sick leave might help to mitigate. Across all 3 models, the key interaction is in the expected direction but is not statistically significant. Similarly, there were no significant effects of the paid sick leave law on the alternative measure of work-life conflict (if the respondent's work schedule caused stress on self or family; models 4-6) or on the combined measure (models 7-9). Figure A (see Appendix A) shows the estimates from models 3,6, and 9.

DISCUSSION

In the absence of federal regulation, paid sick leave laws have been enacted in 11 states and 30 cities across the country. Prior evaluation research has drawn on employer self-reports of compliance or used employee data to gauge labor market effects. The result is that we know relatively little about whether passage leads to workers having more access to paid leave and, secondly, whether it allows workers to use that leave to avoid working while sick and to reduce their burden of caring for others.

I have drawn on unique survey data collected from 12 722 retail and food service workers over a 2-year period

spanning the implementation of Washington State's paid sick leave law. My estimates from difference-in-differences models show that the Washington State law expanded workers' access to paid sick leave by 28 percentage points. The Washington law also reduced the share of workers who reported working while sick in the month prior to the survey by 8 percentage points. However, at least over this short-term follow-up period, the law did not serve to reduce work-life conflict for Washington workers. These estimates indicate the effectiveness of Washington State's paid sick leave law; however, they also provide valuable, plausibly causal estimates ofthe effect of paid sick leave on presenteeism and work-life conflict. Although prior research found evidence of strong associations,3,4 my approach diminishes concern about bias from unobservables.

Limitations

This research is subject to important limitations. The estimates are based on worker reports collected before the law's implementation and then 2 to 7 months following implementation. They summarize, then, very short-term impacts of implementation. In this respect, they suggest that many employers in Washington State acted quickly to implement paid sick time and that employee awareness of the benefit was substantial. The strongest effects were on the most proximate outcomes: availability ofpaid sick leave and not working while sick; there was little effect on the more distal outcome of work-life conflict. It is possible that such more-distal outcomes will be more strongly affected by the law over time as employees make repeated use of the benefit. However, it is important to bear in mind that the estimates are limited to retail and food service workers, who may be among the most likely to experience change as a result of the law.

Additionally, the sample was constructed using an innovative approach that takes paid advertisements on Facebook as both the sampling frame and recruitment device. Although the data are internally consistent and meet benchmarks from gold standard sources,25 they represent a nonprobability sample. To the extent that sample composition is biased on a variable that conditions the estimated effect size, the average treatment estimates may also be biased. However, these data do allow insight into the employee-side experience of paid sick leave regulations that is otherwise difficult to obtain.

Finally, the data offer limited capacity to assess the parallel-trends assumption that is fundamental to the difference-in-difference model. Although there is no evidence of significant divergence in trends in the 2 periods before implementation, there is no longer-run pretrend to assess. Similarly, the data offer limited capacity to assess the extent to which other contemporaneous changes in labor law specific to Washington State might contaminate the study's estimates. Although Seattle passed secure scheduling legislation in this period, workers in Seattle were excluded from the analysis, and although Washington State has also passed a paid family and medical leave law, this law does not take effect until 2020. There was a statewide increase in the minimum wage over the observation period. Although this change could confound the effects of paid sick leave, given the outcomes examined, this seems unlikely. Specifically, there is no theoretical basis for hypothesizing that when employers are mandated to increase wages, they might also increase paid sick leave. It is possible, though, that ifworkers were paid more, they might opt not to work while sick even in the absence of paid sick leave.

Public Health Implications

I present early evidence on the effectiveness of Washington State's paid sick leave law. In the first year ofimplementation, there were large and significant effects of the law on workers' reported access to paid sick leave and reductions in working while sick for a particularly disadvantaged segment of the state's labor force. These results support the idea that policy levers that may be perceived as quite distal to health outcomes, such as labor policy, can have important effects on public health by shaping important socioeconomic determinants of health and well-being. In this sense, the broader constellation of labor regulations that are designed to "raise the floor" on job quality, such as minimum wage, paid parental leave, and secure work scheduling laws, can all be seen as a way of advancing health, perhaps particularly for the most disadvantaged workers and families in the United States. ÂfPU

Sidebar

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CONFLICTS OF INTEREST

The author reports no conflicts of interest.

HUMAN PARTICIPANT PROTECTION

This study was approved by the University of California, Berkeley's Committee for the Protection of Human Subjects.

References

REFERENCES

1. Bureau of Labor Statistics. 2017. Employee benefits survey: paid leave benefits. Table 32: leave benefits: access, private industry workers, March 2017. Available at: https://www.bls.gov/ncs/ebs/benefits/2017/ownership/private/table32a.htm. Accessed November 16, 2019.

2. Heymann J, Rho HJ, Schmitt J, Earle A. Contagion Nation: A Comparison of Paid Sick Day Policies in 22 Countries. Washington, DC: Center for Economic and Policy Research; 2009.

3. DeRigne L, Stoddard-Dare P, Quinn L. Workers without paid sick leave less likely to take time off for illness or injury compared to those with paid sick leave. Health Aff (Millwood). 2016;35(3):520-527.

4. Clemans-Cope L, Perry C, Kenney G, Pelletier J, Pantell MS. Access to and use ofpaid sick leave among low-income families with children. Pediatrics. 2008; 122(2):e480-e486.

5. Stearns J, White C. Can paid sick leave mandates reduce leave-taking? Labour Econ. 2018;51:227-246.

6. Marotta J, Greene S. Paid Sick Days: What Does the Research Tell Us About the Effectiveness ofLocal Action? Washington, DC: Urban Institute; 2019.

7. Carre F. (In)Dependent Contractor Misclassification. Washington, DC: Economic Policy Institute; 2015. EPI Briefing Paper #403.

8. Galvin D. Deterring wage theft: alt-labor, state politics, and the policy determinants of minimum wage compliance. Perspect Polit. 2016;14(2):324-350.

9. Bernhardt A, Spiller M, Polson D. All work and no pay: violations of employment and labor laws in Chicago, Los Angeles and New York City. Soc Forces. 2013;91(3): 725-746.

10. Weil D, Pyles A. Why complain? Complaints, compliance, and the problem ofenforcement in the US workplace. Comp Labor Law Policy J. 2005;27:59-92.

11. Colla C, Dow W, Dube A, Lovell V. Early effects of the San Francisco paid sick leave policy. Am J Public Health. 2014;104(12):2453-2460.

12. Romich J. Local mandate improves equity ofpaid sick leave coverage: Seattle's experience. BMC Public Health. 2017;17(1):60.

13. Appelbaum E, Milkman R. No Big Deal: The Impact of New York City's Paid Sick Days Law on Employers. NewYork, NY: Center for Economic and Policy Research; 2015.

14. Lindemann D, Britton D. Earned Sick Days in Jersey City: A Study of Employers and Employees at Year One Center for Women and Work. Piscataway, NJ: Rutgers, the State University of New Jersey School of Management and Labor Relations; 2015.

15. Romich J, Bignell W, Brazg T, et al. Implementation and Early Outcomes of the City of Seattle Paid Sick and

Safe Time Ordinance. Seattle, WA: City of Seattle, Office of City Auditor; 2014.
16. Hill H. Paid sick leave and job stability. Work Occup. 2013;40(2):143-173.
17. Pichler S, Ziebarth N. Labor market effects ofUS sick pay mandates. J Hum Resour. 2018;0117-8514R. [E-pub ahead of print October 16, 2018.]
18. Ahn T, Yelowitz A. The short-run impacts of Connecticut's paid sick leave legislation. Appl Econ Lett. 2015;22(15):1267-1272.
19. Lohaus D, Haberman W. Presenteeism: a review and research directions. Hum Resour Manage. 2018;29:43-58.
20. Maume D. Can men make time for family? Paid work, care work, work-family reconciliation policies, and gender equality. Soc Currents. 2016;3(1):43-63.
21. Washington State Dept of Labor &Industries. Employer resource center for paid sick leave. 2019. Available at: https://www.lni.wa.gov/WorkplaceRights/ LeaveBenefits/VacaySick/EmployerInfo.asp. Accessed November 16, 2019.
22. Osterman P, Schulman B. Good Jobs America: Making Employment Better for Everyone. New York, NY: Russell Sage Foundation; 2011.
23. Schneider D, Harknett K. Consequences of routine work-schedule instability for worker health and wellbeing. Am Sociol Rev. 2019;84(1):82-114.
24. Wing C, Simon K, Bello-Gomez R. Designing difference in difference studies: best practices for public health policy research. Annu Rev Public Health. 2018; 39(1):453-469.
25. Schneider D, Harknett K. What's to like? Facebook as a tool for survey data collection. Sociol Methods Res. 2019. Available at: https://journals.sagepub.com/doi/ pdf/10.1177/0049124119882477. Accessed December 13, 2019.

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Improving Sensitivity in Hypertension Screening Among Overweight and Obese Youths

Puac-Polanco, Victor; Kalia, Vrinda

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FULL TEXT

In 2016, the American Academy oF Pediatrics (AAP) revised the cutoffs for screening and diagnosis of hypertension in young people, but screening criteria remained unchanged, according to the European Society oF Hypertension. To assess whether the AAP screening criteria captured more youths at risk for hypertension in a sample of overweight or obese European youths, Bonito et al. analyzed cardiometabolic data for 2929 children aged 6 to 16 years. The authors Found that 11% oF youths classified as nonhypertensive according to European Society of Hypertension criteria were reclassified as hypertensive based on AAP criteria. Reclassified youths had a 30% higher probability of experiencing insulin resistance and atherogenic dyslipidemia. There is an opportunity to revisit existing screening criteria to improve detection oF hypertension.

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On Knowingly Setting Unrealistic Goals in Public Health

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ABSTRACT (ENGLISH)

What is the ethics of setting unrealistic goals in public health- declared goals of population health campaigns that, when introduced, are already known to be impossible to accomplish? Over the past 2 decades, major public health campaigns have set unrealistic goals, such as "eliminating" or reaching "zero" on diseases and risk factors that are clearly ineliminable.

We argue that unrealistic goals can sometimes motivate action, attract funding, and help educate the public and public health practitioners better than realistic goals. Although unrealistic goal setting faces ethical challenges, including the charge of deceit and that of undermining the field's credibility, we argue that these challenges can be met.

The advantages of unrealistic goal setting while overcoming these challenges can be accomplished in 2 stages: (1) an initial declaration of the attractive but unrealistic goal educates and motivates; (2) realistic, precise, and actionable subgoals then expose its unrealistic nature and preempt ongoing deceit.Common to all or most of these goals is that achieving them probably seemed highly unlikely, or even impossible, when they were set. Is it ethical for public health agencies and organizations to endorse and raise human and financial resources for goals that in their view cannot be attained? This perspective argues, perhaps surprisingly, that it can be ethical.

The perspective starts with an initial case for some unrealistic goal setting in public health. It then responds to 3 challenges. We conclude by recommending knowingly setting unrealistic goals in public health in certain circumstances and in certain forms.

FULL TEXT

Headnote

What is the ethics of setting unrealistic goals in public health- declared goals of population health campaigns that, when introduced, are already known to be impossible to accomplish? Over the past 2 decades, major public health campaigns have set unrealistic goals, such as "eliminating" or reaching "zero" on diseases and risk factors that are clearly ineliminable.

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The advantages of unrealistic goal setting while overcoming these challenges can be accomplished in 2 stages: (1) an initial declaration of the attractive but unrealistic goal educates and motivates; (2) realistic, precise, and actionable subgoals then expose its unrealistic nature and preempt ongoing deceit. (Am J Public Health. 2020;110:480-484. doi: 10.2105/AJPH.2019.305428)

By an "unrealistic" goal, we mean one that cannot be accomplished, at least not within the foreseeable future. The planners of the following population health campaigns may have deemed their declared goals unrealistic when they

set them:
* In 2003, when less than half a million people in low- and middle-income countries accessed antiretroviral treatment (ART), the World Health Organization (WHO) and the Joint United Nations Programme on HIV/AIDS launched the 3 by 5 campaign, formally aimed at putting 3 million people on ART by the end of 2005.1
* In 2005, the World Health Assembly adopted a resolution stating that everyone should have access to all needed health services.2 In 2010, a World Health Report endorsed universal health coverage, which its cube-shaped flagship figure represented as full coverage for all health care services for the entire population, as a goal for all countries.2 Much earlier, in 1977, WHO had adopted the goal of "health for all" by 2000.3
* Since 2008, WHO and other major organizations have presented other highly ambitious global health goals (e.g., zero deaths from childhood tuberculosis [TB],4 zero deaths from kidney failure,5 near-zero malaria deaths,6 zero malaria,7 and zero preventable deaths from pneumonia and diarrhea8).
* In 2015, the United Nations presented the sustainable development goals, which aim, among other things, at adequate health and well-being for all, an end to AIDS, TB, malaria, neglected tropical diseases, poverty, and hunger by 2030.9
* In the United States, the Healthy People 2020 Report of 2010 calls for the elimination of health and health care disparities.10 The patient safety movement promotes the goal of zero preventable hospital deaths,11 and the American Public Health Association (APHA) espouses the goal ofmaking the United States the "healthiest nation in the world" in 1 generation.12

Common to all or most of these goals is that achieving them probably seemed highly unlikely, or even impossible, when they were set. Is it ethical for public health agencies and organizations to endorse and raise human and financial resources for goals that in their view cannot be attained? This perspective argues, perhaps surprisingly, that it can be ethical.

The perspective starts with an initial case for some unrealistic goal setting in public health. It then responds to 3 challenges. We conclude by recommending knowingly setting unrealistic goals in public health in certain circumstances and in certain forms.

AN INITIAL CASE

We present an initial case for setting some unrealistic goals in public health.

Direct Usefulness

By the end of 2005, 1.3 million people were receiving ART -far from 3 by 5's stated goal of 3 million but triple the number in 2003. A 2006 WHO report concluded:

By establishing a global benchmark, 3 by 5 encouraged countries to set ambitious national treatment targets, demonstrating that targets can play a vital role in encouraging national ownership and in mobilizing stakeholders, funds, technical agencies and donors.1(p10)

Although alternative campaigns were never trialed, it seems likely that the unrealistically ambitious goal was part of what enabled this massive global expansion of ART.

The 3 by 5 goal was "achievement inducing"13,14 without having achieved its stated goal.15 Generally, an unrealistic goal can be instrumental for reaching other important public health targets-in this case, tripling the number of HIV-infected patients in treatment.

It is true that the same could be said of realistic goals. Setting any challenging goal-unrealistic or realistic-can be useful (e.g., by bolstering motivation, attracting resources, and coordinating efforts).16 But some perfectly realistic end points may be such that deliberately aiming at them is counterproductive to their accomplishment-philosophers would call them "essential byproducts"17-potentially making a related unrealistic goal more useful. Thus, it is possible that deliberately and publicly aiming at an ambitious yet realistic goal for receiving ART would have expanded its receipt less than setting an unrealistic goal has: that a 2 by 7 plan (i.e., a plan to place 2 million on ART by 2007) would have motivated and expanded access to ART less. We do not know that it would have, but surely this is sometimes the case, and if so, unrealistic goal setting is sometimes useful in the pursuit of valuable targets.

Polio eradication is another case in which an overly optimistic initial goal may have been ac- knowledged as having

been helpful. In 1988, the WHO set the goal of eradicating polio by the year 2000. In 2007 the director of the WHO Global Polio Eradication Initiative stated that by the late 1990s, the "real goal" for the year 2000 was that every country would have started striving toward polio eradication. Importantly, he deemed the originally stated goal essential to achieving it.18

Sometimes, the usefulness of an unrealistic goal consists in setting out on the likeliest path toward it, even when fulfilling that goal would have been bad. Take APHA's goal of the United States being the healthiest nation in the world in 1 generation.12 The likeliest scenario that would fulfill that goal may well be a catastrophe-induced decline in health on other continents. But for APHA's constituency, the pathway to promoting that goal is pushing for better health in the United States. A final reason unrealistic goals can be helpful is that seemingly unachievable goals sometimes turn out to be achievable. Bold goal setting may contribute to great public health victories, such as smallpox eradication.19

An Important Grain of Truth

Another good reason to set unrealistic goals is less directly instrumental. Ponder the goals of zero medical errors, zero deaths in traffic accidents,14 and zero preventable deaths. In a sense, anything exceeding zero is wrong here. By definition, any error should be avoided, and a single preventable death is one too many. This important truth is worth repeating, among other things through goal setting.

This point must not be overstated, however. Occasional human errors are, in a large system, unavoidable. Hence, even if we always could say about a particular actor's mistake that that mistake should not have happened, nationally reaching zero mistakes might remain impossible. If achieving something is impossible, then we cannot say that we ought to achieve it.

There is a sad but real inevitability about human error, accidents, funding shortages, and other unfortunate circumstances leading to, among other things, medical errors and preventable deaths. Human and societal frailty, indifference, and cruelty are known to social science. Childhood deaths from diarrhea, say, are highly preventable or amenable in a purely medical sense (viz., we know how to replace lost fluid) and in a purely economic one (viz., the direct cost of oral rehydration is minimal).8 But these might not be the relevant sense, given the many additional barriers to successful medical delivery (e.g., bad roads that prevent delivery and enfranchised voters' hostility to funding public health). Very sadly, many of these deaths are unpreventable in a sense that heeds all surrounding sociological, political, and economic barriers. Something that can be perfectly possible and within our ability in one sense can remain impossible in others.20

The Usefulness of the Grain of Truth

Even when barriers exogenous to the clinic make a goal like zero preventable deaths from pneumonia and diarrhea unrealistic for clinicians, setting such a goal can remain useful, partly thanks to the grain of truth we just noted that there is a sense in which any such death is preventable.

First, the initial plausibility of words like "preventable," which emphasize that grain of truth, may remain motivating for health personnel. Seeing these deaths as easily preventable and hence as especially preposterous could drive care improvements to the limited extent available to clinicians. Some care improvements are always achievable.

Second, what is unrealistic for a part of the large system (e.g., a single clinician, the health sector alone) might remain realistic, with system-wide coordination, for everyone (e.g., all of society or the entire government). Even if, given current budgets, zero preventable hospital deaths is unrealistic within a single hospital or within the health sector, if clinicians were uniformly highly motivated to provide optimal care within that budget, maybe more could be done; or the treasury and electorate might become more willing to boost that budget, placing the zero goalpost nearer.21

Third, even if these errors and deaths are unpreventable overall, to remind everyone that in a strict medical sense they remain perfectly preventable may help prevent them in such a time that the nonmedical barriers to averting these errors and deaths weaken. In all these ways, even when immediate fulfillment is unrealistic, emphasis on the ideal can have educational value.

THREE CHALLENGES

Setting unrealistic goals in health policy is, then, sometimes expected to promote valuable targets, by itself or through its educational effects. It also faces serious ethical challenges, 3 of which we now relay. These challenges, we shall later argue, remain surmountable.

Reduced Motivation

First, when goals are perceived as impossible to achieve, they may reduce rather than enhance motivation.22,23 For example, highly unrealistic goals may seem out of reach impression that goal setters are irresponsible, uninformed, or incompetent. Either way, boosting personal efforts and resources may seem pointless.

As an illustration, imagine that an even more ambitious goal for ART had been set in 2003, such as All by 5 (i.e., placing all HIV-infected patients in the world on ART by 2005). That patent pie in the sky would have probably alienated, rather than engaged, workers, donors, and leaders.

But some unrealistic goals are not so obviously unattainable as to sow more despair than seeds of change. Indeed, 3 by 5 is a case in point if indeed its net effect was tripling the global number of those receiving ART.

The Tragedy of Material Resource Commons

The 3 by 5 plan was criticized for distorting priority setting by reducing funding for other goals like malaria treatment and prevention.24 Indeed, the many "zero" campaigns at WHO following 3 by 5 probably reflected in part competition between organizations, with each raising its declared ambitions to corner funding. The seeming result was a series of increasingly inflated goals-and fewer resources for important organizations that set goals realistically. Thus, even when an unrealistic goal is conducive to 1 public health project, it may chip away at public health overall-ifyou will, a "tragedy of the commons."

Note, however, that 1 aspect of this tragedy of the commons takes place not when and because goal setting is unrealistic but when and because it is effective. There are only so many material resources to go around. Increased emphasis on ART receipt, for example, usually chips away at other goals.26 The 3 by 5 campaign did chip away at them- by successfully increasing HIV/ AIDS's share of the material resource pie, and not necessarily for being unrealistic.

Deceitand the Credibility

Commons Tragedy Third, although goals cannot, in and of themselves, be true or false, declaring them as one's goals can be false and, when intended to mislead, deceitful.27 It makes decision-making less autonomous (e.g., for health workers who may be willing to make great personal sacrifices for some targets but not others). For candidate study participants, hearing that the ultimate goal ofa risky early phase study is to help "cure" HIV may give false hope and undermine autonomous decision-making, even though progress toward a cure is genuinely the study's goal.28

Deceit also creates a tragedy of the commons in competition for an invaluable immaterial resource: credibility. Selling any particular project to funders may be easier with hyped-up promises. But it can force competing projects to inflate promises. Should all these empty promises be exposed (an unavoidable risk), public health credibility might erode irreparably. Not unlike antibiotics, unrealistic goals can only responsibly be used by so many actors.

Notwithstanding the challenge of deceit and lost credibility, setting unrealistic public health goals can remain permissible.

Let us start by relaying a wrong way to avoid deceit and protect credibility. Immediately upon introduction of a goal that is unrealistic as stated, one would clarify that the stated goal should be interpreted as a mere figure of speech (e.g., as hyperbole). To do so, one need not specify one's actual target. In this vein, it is so patently clear that in the foreseeable future some health disparities in the United States will persist, notwithstanding the good fight against them, that it is hard to read the Healthy People 2020 goal of eliminating disparities (and not just reducing them, in the language of earlier Healthy People reports)29 as attempting to mislead anyone about what is achievable. The unrealistic nature of this (perhaps exciting and thus helpful) language is so conspicuous that suspicion of attempted deceit does not take off.In philosopher Harry Frankfurt's terms, sometimes unrealistic goals are mere "bullshit," with no purport of being literally true.30

However, when public health goals are experienced as mere "cheers," oras information about how things could have

been, oras statements of general commitment-but not as the targets literally set-something is lost. These goals are less likely to strengthen motivation, coordination, accountability, and of being literally true.30

First, when words patently perform a speech act different than straightforward goal setting (e.g., irony or metaphor), no exciting motivational boost occurs. If advertising 3 by 5 always immediately included "by which we mean much less than 3 million," then presumably the excitement ofthe prospect ofsaving 3 million people would not occur. The goal motivated precisely because it was, initially at least, misleading.

Second, to clarify that a goal should not be understood literally does not yet state how it is to be understood. And lack of specification is detrimental to coordinating actions. For instance, if everyone realized that by 3 by 5 what is meant is "more than would be achieved with a more realistic goal but less than 3 million patients" and not precisely how many, it would be difficult to prepare the exact number of pills, health workers, clinics, and other resources for the right number of new patients on ART. Suboptimal coordination creates waste, chronic treatment interruptions, and drug resistance. Failure to specify the actual target foils evaluation of progress to- ward that target and accountability for failure to reach it.

UNREALISTIC GOALS WITH REALISTIC TARGETS

To use the motivating force of an idealized if unrealistic overall goal without substantial misleading and deceit, a 2-stage approach can help. First, set the unrealistic yet inherently desirable goal as though you meant it literally. That could prompt stakeholders to return in their minds to the ideals that drew them to public health in the first place, with motivational and educational benefits. Second, ensure that the merely figurative nature of the goal becomes manifest shortly thereafter (though not immediately) by keeping the specifics realistic. Actionable specifics would enable coordination and accountability. And because stakeholders would not act before receiving specifics, any autonomy transgression from the initially misleading goal would remain minor. What may linger is the educational and motivational boost.

In this spirit, visions ofa world without famine, poverty, health disparities, preventable disease, inspiring and motivating even when, after an initial cognitive pause, more detailed subgoals help specify the actual target and the visions are revealed to be mere figures of speech. These subgoals should be actionable and provide clear time frames and role responsibilities (e.g., SMART goals [specific, measurable, attainable, relevant, timely]).31 More standardized professional usage of the word "goals," which sometimes designates the ultimate aim or vision and other times targets and benchmarks, would prevent confusion and help coordinate progress toward the actual targets.

APHA's goal of the United States being the healthiest nation in the world currently lacks measurable benchmarks for success. APHA puts forth 9 areas for related work (e.g., helping all Americans achieve high school graduation, access to healthy food for everyone, and more preventive health care12) without specific targets, timelines, or role responsibilities. Although it might not be APHA's role to suggest targets, it is currently unclear who should work toward the goals (e.g., who should help all Americans achieve high school graduation and access to healthy food). Contrast that with the United Nations' Sustainable Development Goal of ensuring healthy lives and promoting well-being.9 Without specification, this vague, ambitious, general goal might have been deceit or "bullshit," unconducive to coordination, evaluation, and accountability. Fortunately, the overall goal is specified by a set of subgoals with more actionable specifics (hence there is some prospect for coordination, evaluation, and accountability). One such target is to decrease the global maternal mortality ratio to less than 70 per 100 000 live births by 2030.32 This target is challenging but precise, evaluable, and approachable,13 and thus likely conducive to coordination and accountability. We do not know how this Sustainable Development Goal affects audiences; however, if it enables strong motivation and full coordination without lasting deceit, then it seems to us to strike a good balance between the various promises and perils that we have charted. (Of course it may remain problematic otherwise.)

There is a caveat, though. When the overarching goals are already precise and stated in terms ofthe same metrics as the realistic subgoals, they may be too contradictory to hang together. It would have been plainly contradictory if the 3 by 5 campaign had used subgoals that did not add up to 3 million people on ART.

Even here, however, there may be exceptions. Some of the many current zero goals are cashed out with metrics

that are plainly greater than zero (e.g., "anything nearing eradication," "anything maintaining herd protection," or "90% reduction"33). The WHO's "End TB Strategy" differentiates between a "vision" of "zero deaths, disease and suffering due to tuberculosis," a "goal" to end the global tuberculosis epidemic, and "targets" of a 90% reduction in TB incidence rate and a 95% reduction in TB deaths in 2035 compared with 20 1 5.34 The United Nations' first Millennium Development Goal was to "eradicate" extreme poverty, but its "target" was to merely halve the level by 2015, and that target was achieved.35 (It is less clearthat the target of the equivalent Sustainable Development Goal, to "eradicate" extreme poverty by 20 30,36 is achievable.) Historically, discrepancies between unrealistic public health goals and realistic targets have not always defeated public health campaigns or trust in health professionals.

That's partly thanks to the ambiguous language of many goals that-sometimes unintentionally-camouflages discrepancies. Exciting (and seemingly unrealistic) words like "end" and "elimination" are sprinkled throughout current talk ofending the AIDS epidemic in the United States, but they are nonetheless always applied to "outbreak" and " epidemic" rather than simply to " incidence," thus permitting some continuing infections (as is realistic). An architect of the US plan recently clarified that ending the AIDS epidemic in the United States and beyond means achieving merely HIV "control," not "eradication" or "elimination."37

CONCLUSIONS

Unrealistic goals can serve many purposes in public health. They can motivate action, attract funding, and educate about the fundamental values of the field, sometimes better than more realistic goals would. However, unrealistic goal setting is challenging, and can even undermine the field's credibility. One way to use the promise ofunrealistic goal setting without undermining credibility is to make the unrealistic nature of the goal evident through realistic, precise, and actionable subgoals shortly following the goals' initial declaration.

CONTRIBUTORS

The authors made equal contributions to this article.

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No protocol approval was necessary because no human participants were involved involved in this study.

Sidebar

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References

REFERENCES

1. Progress on Global Access to HIV Antiretroviral Therapy: A Report on "3 by 5" and Beyond. Geneva, Switzerland: World Health Organization; 2006.

2. The World Health Report: Health Systems Financing: The Path to Universal Coverage. Geneva, Switzerland: World Health Organization; 2010.

3. World Health Organization. World health report 1998, executive summary: achieving health for all. 1998. Available at: https://www.who.int/whr/1998/ media_centre/executive_summary6/en. Accessed September 20, 2019.

4. Marais BJ, Graham SM. Childhood tuberculosis: a roadmap towards zero deaths. J Paediatr Child Health.

2016;52(3): 258-261.
5. Mehta RL, Cerdá J, Burdmann EA, et al. International Society of Nephrology's 0by25 initiative for acute kidney injury (zero preventable deaths by 2025): a human rights case for nephrology. Lancet. 2015;385(9987):2616-2643.
6. World Malaria Report 2011. Geneva, Switzerland: World Health Organization; 2011.
7. RBM Partnership to End Malaria. RBM partnership to end malaria vision. Available at: https://endmalaria.org/about-us/vision. Accessed May 16, 2019.
8. Chopra M, Mason E, Borrazzo J, et al. Ending of preventable deaths from pneumonia and diarrhoea: an achievable goal. Lancet. 2013;381(9876):1499-1506.
9. United Nations. 17 goals to transform our world. Available at: http://www.un. org/sustainabledevelopment. Accessed June 12, 2019.
10. Office of Disease Prevention and Health Promotion. About Healthy People. Available at: https://www.healthypeople.gov/2020/AboutHealthy-People. Accessed January 3, 2020.
11. Kiani J. Preventable hospital deaths: is zero possible? Nurs Manag. 2017;48(11): 8-9.
12. American Public Health Association. Generation public health. Available at: https://www.apha.org/what-is-publichealth/generation-public-health. Accessed June
13. Edvardsson K, Hansson SO. When is a goal rational? Soc Choice Welfare. 2005; 24(2):343-361.
14. Rosencrantz H, Edvardsson K, Hansson SO. Vision zero-is it irrational? Transp Res Part A Policy Pract. 2007;41(6): 559-567.
15. KimJY. Straight talk with . . .Jim Yong Kim. Nat Med. 2008;14(12): 1298-1299.
16. Locke EA, Latham GP. New directions in goal-setting theory. Curr Dir PsycholSci. 2006;15(5):265-268.
17. Elster J. Sour Grapes: Studies in the Subversion ofRationality. Cambridge, UK: Cambridge University Press; 1983.
18. Heymann D, Aylward B. Polio will soon be history. The Bulletin interview with Dr David Heymann and Dr Bruce Aylward, Bull World Health Organ. 2007; 85(1):7-8.
19. Centers for Disease Control and Prevention. History of smallpox. Available at: https://www.cdc.gov/smallpox/history/ history.html. Accessed September 15,2019.
20. Lewis D. Scorekeeping in a language game. JPhilos Log. 1979;8(3):339-359.
21. Estlund DM. Utopophobia: Political Philosophy Beyond the Feasible. Princeton, NJ: Princeton University Press; 2015.
22. Ordóñez LD, Schweitzer ME, Galinsky AD, Bazerman MH. Goals gone wild: the systematic side effects of over-prescribing goal setting. Acad Manage Perspect. 2009;23(1):6-16.
23. Stedry AC, Kay E. The effects of goal difficulty on performance: a field experiment. Behav Sci. 1966;11(6):459-470.
24. Harries AD. Predicting the failure of 3 by 5. Lancet. 2005;366(9480):117.
25. Hardin G. The tragedy of the commons. The population problem has no technical solution; it requires a fundamental extension in morality. Science. 1968;162(3859):1243-1248.
26. KimJY, Ammann A. Is the "3 by 5" initiative the best approach to tackling the HIVpandemic?PLoSMed.2004;1(2):e37.
27. Saul J. Lying, Misleading, and What Is Said. Oxford, UK: Oxford University Press; 2012.
28. Eyal N, Kuritzkes DR. Challenges in clinical trial design for HIV-1 cure research. Lancet. 2013;382(9903): 1464-1465.
29. Office ofDisease Prevention and Health Promotion. Foundation Health Measures Archive: disparities. Available at: https://www.healthypeople.gov/2020/ about/foundation-health-measures/ Disparities. Accessed December28, 2019.
30. Frankfurt HG. On Bullshit. Princeton, NJ: Princeton University Press; 2005.
31. Doran GT. There's a S.M.A.R.T. way to write management's goals and objectives. Manage Rev. 1981;70:35-36.
32. United Nations. Goal 3: ensure healthy lives and promote well-being for all at all ages. Available at: http://www.

un.org/sustainabledevelopment/health. Accessed June 5, 2019.
33. Getting to Zero San Francisco. Our vision. Available at: http://www. gettingtozerosf.org. Accessed July 29, 2019.
34. World Health Organization. The End TB Strategy. Available at: https://www.
who.int/tb/strategy/End_TB_Strategy. pdf?ua=1. Accessed January 2, 2020.
35. United Nations. We can end poverty: millennium development goals and beyond 2015. Available at:
https://www.un. org/millenniumgoals/poverty.shtml. Accessed September 15, 2019.
36. United Nations. Sustainable development goals. Goal 1: endpoverty in all its forms everywhere. Available at:
https:// www.un.org/sustainabledevelopment/ poverty. Accessed September 15, 2019.
37. Fauci A. Achieving HIV control. Paper presented at: IAS 2019. Mexico City; July 22,

DETAILS

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Same-Sex Marriage and Gains in Employer-Sponsored Insurance for US Adults, 2008–2017

Downing, Janelle, PhD; Cha, Paulette, PhD

ProQuest document link

ABSTRACT (ENGLISH)

Objectives. To estimate the effects of same-sex marriage recognition on health insurance coverage.
Methods. We used 2008-2017 data from the American Community Survey that represent 18 416 674 adult respondents in the United States. We estimated changes to health insurance outcomes using state-year variation in marriage equality recognition in a difference-in-differences framework.
Results. Marriage equality led to a 0.61 percentage point (P =.03) increase in employer-sponsored health insurance coverage, with similar results for men and women.
Conclusions. US adults gained employer-sponsored coverage as a result of marriage equality recognition over the study period, likely because of an increase in dependent coverage for newly recognized same-sex married partners. (Am J Public Health. 2020;110: 537-539. doi:10.2105/AJPH.2019.305510)

FULL TEXT

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Same-sex marriage had been gaining state recognition over a period of years when, in 2015, its nationwide equality to different-sex marriage was confirmed through the Supreme Court decision Obergefell v. Hodges.1 Although not an explicit aim of same-sex marriage recognition, one benefit for those in same-sex relationships is equal access to spousal employer-sponsored health insurance (ESI) through marriage.
Marriage has long offered a means of accessing ESI coverage for members of different-sex couples. Moreover, it is unsurprising that prior to marriage equality, ESI coverage was 6 percentage points lower for both women and men in same-sex relationships than for those in heterosexual relationships.2 Another pre-equality study confirmed these findings, showing that rates of dependent ESI coverage were 15 percentage points lower among lesbian partnered women and 8 percentage points lower among gay partnered men compared with their heterosexual partnered peers.3 Marriage equality has the potential to reduce ESI disparities and possibly decrease the inequities in uninsurance observed in several studies ofthe period predating marriage equality.2-5
Findings from early in the nationwide postequality period show that the recognition of same-sex marriage is associated with having health insurance of any type among gay men (although not among lesbian women).6 Insurance coverage helps facilitate access to health services, which is important for sexual minorities, a population characterized by health disadvantages such as a higher risk of early mortality.7 Sexual minorities are at elevated risk of delaying care because of costs,8 and improved access to health insurance has the potential to play a role in reducing these delays. In light of the current policy discussion on universal health care coverage and the contemporary nature of marriage equality, it is critical to understand what the legal recognition of same-sex marriage means in terms of numbers of individuals newly covered by ESI. We fill this need by estimating the effects of same-sex marriage recognition on ESI and other health insurance outcomes.
METHODS
This study used 2008-2017 public-use data from the American Community Survey (ACS).9 The ACS is an ongoing annual household survey of approximately 3.5 million housing units collected by the US Census Bureau. We created data on the timing of states' recognition of same-sex marriage from publicly available online sources.10 (For dates, see Appendix, available as a supplement to the online version of this article at http:// www.ajph.org). The study sample included all nonelderly respondents aged 18 to 64 years, irrespective of their sexual orientation or relationship status.
We estimated the effect of marriage equality on ESI as our primary analysis. We also studied the effect on any type of private coverage (including ESI, direct purchase plans, and TRICARE or other military health care), public coverage (Medicare, Medicaid, Department of Veterans Affairs insurance, as well as state or local public insurance programs), and uninsurance (no health insurance or only Indian Health Services coverage).
We used a difference-in-differences approach that leveraged state-time variation in recognition of marriage equality to estimate changes to health insurance. The model accounted for gender, race, ethnicity, education, age, age squared, family size, and income, and included an indicator for young adults aged 26 years or older in 2010 or after, since this group gained eligibility for private dependent coverage in 2010. We included state-by-year unemployment and state and year fixed effects. Standard errors are heteroscedasticity-robust and clustered by state (see online Appendix for model details).
We expected that our intent-to-treat approach of including all nonelderly, nondisabled adults would produce small effect sizes since the affected individuals were a minority population. Our approach allowed us to avoid using potentially weak proxies of sexual orientation. We adjusted models by using analytic weights for the full US population. The analyses were linear probability models. Coefficients could be interpreted as percentage point changes, or multiplied by population sizes to estimate numbers of people affected. We conducted all analyses with Stata 14 MP statistical software (StataCorp LP, College Station, TX).

RESULTS

Marriage equality produced a 0.61 percentage point (P = .03) increase in ESI, which accounted for most of the 0.74 percentage point (P = .07) increase in having any private insurance (Figure 1). This translates to an estimated 11.6 million person-years ofESI coverage over the period 2008 to 2017. Despite these gains in ESI coverage, there was no measurable decline in uninsurance and no change in public insurance (see online Appendix for detailed results). Results were similar for men and women (not shown).

DISCUSSION

Millions of US adults gained employersponsored coverage after marriage equality recognition over the period 2008 to 2017, likely because of an increase in dependent coverage for same-sex partners following the policy change. Our results are consistent with prior work that found that people in same-sex relationships were less likely to have ESI when they lived in a state that did not recognize 2,3 same-sex marriage.

Contrary to previous research that found gains in health insurance only among men,6 we found similar results for men and women. This is in part because of differences in data, study population, and approach: our analysis included more years of postequality data, and we did not use proxies for sexual orientation to estimate a treatment-on-the-treated effect. The lack of change to uninsurance in our study, despite gains in ESI, is not surprising. Those with new ESI may have switched from nongroup private plans or from public health insurance, rather than exclusively from being uninsured.

This study has limitations. Although we suspect that the changes in insurance coverage occurred among sexual minority couples who married or had existing unions recognized, we were unable to identify the specific mechanisms by which the change occurred or the population most likely affected by the policy (i.e., sexual minorities). Restricting our analysis to people in same-sex relationships would require the assumption that marriage equality did not influence respondents' willingness to identify as part of a same-sex couple. In addition, our study included states that did not legalize same-sex marriage until 2015, resulting in some short postequality periods. If any effects on health insurance grew or changed over time, we were limited in our ability to capture this in the analysis. Future work should distinguish the plausible short- and long-run impact of marriage equality on health insurance.

We suggest that future research on same-sex marriage should go beyond the net effects to explore context and dynamics, as it is likely that other status characteristics such as geographic location, age, income, or family structure can intersect with sexual orientation in ways that are meaningful for health insurance outcomes.11

PUBLIC HEALTH IMPLICATIONS

Marriage equality played a critical role in expanding access to employer-sponsored insurance. This has far-reaching health benefits for those newly insured, and may offer out-of-pocket savings or access to more comprehensive benefits for those switching from a nongroup or public plan.

CONTRIBUTORS

J. Downing initiated the study and led the writing. J. Downing and P. Cha designed the study, programmed and analyzed the data, interpreted results, and edited drafts of the manuscript.

HUMAN PARTICIPANT PROTECTION

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Sidebar

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References

REFERENCES
1. Obergefelletal. v. Hodges, 576 1,June26,2015 (Supreme Court of the United States 2015).
2. Gonzales G, Blewett LA. National and state-specific health insurance disparities for adults in same-sex relationships. AmJ Public Health. 2014;104(2):e95-e104.
3. Ponce NA, Cochran SD, Pizer JC, Mays VM. The effects of unequal access to health insurance for same-sex couples in California. Health Aff (Millwood). 2010;29(8): 1539-1548.
4. Buchmueller T, Carpenter CS. Disparities in health insurance coverage, access, and outcomes for individuals in same-sex versus different-sex relationships, 2000-2007. Am J Public Health. 2010;100(3):489-495.
5. Heck JE, Sell RL, Gorin SS. Health care access among individuals involved in same-sex relationships. Am JPublic Health. 2006;96(6):1111-1118.
6. Carpenter C, Eppink ST, Gonzales G Jr, McKay T. Effects of Access to Legal Same-Sex Marriage on Marriage and Health: Evidence From BRFSS. Cambridge, MA: National Bureau of Economic Research; 2018.
7. Cochran SD, Bjorkenstam C, Mays VM. Sexual orientation and all-cause mortality among US adults aged 18 to 59 years, 2001-2011. Am JPublic Health. 2016;106(5): 918-920.
8. Dahlhamer JM, Galinsky AM, Joestl SS, Ward BW. Barriers to health care among adults identifying as sexual minorities: a US national study. Am J Public Health. 2016; 106(6):1116-1122.
9. Ruggles S, Genedek K, Goeken R, Grover J, Sobek M. Integrated Public Use Microdata Series: Version 7.0 [data set]. Minneapolis: University of Minnesota; 2017.
10. Freedom to Marry. Winning in the states. 2016. Available at: http://www.freedomtomarry.org/pages/ winning-in-the-states. Accessed June 20, 2017.
11. Cochran SD, Mays VM. Advancing the LGBT health research agenda: differential health trends within the lesbian, gay, and bisexual populations. Am J Public Health. 2017;107(4):497-498.

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Deportation of Family Members of US-Citizen Latinos and Misuse of Prescription Drugs: United States, 2019

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ABSTRACT (ENGLISH)

Objectives. To investigate how personally knowing a deported migrant relates to past-year prescription drug misuse among US-citizen Latinos. Methods. Between April and May 2019, a national sample (n = 3446) was recruited to complete an online survey. Multivariate and multinomial logistic regression models examined the role of (1) personally knowing a deported migrant and (2) the relationship to the deportee (e.g., family, friend) on (1) any past-year prescription drug misuse and (2) the frequency of prescription drug misuse. I limited analyses to US citizens only (n = 3282). Results. Overall, 19% of all participants reported any past-year prescription drug misuse. Latinos who had a family member who was deported reported significantly higher odds of past-year prescription drug misuse and were exceedingly at higher risk for misusing prescription drugs 3 or more days in the pastyearas compared with Whites and Latinos who did not personally know a deported migrant. Conclusions. Public health prevention strategies and deportation policies need to consider and address how the deportation of an individual will affect the health of that individual's US-citizen family members. (Am J Public Health. 2020;1 10:560-566. doi: 10.2105/AJPH.2019.305516)

FULL TEXT

Headnote

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Methods. Between April and May 2019, a national sample (n = 3446) was recruited to complete an online survey. Multivariate and multinomial logistic regression models examined the role of (1) personally knowing a deported migrant and (2) the relationship to the deportee (e.g., family, friend) on (1) any past-year prescription drug misuse and (2) the frequency of prescription drug misuse. I limited analyses to US citizens only (n = 3282).

Results. Overall, 19% of all participants reported any past-year prescription drug misuse. Latinos who had a family member who was deported reported significantly higher odds of past-year prescription drug misuse and were exceedingly at higher risk for misusing prescription drugs 3 or more days in the pastyearas compared with Whites and Latinos who did not personally know a deported migrant.

Conclusions. Public health prevention strategies and deportation policies need to consider and address how the deportation of an individual will affect the health of that individual's US-citizen family members. (Am J Public Health. 2020;1 10:560-566. doi: 10.2105/AJPH.2019.305516)

Prescription drug misuse has emerged as a critical public health concern in the past decade. Prescription drugs refer to opioids (i.e., pain relievers), tranquilizers, stimulants, or sedatives and do not include over-thecounter drugs. The misuse of prescription drugs is characterized as their use without having a prescription, recreationally (i.e., "just for the feeling"), or in greater amounts, more often, or longer than prescribed. According to national estimates, in 2017, approximately 7% of the total adult US population reported past-year misuse of prescription drugs.1 This prevalence is significantly higher among young adults: 14% ofthose aged 18 to 25 years reported misusing prescription drugs in 2017. Importantly, this prevalence varies by race/ ethnicity. Among those aged 18 to 25 years in 2017, 18% of Whites, 10% of Blacks, and 12% of Latinos reported past-year misuse of prescription drugs.1 Although Latinos tend to report less misuse of prescription drugs, other studies have documented an elevated prevalence compared with the general population. For instance, a study among Latinos in Texas border communities found that past-year prescription drug misuse ranged from 7% to 26% among Latinos, depending on gender and border community.2 Similarly, a national study among adults aged 65 years or older found that Latinos had 3 times the odds ofmisusing prescription drugs in the past year compared with Whites.3

Prescription drug misuse carries numerous adverse health implications. The misuse of prescription drugs can lead to the development of prescription drug dependence, increase susceptibility to alcohol and other drugs, transition into injection drug use, and increase risk of HIV and other blood-borne infections and mortality stemming from an overdose.4-8 These health consequences and implications are notably evident by the current opioid epidemic in the United States, which claimed the lives of more than 47 000 Americans through overdoses in 2017 alone.9 It is not

surprising that opioids are the most commonly misused prescription drug.9,10

Furthermore, although opioid overdoses are highest among Whites, recent data have documented that opioid overdoses among Latinos are increasing at an exceedingly faster rate relative to Whites. For example, opioid overdose deaths among Latinos in Massachusetts doubled from 2014 to 2017.11 This trend has also been observed nationwide. According to data from the Centers for Disease Control and Prevention, fatalities resulting from opioid overdose increased by 53% between 2014 and 2016 among Latinos.12 However, why opioid overdose fatalities are increasing among Latinos is poorly understood.

Much research has focused on understanding factors associated with prescription drug misuse, including sociodemographic characteristics, mental and substance use disorders, social factors (e.g., social norms, peer pressure, low social support), and contextual factors (e.g., physicians' prescribing practices).2,5,13-15 However, the role of structural-level factors and their influence on prescription drug misuse have received almost no attention. Specifically, within the context of Latinos in the United States, emerging findings from my research team have underscored the importance of deportations as a structural determinant of the substance-using behaviors of US-citizen Latinos. With use of current nationally represented data (2019), findings from this work suggest that US-citizen adult Latinos who have had a family member deported have significantly higher odds of reporting symptoms of a drug use disorder as compared with Whites.16 The present study extends this previous work and is distinct in that this study exclusively examined the relationship between the deportation offamily members and prescription drug misuse among US-citizen Latinos. The deportation of a family member is a traumatic experience that has an impact on the whole family unit who experiences multiple severe emotional and psychological stressors.17-19 Such stressors may increase vulnerability to substance use, including prescription drug misuse.

Over the past decade, the United States has heightened immigration enforcement efforts and reached historic levels of deportations. Since 2008, more than 3 million migrants have been deported from the United States. Most recently available data indicate that deportations remain high: more than 256 000 migrants were deported in 2017.20 Importantly, Latino migrants make up the largest proportion of deportees. About 90% of all deported migrants are of Latino origin.20 Given the increasing deportations of Latino migrants and increasing trends in prescription drug misuse, including increasing rates of opioid addiction and misuse, in the United States make this line of research timely and significant. The present study investigates the role of US-citizen Latinos' relationship to the deported migrant on prescription drug misuse relative to other racial/ethnic groups and among Latinos only.

METHODS

This study draws on anonymous and de-identified data from the National Social Policy Survey. The original objective of the study was to better understand how social, political, and economic factors contribute to health and racial/ethnic health disparities. Between April and May of2019, the National Social Policy Survey study team recruited 3446 adult participants of White, Black, and Latino racial/ethnic descent via e-mail invitations to complete an online survey. Participants were recruited by using contact information (i.e., e-mail addresses) from the national voter registration database and Web panels from Pure Spectrum and Cint, 2 market research firms. Briefly, Web panels entail registries of individuals who have agreed to partake in online surveys. Web panels are constructed through targeted invitations that are meant to reflect the general population. Web panels were used to reach nonregistered voters, including non-US citizens, to reduce bias. Next, participants were randomly selected and invited to participate via e-mail. While participants were recruited from different sources and sample vendors, they were collected simultaneously and deposited into a single uniform data set. A total of6355 potential participants were invited via e-mail to complete the online survey. Of these, 5734 were eligible for the study, and 3446 participants agreed to complete the survey. Participants received no financial incentives.

The final data set was weighted within each racial/ethnic group with the 2017 Census American Community Survey (ACS). Once all the data were collected, demographics characteristics were tabulated for each racial/ethnic group and compared with the ACS adult population. For each racial group, weights were added consecutively using a raking algorithm to balance the demographics to match the 2017 ACS overall adult population. The registered voter portion of the sample was derived from a different source to ensure that the respondents were registered to vote and

could be verified on the voter file. Otherwise, they were randomly selected and had randomly distributed demographic characteristics much like the nonregistered portion.

Measures

The 2 dependent variables were (1) any prescription drug misuse and (2) the frequency ofprescription drug misuse, in the past year. Participants were asked, "In the past 12 months on how many days did you use any prescription medications 'recreationally' (just for the feeling, or using more than prescribed)?" These questions were taken from the Substance Use Brief Screen scale.21 Response options were (1) never, (2) 1 or 2 days in the past 12 months, or (3) 3 or more days in the past 12 months. Any prescription drug misuse is defined as engaging in prescription drug misuse at least 1 day in the past year (vs never). Frequency of prescription drug misuse was a 3-category variable based on the original question (i.e., never, 1 or 2 days, 3 or more days).

The primary independent variable of interest was Latinos' relationship to a deported migrant if they reported personally knowing someone who has been deported. Participants were first asked if they personally know someone who was deported. Those who answered yes were then asked to self-report if this was a family member, a friend, or a coworker or community member (participants were only allowed to choose 1 of these options and could not choose multiple answers). Using these data, I characterized participants into 6 mutually exclusive racial/ethnic groups: Whites, Blacks, Latinos who do not personally know someone who has been deported, Latinos who had a family member deported, Latinos who had a friend deported, and Latinos who had a coworker or community member deported.

Important covariates included alcohol use disorder (AUD) and psychological distress. Both of these variables have been associated with prescription drug misuse.14 AUD was measured with the Alcohol Use Disorders Identification Test-Concise (AUDIT-C), which has proven high sensitivity for detecting AUD.22 This measure includes 3 items that ask participants how often they consume alcohol (never, monthly or less, 2 to 4 times a month, 2 or 3 times a week, or 4 times or more a week), how many alcoholic drinks they consume on a typical drinking day (1 or 2 drinks, 3 or 4 drinks, 5 or 6 drinks, 7 to 9 drinks, 10 or more drinks), and how often they consume 6 or more drinks on 1 occasion (never, monthly or less, 2 to 4 times a month, 2 or 3 times a week, or 4 times or more a week). A point is attributed to each response, ranging from 0 to 4. Scores are summed with a possible range between 0 and 12 points. A score of 4 or more for men and 3 or more for women is considered a positive screening for AUD.22

The Patient Health Questionnaire (PHQ4) was used to assess psychological distress. The PHQ-4 consists of4 question-items that assess feelings of nervousness and anxiousness, uncontrollable worrying, disinterest or pleasure in doing things, and sentiments of depression or hopelessness. Participants self-reported the frequency of these sentiments in the past 2 weeks: not at all, several days, more than half the days, or nearly every day. A point is assigned to each response option (ranging from 0 to 3 points) and summed (total possible points: 12). Ascore of3 ormore is characterized as having psychological distress.23 Important sociodemographic characteristics included age, biological sex, marital status, being US-born, highest educational attainment, employment status (full- or parttime vs unemployed), annual household income, and voter registration status (yes vs no). Finally, to assess for US citizenship, participants were first asked if they were born in the United States. Participants who answered "no" were asked they were a naturalized US citizen, have applied for citizenship, were a legal permanent resident, were a visa holder, or other. Participants who reported being US-born or naturalized US citizens were characterized as being US citizens.

Statistical Analysis

I weighted all statistical analyses to adjust for the sampling methods. I conducted analyses with Stata version 15 software (StataCorp LP, College Station, TX). Given the study's objective, I restricted all analyses to US citizens and excluded non-US citizens (n = 164). I first employed descriptive characteristics for our sample, stratifying by race/ethnicity. Next, I conducted multivariate analyses to evaluate how race/ethnicity and Latinos' relationship to deported migrants related to each outcome variable. For the dichotomous dependent variable, any prescription drug misuse, I estimated a logistic regression model. For the categorical dependent variable, frequency of prescription drug misuse, I estimated a multinomial logistic regression model. Both models controlled for sociodemographic

characteristics and covariates. Finally, I replicated these models with only the sample of US-citizen Latinos to evaluate how Latinos' relationship to deported migrants relate to each outcome, using Latinos who do not personally know a deported migrant as the comparison group.

RESULTS

Sample characteristics stratified by race/ ethnicity are presented in Table 1. Overall, half the sample was male and they were on average aged 42 years. The majority were US-born and registered voters, though Latinos were the least likely racial/ethnic group to be registered to vote. White and Black participants were significantly more likely to report not personally knowing a deported migrant than were Latinos. Overall, 39% of Latinos in our sample personally knew someone who had been deported. Among Latinos, 17% had a friend who was deported, 10% had a family member who was deported, and 12% reported knowing a coworker or community member who was deported. In regards to prescription drug misuse, 19% (n = 666) of participants reported misusing prescription drugs in the past year. A higher proportion of Latinos and Blacks reported engaging in prescription drug misuse in the past year than of Whites. Latinos were also more likely to report psychological distress as compared with Whites and Blacks.

Multivariate Regression

Multivariate regression estimates (Table 2) show that Latinos who had a family member who was deported had more than 3 times the odds of reporting past-year prescription drug misuse than did Whites. Latinos who had a friend or a coworker or community member who was deported also reported higher odds of misusing prescription drugs than did Whites. Latinos who did not personally know a deportee and any past-year prescription drug misuse were not statistically different from Whites.

Multinomial Regression

Findings from the multinomial logistic regression models are displayed in Table 3. Model 1 results suggest that Latinos who had a family member who was deported had the greatest risk for misusing prescription drugs. Latinos who had a family member who was deported had 6.05 and 2.64 times the relative risk of misusing prescription drugs 3 or more days and 1 or 2 days in the past year, respectively, as compared with Whites. Having a friend or coworker or community member who was deported was also associated with increased frequencies of misusing prescription drugs. Associations between Latinos who did not personally know a deportee and the frequency of prescription drug misuse were nonsignificant.

Multivariate and Multinomial Regression

Estimates for the multivariate and multinomial regression models among US-citizen Latinos only are presented in Table 4. Findings suggest that compared with Latinos who do not personally know a deported migrant (model 1), Latinos who personally know a deported migrant have higher odds of reporting past-year prescription drug misuse, regardless of their relationship to the deportee. Latinos who had a family member who was deported had the highest odds-more than 5 times the odds-of engaging in pastyear prescription drug misuse relative to Latinos who did not personally know a deportee. Model 2 results suggest that Latinos who had a family member or friend who was deported are at significantly greater risk for misusing prescription drugs at higher frequencies as compared with Latinos who did not personally know a deportee. Latinos who had a family member who was deported had more than 9 times the risk of misusing prescription drugs 3 or more days as compared with Latinos who did not personally know a deportee.

DISCUSSION

This is the first empirical study to investigate the association between the deportation of others (i.e., family members, friends, and coworkers or community members) and prescription drug misuse among US-citizen Latinos. Using current data, this study found that 21% of US-citizen Latinos reported past-year prescription drug misuse. Startlingly, this prevalence is significantly higher than the national average and population-based studies of prescription drug misuse.1,2 However, recent studies have documented that prescription drug misuse and related consequences have been increasing at a faster rate among Latinos than Whites.12 Nonetheless, this finding merits confirmation by future research. In multivariate analyses, personally knowing a deportee was strongly associated with prescription drug misuse among US-citizen Latinos. These are novel findings and have not been previously documented in the

substance abuse literature, to my knowledge. Results highlight the role of deportations as a potentially critical determinant of prescription drug misuse among US-citizen Latinos, which carries important implications for the current prescription drug misuse epidemic.

Specifically, this study showed that UScitizen Latinos who personally know a deported migrant were more likely to report misusing prescription drugs in the past year and at higher frequencies than Whites and Latinos who do not personally know a deported migrant. Alarmingly, US-citizen Latinos who had a family member who was deported were exceedingly at higher risk for prescription drug misuse and misusing at higher frequencies. In US-citizen Latino- only models, these associations were retained, but the strength of the association was much more pronounced. US-citizen Latinos who had a friend who was deported were also more likely to engage in prescription drug misuse and at higher frequencies than Whites and US-citizen Latinos who did not personally know a deportee. These findings are aligned with previous work that has linked the deportation of others, especially family members, to AUD, drug use disorders, and poor mental health outcomes among USt t

It is worth nothing that differences in any past-year prescription drug misuse and the frequency of misuse between US-citizen Latinos who do not personally know a deported migrant and Whites were nonsignificant. Collectively, findings suggest that US-citizen Latinos who have been affected by the deportation of a family member or friend may be at increased risk for prescription drug misuse. The deportation of family members and friends is a traumatizing experience filled with extreme emotional and psychological consequences (e.g., posttraumatic stress, fear and worry, anxiety, depressive symptoms) that extend well after the deportation of an individual.16,18,25 Research has found that individuals may turn to prescription drug misuse to cope with stress, unfair treatment (e.g., discrimination), and negative emotions.26-28 It is likely that stressors stemming from the deportation of family and friends may increase susceptibility to prescription drug misuse as a coping mechanism.

Some limitations should be considered when one is interpreting these findings. The cross-sectional study design does not allow for causal inferences between associations found among prescription drug misuse and the deportation of family and friends. Latino participants may have known more than 1 deportee (e.g., family member and friend); however, the survey did not allow for multiple response options. Though it is likely that participants based their response on their strongest relationship to the deportee (i.e., those who had both a friend and a family member who were deported chose "family member" as their response), we cannot be certain. This is an important limitation given that studies have also found that Latinos with greater number of deportees in their social networks may experience worse health.24 Future studies should consider a longitudinal study design to determine if the deportations of others are influencing the substance-using behaviors of US-citizen Latinos.

Furthermore, given that the original data set was not designed with the purpose to investigate drug use or mental health, data on the types ofprescription drugs that were being misused, reasons for misusing them, and previous history of a mental health or drug use disorder past a 1-year mark, or information on a previous drug overdose were not collected, which would have provided important contextual information. Future studies should explore the relationship between deportations and prescription drug misuse in greater depth.

Lastly, because of the sensitive nature of deportations and substance use, our findings are subject to underreporting bias. However, the survey was completely anonymous and self-administered online, which likely increased feelings of anonymity and reduced social desirability bias. Notwithstanding these limitations, this well-powered and current data set allowed for a comparative analysis ofa significantly timely issue that can be used to inform policies and prevention strategies.

As public health and policy officials continue addressing the prescription drug misuse epidemic, it is critical to consider how immigration enforcement policies may influence this epidemic. Findings from this study, along with the findings from the existing literature, suggest that immigration enforcement policies may be indirectly creating stressful environments for Latinos, regardless of citizenship, and shaping their substance-using behaviors. However, how the deportation of an individual will affect his or her family is rarely considered when migrants are facing deportation. This is extremely concerning given that US-citizen Latinos are closely connected to their migrant counterparts. Continued high rates of deportations have the potential to exacerbate the prescription drug misuse

epidemic in the United States. There is an urgent need for immigration enforcement policies to consider how deportations may affect the health of US-citizen Latinos. Furthermore, tailored interventions for Latinos that address specific stressors stemming from the deportation of family members are needed to curb substance use, prescription drug misuse, and the progression into dependence. >4jPI-l

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Note. The content is solely the responsibility of the author and does not necessarily represent the official views of the National Institutes of Health.

CONFLICTS OF INTEREST

The author has no conflict of interest.

HUMAN PARTICIPANT PROTECTION

The study protocol was approved by the institutional review board of the University of New Mexico. The present analysis is based on de-identified data and, therefore, the institutional review board ofUniversity of Texas Austin required no review or oversight.

Sidebar

Correspondence should be sent to Miguel Pinedo, PhD, 2109SanJacintoBlvd, StopD3700, Austin, TX 78712-1415 (e-mail: mpinedo@austin.utexas.edu). Reprints can be ordered at http://www.ajph.org by clicking the "Reprints" link. This article was accepted December 7, 2019.

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References

REFERENCES

1. Substance Abuse and Mental Health Services Administration. Results from the 2016 National Survey on Drug Use and Health: detailed tables. Rockville, MD: Center for Behavioral Health Statistics and Quality; 2017.

2. Martinez P, Zemore SE, Pinedo M, Borges G, Orozco R, Cherpitel C. Understanding differences in prescription drug misuse between two Texas border communities. Ethn Health. 2019; Epub ahead of print.

3. Moore AA, Karno MP, Grella CE, et al. Alcohol, tobacco, and nonmedical drug use in olderUS adults: data from the 2001/02 National Epidemiologic Survey of Alcohol and Related Conditions. J Am Geriatr Soc. 2009; 57(12):2275-2281.

4. McCabe SE, West BT, Morales M, Cranford JA, Boyd CJ. Does early onset of non-medical use of prescription drugs predict subsequent prescription drug abuse and dependence? Results from a national study. Addiction. 2007;102(12):1920-1930.

5. McCabe SE, Cranford JA, Morales M, Young A. Simultaneous and concurrent polydrug use of alcohol and prescription drugs: prevalence, correlates, and consequences. J Stud Alcohol. 2006;67(4):529- 537.

6. Lankenau SE, Teti M, Silva K, Bloom JJ, Harocopos A, Treese M. Initiation into prescription opioid misuse amongst young injection drug users. Int J Drug Policy. 2012;23(1):37-44.

7. Mateu-Gelabert P, Guarino H, Jessell L, Teper A. Injection and sexual HIV/HCV risk behaviors associated with nonmedical use ofprescription opioids among young adults in New York City. J SubstAbuse Treat. 2015; 48(1):13-20.

8. Burns JM, Martyres RF, Clode D, Boldero JM. Overdose in young people using heroin: associations with mental health, prescription drug use and personal circumstances. Med J Aust. 2004;181(suppl 7): S25-S28.

9. Ahmad F, Rossen L, Spencer M, Warner M, Sutton P. Provisional drug overdose death counts, 2018. Hyattsville, MD: National Center for Health Statistics; 2019.

10. Han B, Compton WM, Blanco C, Crane E, Lee J, Jones CM. Prescription opioid use, misuse, and use disorders in US adults: 2015 National Survey on Drug Use and Health. Ann Intern Med. 2017;167(5): 293-301.

11. Massachusetts Department ofPublic Health. Opioidrelated overdose deaths, all intents, MA residents-demographic data highlights. 2018. Available at: https:// www.mass.gov/files/documents/2018/02/14/opioiddemographic-february-2018.pdf. Accessed September 1, 2019.

12. Bebinger M. What explains the rising overdose rate among Latinos? National Public Radio. May 16, 2018. Available at: https://www.npr.org/sections/healthshots/2018/05/16/609814648/what-explains-the-risingoverdose-rate-among-latinos. Accessed September 1, 2019.
13. Havens JR, Oser CB, Leukefeld CG, et al. Differences in prevalence of prescription opiate misuse among rural and urban probationers. Am J Drug Alcohol Abuse. 2007; 33(2):309-317.
14. Bolton JM, Robinson J, Sareen J. Self-medication of mood disorders with alcohol and drugs in the National Epidemiologic Survey on Alcohol and Related Conditions. JAffect Disord. 2009;115(3):367-375.
15. Penm J, MacKinnon NJ, Lyons MS, Tolle E, Sneed GT. Combatting opioid overdoses in Ohio: emergency department physicians' prescribing patterns and perceptions of naloxone. J Gen Intern Med. 2018; 33(5):608-609.
16. Pinedo M. The impact of deportation policies on the substance using behaviors of US-citizen Latinos. Int J Drug Policy. 2020;75:102605.
17. Allen B, Cisneros EM, Tellez A. The children left behind: the impact of parental deportation on mental health. JChild Fam Stud. 2015;24(2):386-392.
18. Zayas LH, Aguilar-Gaxiola S, Yoon H, Rey GN. The distress of citizen-children with detained and deported parents. J Child Fam Stud. 2015;24(11):3213-3223.
19. Pinedo M, Burgos JL, Ojeda VD. A critical review of social and structural conditions that influence HIV risk among Mexican deportees. Microbes Infect. 2014;16(5): 379-390.
20. Department of Homeland Security. Fiscal year 2017 ICE enforcement and removal operations report. Vol 72017. Washington, DC: Department of Homeland Security; 2018.
21. McNeely J, Strauss SM, Saitz R, et al. A brief patient self-administered substance use screening tool for primary care: two-site validation study of the Substance Use Brief Screen (SUBS). Am J Med. 2015;128(7): 784.e9-e19.
22. Frank D, DeBenedetti AF, Volk RJ, Williams EC, Kivlahan DR, Bradley KA. Effectiveness of the AUDIT-C as a screening test for alcohol misuse in three race/ethnic groups. J Gen Intern Med. 2008;23(6):781-787.
23. Löwe B, Wahl I, Rose M, et al. A 4-item measure of depression and anxiety: validation and standardization of the Patient Health Questionnaire-4 (PHQ-4) in the general population. J Affect Disord. 2010;122(1-2): 86-95.
24. Vargas ED, Juárez M, Sanchez GR, Livaudais M. Latinos' connections to immigrants: how knowing a deportee impacts Latino health. J Ethn Migr Stud. 2018; 45(15):1-18.
25. Gulbas LE, Zayas LH, Yoon H, Szlyk H, AguilarGaxiola S, Natera G. Deportation experiences and depression among US citizen-children with undocumented Mexican parents. Child Care Health Dev. 2016;42(2): 220-230.
26. Cabriales JA, Cooper TV, Taylor T. Prescription drug misuse, illicit drug use, and their potential risk and protective correlates in a Hispanic college student sample. Exp Clin Psychopharmacol. 2013;21(3): 235-244.
27. Gee GC, Delva J, Takeuchi DT. Relationships between self-reported unfair treatment and prescription medication use, illicit drug use, and alcohol dependence among Filipino Americans. Am J Public Health. 2007; 97(5):933-940.
28. Wong CF, Silva K, Kecojevic A, et al. Coping and emotion regulation profiles as predictors of nonmedical prescription drug and illicit drug use among high-risk young adults. Drug Alcohol Depend. 2013;132(1-2): 165-171.

DETAILS

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14 Years Ago/99 Years Ago

Anonymous

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FULL TEXT

Designing Healthier Communities: National Public Health Week 2006

Imagine having the opportunity to redesign your own community. What would you change? How would you plan development so that achieving optimum health would be a priority? Would roads dominate your transportation options?Would housing beclosertojobs,grocery stores, and retail outlets? Would you preserve more parkor farmland?These considerations are paramount to developing communities that can sustain good health. . . . The good news is that while we created today's built environments, we are capable of creating healthier ones. Many communities are beginning to do just that, banding together to create more livable communities with town centers, better public transit, and more bicycle paths, sidewalks, and

From AJPH, April 2006, p. 592.

99 Years Ago

National Health Council Launches An Early Health Week

[The] National Health Council has inaugurated plans for a health week.... This plan is for each community to organize its own committee for this health week, drawing upon the established health and welfare agencies for its health committee members. . . . The activities . . . which have been proposed include . . . special reference to such local problems as water supply, sewage disposal, milk and food control, tuberculosis, venereal diseases, and other problems that may be of special significance to that particular community.... The value of talking health, thinking health, advertising health, urging health, writing health, and pleading for health can result in onlyone thing- practicing health by the communities.

From AJPH, November 1921, pp. 1006-1007, passim.

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Education, Race/Ethnicity, and Causes of Premature Mortality Among Middle-Aged Adults in 4 US Urban Communities: Results From CARDIA, 1985–2017

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ABSTRACT (ENGLISH)

Objectives. To assess causes of premature death and whether race/ethnicity or education is more strongly and independently associated with premature mortality in a diverse sample of middle-aged adults in the United States. Methods. The Coronary Artery Risk Development in Young Adults study (CARDIA) is a longitudinal cohortstudy of 5114 participants recruited in 1985 to 1986 and followed for up to 29 years, with rigorous ascertainment of all deaths;recruitment was balanced regarding sex, Black and White race/ethnicity, education level (high school or less vs. greater than high school), and age group (18-24 and 25-30 years). This analysis included all 349 deaths that had been fully reviewed through month 348. Our primary outcome was years of potential life lost (YPLL). Results. The age-adjusted mortality rate per 1000 persons was 45.17 among Black men, 25.20 among White men, 17.63 among Black women, and 10.10 among White women. Homicide and AIDS were associated with the most YPLL, but cancer and cardiovascular disease were the most common causes of death. In multivariable models, each level of education achieved was associated with 1.37 fewer YPLL (P =.007);race/ ethnicity was not independently associated with YPLL. Conclusions. Lower education level was an independent predictor of greater YPLL. (Am J Public Health. 2020;110:530-536. doi:10.2105/AJPH.2019.305506)

FULL TEXT

Headnote

Objectives. To assess causes of premature death and whether race/ethnicity or education is more strongly and independently associated with premature mortality in a diverse sample of middle-aged adults in the United States. Methods. The Coronary Artery Risk Development in Young Adults study (CARDIA) is a longitudinal cohortstudy of 5114 participants recruited in 1985 to 1986 and followed for up to 29 years, with rigorous ascertainment of all deaths;recruitment was balanced regarding sex, Black and White race/ethnicity, education level (high school or less vs. greater than high school), and age group (18-24 and 25-30 years). This analysis included all 349 deaths that had been fully reviewed through month 348. Our primary outcome was years of potential life lost (YPLL).
Results. The age-adjusted mortality rate per 1000 persons was 45.17 among Black men, 25.20 among White men, 17.63 among Black women, and 10.10 among White women. Homicide and AIDS were associated with the most YPLL, but cancer and cardiovascular disease were the most common causes of death. In multivariable models, each level of education achieved was associated with 1.37 fewer YPLL (P =.007);race/ ethnicity was not independently associated with YPLL.
Conclusions. Lower education level was an independent predictor of greater YPLL. (Am J Public Health. 2020;110:530-536. doi:10.2105/AJPH.2019.305506)

Depending on race/ethnicity, education, and place of residence, Americans experience up to 30-year differences in life expectancy at birth.1-3 These disparities in life expectancy have become a focal point of population-based research and subsequent national initiatives and local interventions.4,5 Despite these efforts, geographic disparities in life expectancy persist and are worsening, especially among middle-aged adults.6 8 Premature mortality is still most prevalent among Black men,9 but it has been rising among middle-aged (aged 45-54 years) White men with low education in recent years.7 Overall, this has resulted in an alarming decline in national life expectancy in 2015, 2016, and 2017 for the first time in decades.10,11

Most previous studies have reported contributors to premature mortality at all ages, but the greatest disparities in premature mortality exist among young and middle-aged adults.12,13 These studies have reported several factors contributing to disparities in life expectancy, including race/ethnicity, education level, income, access to health care, and lifestyle factors.1,2,6,14 However, these factors are highly interrelated and are influenced by, among others, neighborhood segregation, especially in urban areas. As Chetty et al. described, Black and Hispanic children growing up in neighborhoods within the same city have starkly different socioeconomic and health trajectories based on the poverty rates oftheirneighborhoods.15 Thus, untangling the contributions ofrace/ethnicity and socioeconomic status to premature mortality in urban environments is essential. Though a few population-based studies have isolated educational attainment as the strongest predictor of life expectancy after controlling for other socioeconomic variables,1,2 this relationship was still strengthened by the addition of race, suggesting that race has some additional effect.2 While these previous studies have advanced our understanding of the root causes of disparities in

life expectancy, they are limited by their reliance on ecologic analyses using census or other cross-sectional geographically based population estimates, making it difficult to know whether race/ ethnicity or education is the underlying driver of these observations.

The Coronary Artery Risk Development in Young Adults study (CARDIA) is a longitudinal cohort of equally represented Black and White men and women of higher and lower educational attainment who were recruited from 4 urban centers at ages 18 to 30 years.16 Data from this cohort provide a rare opportunity to identify predictors of and causes of premature mortality among Black and White men and women before the age of 60 years. We previously reported large differences in causes of premature mortality by race/ethnicity and sex through 16 years of follow-up. This study goes beyond the year-16 report,17 including up to 29 years of participant follow-up with excellent retention of study participants. Much has changed in the interim years, with advances in medical treatment changing the trajectory of diseases such as HIV/AIDS, and although our cohort has aged, their deaths are still premature. As such, we used a years of potential life lost (YPLL) approach in this analysis. We investigated whether race/ethnicity or educational attainment was more strongly and independently associated with YPLL among Black and White middle-aged men and women. We also assessed which causes of death contributed to greater YPLL. We chose to use YPLL because it is a measure that is easy to comprehend and effectively emphasizes deaths among younger individuals, as in the CARDIA cohort.18

METHODS

CARDIA is an ongoing longitudinal study ofBlack or White men and women designed to identify risk factors for cardiovascular disease and its progression. Details of the study design have been published elsewhere.16 Briefly, the study recruited 5115 participants between the ages of18 and 30 years at baseline in 1985 to 1986. One participant withdrew consent after recruitment, so we excluded that individual's data and used data from the remaining 5114 participants in these analyses. Participants were recruited from 4 field centers across the United States: Birmingham, Alabama; Chicago, Illinois; Minneapolis, Minnesota; and Oakland, California. The sampling protocol was designed to oversample Black participants to obtain at each field center balanced numbers of Black and White men and women, those with a highschool education or less versus more than a high school education, and age group (18 to 24 and 25 to 30 years), resulting in a recruited cohort that is 48% White and 52% Black, with 54% women and 46% men.

Following the baseline examination in 1985 to 1986, field center staff attempted to contact all participants for follow-up clinic visits at years 2, 5, 7, 10, 15, 20, and 25. Participants were followed between examinations via 2 types of interim contacts, with follow-up windows around the participant's baseline examination date. In annual contacts, field center staff obtained data directly from the participant or a designated proxy if the participant could not physically provide data. Various health events and characteristics (e.g., smoking status, diagnosis of diabetes) as well as hospitalizations and specific outpatient treatments (e.g., outpatient revascularization) were collected. Semiannual contacts confirmed contact information and vital status. At this contact, the verification could be obtained from an informant other than the participant (e.g., spouse, parent, roommate, friend), although direct contact with the participant was preferred. If neither a participant nor any of that participant's designated informants could be contacted, we performed a vital status check yearly using various types of resources including various locator search engines, obituary search engines, and the Social Security Death Index. Additional contacts consisted of mailing yearly birthday and winter holiday cards and periodic newsletters with address correction service requested. Finally, National Death Index searches for lost participants were conducted at approximately 5-year intervals. This analysis includes data through the 348-month annual contact, with ascertainment of deaths completed on August 28, 2015, and the most recent National Death Index data available from deaths in 2011. At that time, 92% of the surviving cohort was successfully contacted within the previous 5 years, though some who were unable to be contacted were deceased, but their death records were yet to be adjudicated.

Once field center staffascertained a death, specific records were requested based on the location (e.g., during an admission to an acute care hospital) and the potential cause of death (e.g., potential stroke or coronary heart disease event) according to a detailed protocol. Death certificates were requested for all deaths. Other potential

records included hospital records, autopsy and coroner's reports, or emergency department records, and detailed informant interviews for outpatient (including emergency department) suspected cardiovascular deaths. Two study physicians reviewed all information and assigned cause of death independently by using specific definitions and a detailed manual. The CARDIA Endpoints Surveillance and Adjudication Subcommittee resolved disagreements.
Independent variables included age at baseline, race/ethnicity, sex, educational attainment, and difficulty paying for basic needs. We assessed years of education completed at all follow-up visits, and used education level reported at the most recent examination before death as our primary predictor variable, categorized into ordered, nonoverlapping categories as defined by the original study design: less than or equal to 12 years (high school or less), 13 to 15 years (some college), and 16 years or more (college graduate).16 We used race/ethnicity as Black or White and sex as male or female as self-reported during the baseline examination. We used difficulty paying for basic needs reported during the most recent follow-up examination.
Our dependent variable was YPLL. We calculated YPLL for those who were deceased by subtracting age at death from the average sex-specific national life expectancy at birth during the year of the baseline examination: 71.1 years for men and 78.2 years for women in 1985. We obtained sex-specific life expectancy data from the National Center for Vital and Health Statistics.
We first compared sociodemographic characteristics by vital status by using the t test for continuous variables and the %2 test for categorical variables. We calculated age-adjusted mortality rates by direct standardization among Black and White participants, overall and stratified by sex, education level at baseline, difficulty paying for basic needs, and field center of recruitment.19 We determined whether vital status differed by race/ethnicity within education groups and whether vital status differed by education level within race/ethnicity groups. We used the C test to assess differences among these groups. Next, we assessed underlying causes of death, stratified by race-sex subgroups.
We subsequently estimated multivariable linear regression models to identify independent associations of predictor variables with YPLL. We first estimated a model that included sociodemographic characteristics: age, race/ ethnicity, sex, education level (categorical) at the most recent examination before death, difficulty paying for basics at the most recent examination before death, and the recruiting field center at baseline. We then estimated a model including reported causes of death. We then estimated a combined model, including all variables from the sociodemographic and cause-of-death models. We also tested whether the interaction between race/ethnicity and education was significant in the combined model. For these regression analyses, we excluded data from 46 deceased participants whose cause of death had not yet been fully reviewed.
Because participants who died when younger than 30 years may not have had time to complete higher education, results may be biased to suggest that low education is associated with premature mortality. In our cohort, most participants had achieved their highest level of education by the year-7 examination, with only 1% to 2% reporting a change in education level at each follow-up examination thereafter. As such, we performed a sensitivity analysis with data only from participants alive at age 30 years, and we included their highest level of education completed as of age 30 years. In addition, we performed a supplementary analysis defining YPLL as the participant's expected age at the time ofanalysis to mitigate potential bias from projected life expectancy estimates because we do not actually know how long each participant would have lived if the early death had not occurred.
All reported probability values corresponded to 2-tailed tests, which we considered significant at the a = 0.05 level. We performed all analyses with SAS version 9.4 (SAS Institute Inc, Cary, NC).
RESULTS
Through 348 months of follow-up, 417 deaths had been reported, an overall mortality rate of 81.5 per 1000 persons. Table 1 compares characteristics of living and deceased participants. Compared with living participants, deceased participants were more often men and Black, had lower educational attainment, and more often reported having a hard or very hard time paying for basic needs.
The age-adjusted mortality rate was 30 per 1000 persons among Black participants and 17.25 per 1000 persons among White participants (Table 2). Age-adjusted mortality rates were higher among men compared with women,

those with high-school education or less compared with those with more than a high-school education, and among those recruited from the Birmingham Field Center compared with all other sites. Within categories of highest education level attained, there was no statistically significant difference in vital status by race/ethnicity (Table 3). However, within both Black and White groups, there were differences in vital status by education level. Among both race/ethnicity groups, the high-school education or less group had the highest percentage of deceased and the college graduates the lowest percentage of deceased.

A total of 349 deaths had been fully reviewed for underlying cause of death. Table A (available as a supplement to the online version of this article at http://www.ajph. org) lists cause-specific rates of death by race-sex subgroup. The most common causes of death overall were cancer (16.3%), cardiovascular disease (17.5%), and AIDS (13.5%). The most common cause of death differed by race-sex subgroup, with homicide the most common cause of death among Black men (19.3%), AIDS the most common cause of death among White men (27.8%), and cancer the most common cause of death among Black (23.5%) and White women (31.5%). AIDS contributed 35.4 YPLL and homicide contributed 37.4 YPLL. At our 16-year assessment of mortality, when the cohort was an average age of 41 years, AIDS (28%; n = 35) and homicide (16%; n = 20) were the 2 most common underlying causes of death.17 Since that report, there have been 12 additional deaths from AIDS and 9 additional deaths from homicide. Over the same time period, there have been an additional 48 deaths from cancer, 52 deaths from cardiovascular disease, 17 deaths from unintentional injury, and 9 deaths from suicide.

In our multivariable regression model, age at enrollment, female sex, and educational attainment were independently associated with YPLL (Table 4). Being female was associated with 6.43 greater YPLL (95% confidence interval [CI] = 4.75, 8.12). Attaining 1 additional level of education was associated with 1.37 fewer YPLL (95% CI = -2.37, -0.37). Race/ethnicity was not independently associated with YPLL, and in an otherwise identical model that included an interaction term between race/ethnicity and education, the interaction term was not significant (b = -1.45; 95% CI = -3.44, 0.55). Homicide and AIDS were the causes of death associated with the greatest YPLL. Cardiovascular disease, cancer, and liver disease contributed fewer YPLL than did AIDS (reference group in the model).

Results from our sensitivity analysis, including data only from the 320 participants who were alive at age 30 years, were not substantially different from the primary results (Table B, available as a supplement to the online version of this article at http:// www.ajph.org). Results from our supplemental analysis defining YPLL as years of life lost compared with expected age at the time of analysis also did not differ substantially from our primary results (Table C, available as a supplement to the online version of this article at http://www.ajph.org).

DISCUSSION

In a prospective cohort ofmore than 5000 Black or White young adults recruited at an average age of25 years and followed over the course of 29 years, we found evidence of persistent disparities in premature mortality by race/ethnicity and education. We found key differences in mortality rates and causes of mortality by race/ethnicity, and differences in causes of mortality by stage of life, and we found that education level explained observed differences in mortality by race/ethnicity. Overall, cancer, cardiovascular disease, and AIDS were the most common causes underlying premature deaths, but homicide was the most common cause of premature death among Black men and contributed the most YPLL. Age-adjusted mortality rates were significantly higher for Blacks than for Whites and decreased as educational attainment increased. However, when we examined race and education simultaneously, we found that education-and not race-was associated with premature mortality, with education inversely associated with YPLL. Our study extends previous findings by quantifying racial disparity in premature mortality in terms ofYPLL within a longitudinal cohort of Black and White young adults in the United States and showing that, once education is accounted for, this difference is no longer statistically significant.

The education-related disparity in life expectancy described as persisting and worsening through the 1980 to 2010 decades is thought to be attributable to greater gains in life expectancy for those with high education.1,12,20,21 Studies that used data from nationally representative samples have reported that life expectancy differed by race and education level in years 1980 to 2001, and disparities were greatest among adults younger than 65 years.

Similar to our observations, these studies reported educational disparities within all race groups, and they reported larger differences among Blacks. Education-related disparities widened over the decade between 1990 and 2000,1 and persisted or worsened through the 2000s, especially among White men and women.2,7 Among Whites, the mortality rate increased between years 1999 and 2013, with the greatest increase among those with highschool education or below, resulting in a narrowing of the race-based disparities gap, but for unfortunate reasons (rather than lowlife-expectancy groups improving, high-lifeexpectancy groups worsened).7 Our results provide evidence that these education-based disparities continued well into the 2010s, despite national initiatives to curb disparities in health outcomes and premature mortality.4,22

Two previous studies reported that race has a residual effect on the association of education with life expectancy.1,2 However, we found inconsistent and weak relationships between race/ethnicity and mortality among education subgroups, and in our multivariable models, race/ethnicity was not independently associated with YPLL, and no significant interaction was found between race/ethnicity and education. These discrepancies may be attributable to cohort effects. It is possible that race-based disparities are seen in older cohorts because there were even larger differences in educational quality because of racial segregation among Whites and Blacks born before the 1970s.23 It is also possible that education is the mediator of observed racial disparities in causes of premature mortality among those younger than age 60 years, as in our cohort, and the residual independent effects of race/ethnicity on health and longevity emerge in later years. This is plausible, in that current evidence suggests the long-term impact of Black race on health outcomes is at least in part attributable to the persistent and cumulative negative effects of perceived discrimination.24,25 Persistent discrimination is thought to lead to chronic stress and inflammation, which are risk factors for hypertension, obesity, diabetes, and heart disease, all of which tend to have the greatest impact on mortality later in life.14,25 29

Among our cohort, it appears that these racial/ethnic disparities in cardiovascular disease incidence may be emerging, as 70% of those who have died prematurely from cardiovascular disease were Black. Among our full sample, the most common causes ofdeath overall were cancer, cardiovascular disease, AIDS, homicide, and unintentional injury. Homicide was the most common cause of death among Black men, and deaths from suicide were most common among White men and women, consistent with observed national trends.7 However, we observed shifts in overall dominant causes of mortality since our 16-year assessment from AIDS and homicide toward chronic diseases, specifically cardiovascular disease and cancer. As the CARDIA cohort continues to age and more deaths accrue from chronic diseases like cardiovascular disease, it is possible that a racial/ ethnic disparity in YPLL independent of educational attainment may emerge. However, it remains to be studied whether these potentially emerging racial/ethnic disparities in YPLL from chronic diseases are truly independent of educational attainment or if they are, in fact, mediated by education.

Educational attainment may be indicative of several other psychosocial factors associated with health outcomes. Though we have not examined specific health behaviors, health care access, health beliefs, or other neighborhood factors that might explain these educational disparities in this study, our results support the extensive literature reporting common underlying risk factors over the life course associated with low education that contribute to premature mortality. These factors include behavioral risk factors for heart disease and cancer, such as smoking and obesity, and risk factors for HIV/AIDS, such as condomless sex and needle sharing.30 Furthermore, other social factors such as low neighborhood cohesion and low social support may contribute to youths engaging in violent networks, resulting in higher rates of homicide among young Black men.31-33 Consistent with this hypothesis, both smoking and low social support were found to be independent predictors of mortality in the CARDIA cohort at year 16.17 These findings suggest that local programs should simultaneously address both social and health-related risks to have a meaningful impact in mitigating disparities in health and longevity.

Limitations

Our sample was limited to Black and White adults recruited from 4 urban centers in the United States, so results may not be applicable to other racial/ethnic groups, rural communities, or communities outside the United States. Because participation in our cohort and subsequent follow-up examinations was voluntary, it is possible that those

who participated are more likely to engage in regular medical care. However, less than 20% ofparticipants were lost to follow-up, and the original cohort was 50% of the populationbased sample that was approached. In addition, 46 deaths had not been fully reviewed at the time of the analysis and were excluded from our multivariable regression analyses. Though it is a small number that were lost to follow-up or excluded, it is possible that this group had different rates or causes of death than the group that continues to remain engaged in the study. However, the rates and causes of death we observed were similar to those reported by national cross-sectional samples of US residents of the same age. In addition, though we assessed education and the ability to pay for basic needs as markers of socioeconomic status, there may be other unmeasured markers ofsocioeconomic status that may contribute to residual confounding.

Finally, it is possible our results are biased because our cohort has not yet achieved their expected life expectancy and those who are alive are censored from the YPLL analysis.34 However, we did not limit our analyses to a specific cause of death (a major source of bias in excess YPLL comparisons34), and our exposures of interest were race/ethnicity and education level, which were balanced by the recruitment design of the CARDIA cohort and may mitigate the risk of this potential bias. In addition, we performed a sensitivity analysis using data among participants alive at age 30 years and their education at that time that yielded similar results, suggesting bias attributable to differential exposure did not significantly influence our results. We also performed a supplemental analysis using expected age at the time of analysis to calculate YPLL that did not yield different results, suggesting bias attributable to the fact that the cohort has not yet achieved their life expectancy did not influence our results; however, YPLL will continue to accrue as there are more deaths among this cohort until they reach their projected life expectancy.

Public Health Implications

In a large, longitudinal cohort ofBlack and White middle-aged adults recruited from 4 urban centers, we found evidence of persistent race/ethnicity-related and educationrelated disparities in premature mortality. The relationships among education, race/ethnicity, and socioeconomic status are complex, but we found that education accounts for most of the observed racial/ethnic disparities in our cohort. Taken together with the existing literature that education is a strong determinant of morbidity and mortality,35 these findings have important implications for local policy-makers. City-level policies that support the achievement of equality in educational attainment-for example, increasing affordable housing options and access to high-quality early childhood education- are testable approaches to eliminating observed racial/ethnic disparities in health and longevity.5 /4JPH

CONTRIBUTORS

B. Roy, C. I. Kiefe, D. C. Goff,J. P. Reis, and C. E. Lewis contributed to the conceptual design of the article. All authors assisted in interpretation ofresults. B. Roy drafted and revised the article with critical review and input from all coauthors.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to disclose.

HUMAN PARTICIPANT PROTECTION

The institutional review boards of all participating study centers approved this study. All participants gave written informed consent at each examination.

Sidebar

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References

REFERENCES

1. Meara ER, Richards S, Cutler DM. The gap gets bigger: changes in mortality and life expectancy, by education, 1981-2000. Health Aff (Millwood). 2008;27(2):350-360.
2. Olshansky SJ, Antonucci T, Berkman L, et al. Differences in life expectancy due to race and educational differences are widening, and many may not catch up. Health Aff(Millwood'). 2012;31(8):1803-1813.
3. Robert Wood Johnson Foundation. City maps: short distances to large gaps in health. 2015. Available at: https://www.rwjf.org/en/library/articles-and-news/ 2015/09/city-maps.html. Accessed March 2, 2018.
4. Koh HKA. 2020 vision for healthy people. N Engl J Med. 2010;362(18):1653-1656.
5. Chetty R, Hendren N, Katz LF. The effects of exposure to better neighborhoods on children: new evidence from the Moving to Opportunity experiment. Am Econ Rev. 2016;106(4):855-902.
6. Dwyer-Lindgren L, Bertozzi-Villa A, Stubbs RW, et al. Inequalities in life expectancy among US counties, 1980 to 2014: temporal trends and key drivers. JAMA Intern Med. 2017;177(7):1003-1011.
7. Case A, Deaton A. Rising morbidity and mortality in midlife among White non-Hispanic Americans in the 21st century. Proc Natl Acad Sci USA. 2015;112(49): 15078-15083.
8. Currie J, Schwandt H. Inequality in mortality decreased among the young while increasing for older adults, 19902010. Science. 2016;352(6286):708-712.
9. Harper S, Lynch J, Burris S, Smith GD. Trends in the Black-White life expectancy gap in the United States, 1983-2003. JAMA. 2007;297(11):1224-1232.
10. Xu J, Murphy SL, Kochanek KD, Arias E. Mortality in the United States, 2015. NCHS Data Brief. 2016;(267);1-7.
11. Murphy SL, XuJ, Kochanek KD, Arias E. Mortality in the United States, 2017. NCHS Data Brief. 2018;(328): 1-8.
12. Crimmins EM, Saito Y. Trends in healthy life expectancy in the United States, 1970-1990: gender, racial, and educational differences. Soc Sci Med. 2001;52(11): 1629-1641.
13. Murray CJ, Kulkarni SC, Michaud C, et al. Eight Americas: investigating mortality disparities across races, counties, and race-counties in the United States [erratum PLoS Med. 2006;3(12):e545]. PLoS Med. 2006;3(9):e260.
14. Wong MD, Shapiro MF, Boscardin WJ, Ettner SL. Contribution ofmajor diseases to disparities in mortality. N Engl J Med. 2002;347(20):1585-1592.
15. Chetty R, Friedman JN, Hendren N, Jones MR, Porter SR. The opportunity atlas: mapping the childhood roots of social mobility. Cambridge, MA: National Bureau of Economic Research; 2018.
16. Friedman GD, Cutter GR, Donahue RP, et al. CARDIA: study design, recruitment, and some characteristics of the examined subjects. J Clin Epidemiol. 1988; 41(11):1105-1116.
17. Iribarren C, Jacobs DR, Kiefe CI, et al. Causes and demographic, medical, lifestyle and psychosocial predictors of premature mortality: the CARDIA study. Soc Sci Med. 2005;60(3):471-482.
18. Gardner JW, Sanborn JS. Years ofpotential life lost (YPLL)-what does it measure? Epidemiology. 1990;1(4): 322-329.
19. Curtin LR, Klein RJ. Direct standardization (ageadjusted death rates). Atlanta, GA: Centers for Disease Control and Prevention; 1995.
20. Jemal A, Thun MJ, Ward EE, Henley SJ, Cokkinides VE, Murray TE. Mortality from leading causes by education and race in the United States, 2001. Am J Prev Med. 2008;34(1):1-8.
21. Feldman JJ, Makuc DM, KleinmanJC, CornoniHuntley J. National trends in educational differentials in mortality. Am J Epidemiol. 1989;129(5):919-933.
22. People H, Services H. Healthy People 2010. Vol 1. Washington, DC: US Department ofHealth and Human Services; 2000.
23. Card D, Krueger AB. School quality and Black-White relative earnings: a direct assessment. Q J Econ. 1992;

107(1):151-200.
24. Williams DR. Race, socioeconomic status, and health. The added effects ofracism and discrimination. Ann N Y Acad Sci. 1999;896(1):173-188.
25. Williams DR, Mohammed SA. Discrimination and racial disparities in health: evidence and needed research. JBehav Med. 2009;32(1):20-47.
26. Adler NE, Newman K. Socioeconomic disparities in health: pathways and policies. Health Aff(Millwood). 2002; 21(2):60-76.
27. Kawachi I, Daniels N, Robinson DE. Health disparities by race and class: why both matter. Health Aff (Millwood). 2005;24(2):343-352.
28. Kuzawa CW, Sweet E. Epigenetics and the embodiment of race: developmental origins of US racial disparities in cardiovascular health. Am J Hum Biol. 2009; 21(1):2-15.
29. Mujahid MS, Diez Roux AV, Cooper RC, Shea S, Williams DR. Neighborhood stressors and race/ethnic differences in hypertension prevalence (the Multi-Ethnic Study of Atherosclerosis). Am J Hypertens. 2011;24(2): 187-193.
30. Guh DP, Zhang W, Bansback N, Amarsi Z, Birmingham CL, Anis AH. The incidence of co-morbidities related to obesity and overweight: a systematic review and meta-analysis. BMC Public Health. 2009;9(1):88.
31. Sampson RJ. The neighborhood context ofwellbeing. Perspect Biol Med. 2003;46(3 suppl):S53-S64. 32. Sampson RJ, Raudenbush SW, Earls F. Neighborhoods and violent crime: a multilevel study of collective efficacy. Science. 1997;277(5328):918-924.
33. Riley C, Roy B, Harari N, et al. Preparing for disaster: a cross-sectional study ofsocial connection and gun violence. JUrban Health. 2017;94(5):619-628.
34. Morfeld P. Years of life lost due to exposure: causal concepts and empirical shortcomings. Epidemiol Perspect Innov. 2004;1(1):5.
35. Braveman P, Gottlieb L. The social determinants of health: it's time to consider the causes of the causes. Public Health Rep. 2014;129(suppl 2):19-31.

DETAILS

Subject:	Womens health; Minority &ethnic groups; Public health; Public health education; Acquired immune deficiency syndrome--AIDS; Mortality; Death &dying; Cardiovascular diseases; Cancer; Young adults; Recruitment; Women; Race; Middle age; Ethnicity; Urban areas; Coronary artery; Men; Education; Cardiovascular disease; Adults; Homicide; Black women; Fatalities; Deaths; Socioeconomic factors; Search engines; Educational attainment; African Americans; Life expectancy; Coronary vessels; Variables; Age groups; Secondary schools; White people; Black people; Emergency medical care; Longitudinal studies
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Breakfast in the Classroom Initiative and Students' Breakfast Consumption Behaviors: A Group Randomized Trial

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ABSTRACT (ENGLISH)

Objectives. To identify the effect of a Breakfast in the Classroom (BIC) initiative on the foods and drinks students consume in the morning. Methods. Sixteen public schools in Philadelphia, Pennsylvania, that provide universal breakfast participated in a group randomized trial to examine the effects of BIC with complementary nutrition promotion between 2013 and 2016. Control schools (n = 8) offered breakfast in the cafeteria before school. Baseline data were collected from 1362 students in grades 4 to 6. Endpoint data were collected after 2.5 years. Students self-reported the foods and drinks they consumed in the morning. Results. At endpoint, there was no effect of the intervention on breakfast skipping. Nearly 30% of intervention students consumed breakfast foods or drinks from multiple locations, as compared with 21% of control students. A greater proportion of intervention students than control students consumed 100% juice, and a smaller proportion consumed sugar-sweetened beverages and foods high in saturated fat and added sugar. Conclusions. A BIC initiative led to improvements in the types of foods and drinks students consumed in the morning. However, the program did not reduce breakfast skipping and increased the number of locations where students ate. (Am J Public Health. 2020;110: 540-546. doi:10.2105/AJPH.2019.305511)

FULL TEXT

Headnote

Objectives. To identify the effect of a Breakfast in the Classroom (BIC) initiative on the foods and drinks students consume in the morning.

Methods. Sixteen public schools in Philadelphia, Pennsylvania, that provide universal breakfast participated in a group randomized trial to examine the effects of BIC with complementary nutrition promotion between 2013 and 2016. Control schools (n = 8) offered breakfast in the cafeteria before school. Baseline data were collected from 1362 students in grades 4 to 6. Endpoint data were collected after 2.5 years. Students self-reported the foods and drinks they consumed in the morning.

Results. At endpoint, there was no effect of the intervention on breakfast skipping. Nearly 30% of intervention students consumed breakfast foods or drinks from multiple locations, as compared with 21% of control students. A greater proportion of intervention students than control students consumed 100% juice, and a smaller proportion consumed sugar-sweetened beverages and foods high in saturated fat and added sugar.

Conclusions. A BIC initiative led to improvements in the types of foods and drinks students consumed in the morning. However, the program did not reduce breakfast skipping and increased the number of locations where students ate. (Am J Public Health. 2020;110: 540-546. doi:10.2105/AJPH.2019.305511)

The federal School Breakfast Program (SBP) serves millions of children daily with the goal of providing low-income children consistent access to a nutritious breakfast.1 However, students' rate of participation in the program is lower than desired, with only half of children who participate in the National School Lunch Program participating in the SBP.2 Breakfast in the Classroom (BIC) is a heavily advocated approach to increase participation in the SBP.2 With BIC, schools provide students breakfast in their classrooms at the beginning ofthe school day, replacing the traditional approach of serving breakfast in the cafeteria before school. Schools that implement BIC experience 2- to 4-fold increases in the proportion of students participating in the SBP,3-7 with many of these schools reporting that more than 70% of students participate in the SBP.8,9

Although there is great enthusiasm for BIC, it is not clear whether the initiative helps low-income children regularly consume a healthful breakfast. Few studies of the impact of BIC on children's nutrition exist, and nearly all of these investigations have been observational in design.

Van Wye et al.10 found that children in New York City who were offered BIC were less likely to skip breakfast than those who were not offered BIC. Furthermore, the proportion of students eating breakfast at school was larger in BIC

schools than in schools offering breakfast in the cafeteria, and the proportion of students eating breakfast at home was smaller. Students who consume breakfast at school are more likely to consume fruits and vegetables in the morning than children consuming breakfast at other locations,11 suggesting that shifting breakfast consumption from home to school may have a positive influence on nutrition. However, Van Wye et al. found that, overall, more students in BIC schools consumed multiple breakfasts, and the proportion of students consuming sugar-sweetened beverages, candy, donuts, and chips in the morning was similar whether or not students were offered BIC. In total, children in BIC schools consumed 95 additional kilocalories in the morning.10

Other studies have shown, however, that students participating in BIC consume breakfast foods and drinks of higher nutritional quality than foods offered in the cafeteria, with no differences in energy intake.12,13 In the only previous study to experimentally manipulate exposure to BIC, BIC had no impact on children's dietary intake.7 In summary, the effects of BIC on children's dietary intake are unclear.

Given that schools are increasingly incentivized or mandated to implement BIC,2,14 it is important to understand its nutritional impacts. Therefore, our objective in this study was to conduct a randomized controlled trial testing the effects of an initiative offering BIC with complementary breakfastspecific nutrition promotion activities on children's health, including the types of foods and drinks children consumed in the morning and where these foods and drinks were purchased or prepared. We hypothesized that, relative to students who similarly received free breakfast but were served in the cafeteria before school, the BIC initiative would increase the proportion of students consuming breakfast at school and decrease the proportion ofstudents skipping breakfast. We also hypothesized that a larger proportion of students in intervention schools than control schools would consume a breakfast in line with the SBP nutrition requirements.

METHODS

We conducted a 2.5-year cluster randomized controlled trial in 16 K-8 public schools in Philadelphia, Pennsylvania. All schools in the study implemented universal breakfast programs, with the SBP provided to all students free of charge regardless of 15 income.

Schools were eligible to participate if they met the following inclusion criteria: (1) at least 50% of students in the school qualified forfree or reduced-price meals through the National School Lunch Program based on family incomes at orbelow 130% of the federal poverty level (free meals) or between 130% and 185% ofthe poverty level (reduced-price meals), (2) the school had no existing BIC program or was willing to not offer BIC for the duration of the study if it was randomized to the control condition, and (3) the school had Supplemental Nutrition Assistance Program Education (SNAP-Ed) programming in place as part of the Supplemental Nutrition Assistance Program of the US Department of Agriculture (USDA). The third criterion was used because the intervention involved an education component that complemented existing SNAP-Ed programming.

Among 74 eligible schools, 25 received SNAP-Ed programming from The Food Trust (the community-based nonprofit organization collaborating on this study) and were invited to participate. Nine of these schools declined participation. The remaining 16 schools were similar to other schools in the School District ofPhiladelphia with respect to the percentage of students of minority race/ ethnicity, student enrollments, and the percentage of students qualifying for free or reduced-price school meals. A mean of 89.4% (range = 73.7%-96.2%) of students at the 16 schools were eligible for free or reduced-price meals.

In the spring of 2013, schools were matched into 8 pairs on the basis of student enrollment, racial/ethnic minority student composition, and cafeteria type and were randomized within pairs to one of 2 conditions: (1) the One Healthy Breakfast BIC initiative or (2) universal breakfast offered in the cafeteria before the beginning of the school day without any additional intervention. School administrators were notified of their schools' condition assignments shortly after randomization. All of the participating schools received $1000 at the beginning of each school year to increase engagement and partially compensate for the inconvenience of study staff conducting measurements during the school day.

Student recruitment occurred in September 2013. Research staff visited classrooms to explain the study and distribute parent consent and child assent forms. Interested students returned their completed consent and assent

forms to the school. Students did not receive compensation for their participation. Trained research staff obtained baseline data from students between October and December 2013. Schools randomized to the intervention condition began the intervention in January 2014. The intervention continued for 2.5 school years until June 2016. Midpoint data were collected in May to June 2015 (after 1.5 years ofthe intervention) and endpoint data in May to June 2016 (after 2.5 years). During all data collection periods, students completed briefmeasures in the classroom during a single morning, after school breakfast was offered but prior to scheduled lunches.

Parental consent and child assent were obtained for 1463 of the 2715 eligible students (53.9%; Figure A, available as a supplement to the online version ofthis article at http://www.ajph.org). We excluded 101 students from the analytic sample, yielding a total baseline sample of 1362 students. The percentages ofstudents enrolling in the study did not differ meaningfully between the intervention (n = 639; 46.9%) and control (n = 723; 53.1%) conditions. There was no attrition at the school level during the study. By the endpoint, 793 students (58.2%) remained in the study; 99% of student-level attrition was due to student transfers, and there were no statistically significant differences in student-level attrition according to students' demographic characteristics (Tables A and B, available as supplements to the online version of this article at http://www. ajph.org).

One Healthy Breakfast Initiative

The One Healthy Breakfast initiative was developed and delivered by The Food Trust. The intervention has been described in detail previously,16 and a description ofintervention materials is available online (http://thefoodtrust.org/uploads/media_items/onehealthy-breakfast-toolkit-1.original.pdf). Briefly, One Healthy Breakfast included (1) offering students BIC and breakfast-specific nutrition education (18 lessons over 2.5 years), (2) social marketing to promote consuming a healthy breakfast, (3) marketing at 14 corner stores (less than 0.5 miles from intervention schools) promoting healthier breakfast foods and drinks, and (4) parent outreach via family newsletters (24 newsletters over 2.5 years) and information available at schools' parent events.

At baseline, all schools enrolled in the trial offered the same breakfast menus. However, during the study the foods offered in intervention schools may have differed from those offered in control schools, as some intervention schools offered only cold items while control schools offered both hot and cold items. All breakfasts met USDA regulations regarding meal components and portion sizes, and menus averaged between 450 and 500 kilocalories per week.

Measures

Breakfast consumption behaviors. To identify study outcomes, we used the Breakfast Patterns Survey (BPS) at baseline, midpoint, and endpoint to measure students' food and drink consumption on the morning of data collection. The BPS, developed for use with ethnically diverse, low-income, school-aged children, has previously been used to examine breakfast consumption behaviors associated with BIC.10,17 Children completed the BPS on a tablet computer in their classroom, after school breakfast was provided but before lunch, with the assistance of trained research staff. The BPS first asked "Did you eat/drink anything today?" If students responded no, they were not asked any further questions about food or drinks consumed and were classified as having skipped breakfast. If students responded yes, they were then asked "Did you eat/drink anything today that you got from home?" If they again answered yes, they were asked "What food/drink did you eat today that you got from home?" and instructed to mark all foods that applied from a list of food and drink categories (Table 1).

These question prompts were then repeatedfor3 additional locations: corner store, school cafeteria or classroom, and other. Students were instructed to report all foods and drinks they had consumed that morning and to omit those they had acquired but not yet consumed. Foods acquired in one location and consumed in another location were counted as being consumed in the location where the food was acquired. Children who reported consumption of only water on the morning of data collection were counted as not having consumed breakfast. On average, students spent approximately 5 to 10 minutes completing the BPS. Table 1 demonstrates how food and drink categories on the BPS were summarized for the current analyses. Students were also identified as consuming a breakfast that met the USDA's SBP meal component requirements if they responded that they consumed one of the following: 1 fruit or vegetable, 1 grain, and 1 milk; 1 fruit or vegetable and 2 grains; or 1 fruit or vegetable, 1 grain, and 1 meat ormeat alternative.

Student demographic information and weight status. Data on students' race/ethnicity, gender, birth date, free or reduced-price meal status, and grade level were obtained from the school district at baseline. Students' race/ethnicity, which was based on parents' reports, was categorized as Asian, Black, Hispanic, White, or multirace/other race. Students' weight and height were measured and their weight status calculated according to age- and gender-specific body mass index percentiles.18

Data Analysis

Statistical power was determined for the primary study outcome (incidence of overweight and obesity) at endpoint.16 A minimum sample size of 15 schools with approximately 110 students enrolled per school (n = 1760 students) was needed to detect a risk ratio of 0.70 with a baseline incidence of 30% (assuming an a value of 0.05, a power level of 0.80 or above, and an intraclass correlation coefficient of 0.01 or below). Sixteen schools were recruited to ensure equal numbers of schools per condition and protect against the loss of a school.

Student characteristics, overall and by intervention condition, were assessed via descriptive statistics; SAS version 9.4 (SAS Institute Inc., Cary, NC) was used in conducting these analyses. There were no missing data at the level of randomization (paired schools) at endpoint; however, given the large amount of student-level attrition (42%), occurring nearly exclusively because of students transferring between schools, imputing missing outcome values was not an appropriate strategy.19 Weighted generalized estimating equation (GEE) models with the logit-link function were instead used to evaluate intervention differences in dichotomous outcomes at midpoint and endpoint. Use of weighted GEE models for longitudinal binary outcomes with dropouts missing at random, recommended by Preisser et al.,20 is a conservative extension of GEE to be used when data are presumed to be missing at random (vs missing completely at random).

Therefore, the results presented here are based on students retained in the study at either midpoint (after 1.5 years) or endpoint (after 2.5 years). Missingness models to create observation-level weights were developed after examination of trends in differences in attrition by student demographic characteristics (Tables A and B), as recommended by Salazar et al.21; the R program (R Project for Statistical Computing, Vienna, Austria) was used in creating these models. Data on students' race/ethnicity and free or reducedprice lunch status were used to calculate midpoint weights, and data on students' race/ ethnicity and grade level were used to calculate endpoint weights. Weighted GEE analyses were then conducted via the geepack package in R, with models including a variable indicating study condition and accounting for school-level clustering and paired stratification of randomization. Additional models including the baseline value of each outcome of interest as a predictor were also developed, and the results were very similar to those from models without baseline values included. Also, models aggregating outcomes to the school level were developed as a sensitivity analysis. The results of these models were also very similar to the results presented with respect to direction, magnitude, and statistical significance. Intraclass correlation coefficients for the outcomes within schools were small, ranging from -0.017 for sugar-sweetened beverages to 0.005 for juice at endpoint. Models examining intervention effects on students' vegetable consumption did not converge as a result of students' low intake (e.g., at endpoint, 1%-2% of students consumed vegetables in the morning), and thus the results of these models are not presented. Statistical significance was determined at the 2-sided P level of .05.

RESULTS

On average, students were 10.8 (SD = 1.0) years old, and approximately half (51.4%) were female (Table 2). Two thirds (66.6%) of students self-identified as Black. A total of 78.9% of students qualified for free or reduced-price school meals at baseline, and 21.4% had a body mass index in the obese weight status category. Among the participating schools, median daily participation in the SBP was 18.2% prior to the initiation of the study.

At study endpoint, there were no differences between intervention and control schools in the percentage of students who skipped breakfast (22.9% and 24.2%, respectively; Table 3). A greater percentage of students in intervention schools than control schools consumed breakfast at school at endpoint (44.3% and 13.1%, respectively), and fewer consumed breakfast from home (42.6% vs 57.6%) or a corner store (20.3% vs 25.7%). However, overall, students in intervention schools were more likely to consume breakfast foods and drinks from multiple locations than were

students in control schools (29.1% and 21.2%, respectively). Findings were similar at study midpoint; however, at midpoint, a smaller proportion of students in intervention schools reported skipping breakfast, whereas no differences between conditions were observed with respect to the proportion of students consuming food or drinks from a corner store in the morning.

An examination of the types of foods and drinks students consumed in the morning at endpoint (Table 4) showed that more students in intervention schools (25.4%) than control schools (14.7%) consumed 100%juice on the morning of data collection, whereas smaller percentages of students in intervention schools reported consuming sugarsweetened beverages (10.6% vs 15.6%) and foods high in saturated fat and added sugar (20.9% vs 26.9%). In addition, a higher percentage ofstudents from intervention schools had a food consumption pattern that met the USDA's meal component requirements for school breakfast, although this percentage was low in both conditions (7.1% in the intervention group and 2.0% in the control group). At study midpoint, other improvements were observed in children's morning intake, with higher proportions ofstudents in intervention schools consuming milk, fruit, grain products, and meat or meat alternatives. However, these intervention effects were not sustained through study endpoint.

DISCUSSION

Similar to BIC observational studies,10,13 an intervention that combined BIC with breakfast-specific nutrition promotion activities led to increases in the proportion of students eating breakfast at school and decreases in the proportion of students eating breakfast from home and from corner stores. This shift in sources of food in the morning may have a positive impact on the dietary quality of students' breakfasts.11 Indeed, the intervention prevented the increases in morning consumption of sugar-sweetened beverages and foods high in saturated fat and added sugar observed among students in control schools over time and increased consumption of breakfasts meeting SBP requirements by the end of the study.

However, contrary to our hypothesis, after 2.5 years of implementation, the intervention did not reduce the proportion of students skipping breakfast. Although some students did shift from consuming breakfast from home or corner stores to consuming breakfast at school, more students from intervention schools than control schools were consuming foods from multiple locations. This effect of BIC on the number of locations from which students consume food has also been found in observational BIC studies.10,12,13 Finally, within-school correlations for children's breakfast consumption behaviors were negligible, indicating that students within schools were not more similar with respect to behaviors than students between schools. The reason may be that all of the study schools were in similar neighborhoods and students were served the same or similar meals for breakfast at school.

BIC is widely promoted as a best practice to ensure that low-income children who may not have sufficient access to food at home are able to consume breakfast at school. Although consistent increases in SBP participation are observed among schools offering BIC,8,9,16,22 the lack of a sustained effect of the One Healthy Breakfast initiative on the proportion of students skipping breakfast, which was consistently high at nearly one fifth of children in intervention schools, suggests that BIC may not fully address students' barriers to consuming breakfast. Other researchers have similarly noted that BIC may not have a large impact on the proportion of students skipping breakfast.12 Lack of access to food is only one reason that children skip breakfast; some students may not prefer the foods being served or may not be hungry in the morning.23 Further research regarding why some lowincome children skip breakfast despite access to free meals is important to ensure that children who want to consume breakfast are able to do so.

The sustained increases in the proportions of intervention students consuming a breakfast in line with SBP regulations and consuming 100% juice in the morning were likely driven by students' consumption of school breakfast. The USDA's regulations for food and drinks served as part of the SBP allow 100% juice to be frequently offered to students. Similar but small improvements in the dietary quality of children's breakfasts have been seen in observational studies ofBIC12,13 and among students in schools that increase participation in the SBP by offering universal access to school breakfast.24

Unlike in New York City, where access to BIC is not associated with lower intake of sugar-sweetened beverages and

other energy-dense foods of low nutritional quality,10 the BIC initiative in this study led to fewer students (relative to those in the control group) reporting morning consumption of sugar-sweetened beverages and foods high in saturated fat and added sugar, which aligns with the reported reductions in breakfasts purchased from corner stores at study endpoint relative to the control condition. This difference in findings between our trial and previous BIC observational studies may be attributable to the complementary, breakfast-specific nutrition promotion that was offered in the intervention. At the same time, several of the positive changes in students' diets evident at midpoint no longer existed by endpoint, suggesting that students may have been tiring of the intervention messages or that the BIC initiative may not be as successful with older (middle school-aged) children.

Strengths and Limitations

Our study involved several strengths, including the use of a randomized controlled trial design and a focus on students from high-poverty schools in a dense urban area with numerous opportunities to consume unhealthy foods and drinks in the morning. However, our results need to be considered in light of key study limitations. Students' morning dietary intake was assessed via self-report and reflected intake on a single morning. The BPS was designed for students ofyoung ages to complete easily and captured a wide range of food and drink types but likely measured intake with error. For example, some students may have responded that they did not eat anything in the morning to finish the survey more quickly. Furthermore, the BPS did not measure important qualities of students' eating such as the portion sizes of food and drinks consumed. Future evaluations of efforts to promote children's intake of healthy breakfasts would benefit from repeated, objective observations of dietary intake to more accurately characterize both the types and portion sizes of foods children consume in the morning.

In addition, although our geographic focus was a study strength, it limits the generalizability of our results to suburban and rural areas. Also, there was a large amount of student-level attrition due primarily to school transfer. Our use of weighted GEE models was a conservative approach to addressing these missing data and protecting against selection bias.

Public Health Implications

The SBP is an important program designed to address the nutritional needs oflow-income children. BIC is promoted as a means to reduce the barriers to participating in the SBP, including lack of time and social stigma.23 In the current study, a BIC initiative that included BIC and breakfast-specific nutrition promotion led to improvements in students' breakfast consumption above and beyond universal breakfast, including reducing the proportions of students consuming sugar-sweetened beverages and foods high in saturated fat and added sugar. However, the BIC initiative did not reduce breakfast skipping, one of the primary motivations for implementing BIC; in addition, it led to increases in the number of locations where students obtained food and drinks in the morning and, as reported elsewhere, increases in student obesity.16

Implementing BIC among urban lowincome children may not alleviate all barriers to children consuming a healthy breakfast and is not without unintended consequences. Further consideration is needed of methods to similarly improve students' dietary quality without promoting excessive morning intake.

CONTRIBUTORS

K. W. Bauer drafted the article, and all of the authors critically revised it for important intellectual content. G. D. Foster, A. Davey, S. Sherman, andJ. O. Fishermade substantial contributions to the conceptualization of the article. H.M. Weeks, A. Davey, and K.J. Ruth made substantial contributions to the data analysis. H. M. Polonsky made substantial contributions to acquisition of data. All of the authors made substantial contributions to study design and interpretation of data.

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Note. The study sponsor had no role in study design, data collection or analysis, the writing ofthe article, or the interpretation of results.

CONFLICTS OF INTEREST

G.D. Foster is an employee and shareholder of WW (formerly known as Weight Watchers).

HUMAN PARTICIPANT PROTECTION

This study was approved by the institutional review boards ofTemple University and the School District of Philadelphia. Written parental consent and child assent were obtained.

Sidebar

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References

REFERENCES

1. US Department of Agriculture. School Breakfast Program. Available at: https://www.fns.usda.gov/sites/default/files/sbp/SBPfactsheet.pdf Accessed January 22, 2020.

2. Girouard G, FitzSimons C, Rosso R. School breakfast scorecard: 2017-2018 school year. Available at: http://frac.org/wp-content/uploads/school-breakfastscorecard-sy-2017-2018.pdf. Accessed January 22, 2020.

3. BernsteinLS,McLaughlinJE, CrepinsekMK, DaftLM. Evaluation of the School Breakfast Program Pilot Project: Final Report. Washington, DC: US Department ofAgriculture, Food and Nutrition Service; 2004.

4. Schwaab B, Fettweis C, Caplon M. Increasing student breakfast consumption: an established model in Maryland. Child Obes. 2012;8(2):162-166.

5. Butcher-Powell LM, Bordi PL, Borja M, Cranage D, Cole C. Factors affecting breakfast intake in children. Topics Clin Nutr. 2003;18(2):130-135.

6. Center for Applied Research and Educational Improvement. Energizing the Classroom: Universal School Breakfast Pilot Program. Minneapolis, MN: University of Minnesota; 1998.

7. Moeltner K, Spears K, Yu L. Breakfast at school: a first look at the role oftime and location for participation and nutritional intake. Am J Agric Econ. 2019;101(1):39-57.

8. Anzman-Frasca S, Djang HC, Halmo MM, Dolan PR, Economos CD. Estimating impacts of a breakfast in the classroom program on school outcomes. JAMA Pediatr. 2015;169(1):71-77.

9. Food Research and Action Center. School breakfast in America's big cities: school year 2010-2011. Available at: https://www.leg.state.nv.us/Session/76th2011/ Exhibits/Assembly/HH/AHH447F.pdf. Accessed January 22, 2020.

10. Van Wye G, Seoh H, Adjoian T, Dowell D. Evaluation of the New York City breakfast in the classroom program. Am J Public Health. 2013;103(10):e59-e64.

11. Polonsky HM, Davey A, Bauer KW, et al. Breakfast quality varies by location among low-income ethnically diverse children in public urban schools. J Nutr Educ Behav. 2018;50(2):190-197.

12. Schanzenbach DW, Zaki M. Expanding the School Breakfast Program: Impacts on Children's Consumption, Nutrition and Health. Cambridge, MA: National Bureau of Economic Research; 2014.

13. Ritchie LD, Rosen NJ, Fenton K, Au LE, Goldstein LH, Shimada T. School breakfast policy is associated with dietary intake of fourth- and fifth-grade students. J Acad Nutr Diet. 2016;116(3):449-457.

14. US Department of Agriculture. Healthy, HungerFree Kids Act of2010. Available at: https://www.fns.

usda.gov/school-meals/healthy-hunger-free-kids-act. Accessed January 22, 2020.
15. School Breakfast: Making It Work in Large School Districts- School Year 2011-2012. Washington, DC: Food Research Action Center; 2013.
16. Polonsky HM, Bauer KW, Fisher JO, et al. Effect of a Breakfast in the Classroom initiative on obesity in urban school-aged children: a cluster randomized clinical trial. JAMA Pediatr. 2019;173(4):326-333.
17. Lawman HG, Polonsky HM, Vander Veur SS, et al. Breakfast patterns among low-income, ethnically-diverse 4th-6th grade children in an urban area. BMC Public Health. 2014;14(1):604.
18. Kuczmarski RJ, Ogden CL, Grummer-Strawn LM, et al. CDC growth charts: United States. Adv Data. 2000; 314:1-27.
19. JakobsenJC, Gluud C, WetterslevJ, Winkel P. When and how should multiple imputation be used for handling missing data in randomised clinical trials-a practical guide with flowcharts. BMC Med Res Methodol. 2017; 17(1):162.
20. Preisser JS, Lohman KK, Rathouz PJ. Performance of weighted estimating equations for longitudinal binary data with drop-outs missing at random. Stat Med. 2002; 21(20):3035-3054.
21. Salazar A, Ojeda B, Duenas M, Fernandez F, Failde I. Simple generalized estimating equations (GEEs) and weighted generalized estimating equations (WGEEs) in longitudinal studies with dropouts: guidelines and implementation in R. Stat Med. 2016;35(19):3424-3448.
22. Soldavini J, Ammerman AS. Serving breakfast free to all students and type of breakfast serving model are associated with participation in the School Breakfast Program. JAcad Nutr Diet. 2019;119(7):1142-1149.
23. Bailey-Davis L, Virus A, McCoy TA, Wojtanowski A, Vander Veur SS, Foster GD. Middle school student and parent perceptions ofgovernment-sponsored free school breakfast and consumption: a qualitative inquiry in an urban setting. J Acad Nutr Diet. 2013;113(2):251-257.
24. Crepinsek MK, Singh A, Bernstein LS, McLaughlin JE. Dietary effects of universal-free school breakfast: findings from the evaluation of the School Breakfast Program pilot project. J Am Diet Assoc. 2006;106(11): 1796-1803.

DETAILS

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Why You Should and How You Can Lower Your Chemical Body Burden

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ABSTRACT (ENGLISH)

Why You Should and How You Can Lower Your Chemical Body Burden Sicker, Fatter, Poorer: The Urgent Threat of Hormone-Disrupting Chemicals to Our Health and Future . .. and What We Can Do About It By Leonardo Trasande New York: Houghton Mifflin Harcourt; 2019 Hardcover: 221 pp; $22.00 ISBN-10: 1328553493 ISBN-13: 978-1-328-55349-2

FULL TEXT

Why You Should and How You Can Lower Your Chemical Body Burden Sicker, Fatter, Poorer: The Urgent Threat of Hormone-Disrupting Chemicals to Our Health and Future . .. and What We Can Do About It By Leonardo Trasande New York: Houghton Mifflin Harcourt; 2019 Hardcover: 221 pp; $22.00 ISBN-10: 1328553493 ISBN-13: 978-1-328-55349-2

The subtitle of Sicker, Fatter, Poorer: The Urgent Threat of Hormone-Disrupting Chemicals to Our Health and Future . . . and What We Can Do About It1 leaves no doubt about what it covers: the risks that endocrinedisrupting chemicals (EDCs) pose to our health and what we can-and must-do about them. The title poignantly encapsulates what the author and other experts see as three main risks ofthis nature: diseases, obesity, and the economic bill that we pay to diagnose and treat such personal and social problems.

EDCs are exogenous chemicals that interfere with the actions of hormones and the functioning of body systems controlled by hormones, thereby increasing the risk of adverse health outcomes, including some cancers, reproductive impairment, cognitive deficits, and obesity.2 As carefully explained in the book, EDCs contribute to cause infertility, congenital abnormalities, Alzheimer's disease, Parkinson's disease, metabolic disorders (type 2 diabetes, thyroid diseases), and immunologic, inflammatory, cardiovascular (hypertension, lipid disorders), gynecologic (endometriosis, fibroids), and neurologic (autism and attention disorders) diseases.

The three main parts of the book are "The age of endocrine disruption," "How chemicals hurt," and "Taking action." Although practical advice is provided regardless of the section, the third section focuses clearly on limiting our exposure to pesticides, phthalates, bisphenols (as BPA [bisphenol A]), flame retardants (PBDEs [polybrominated diphenyl ethers], organophosphorus), PFASs (per- and polyfluoroalkyl substances), and metals. Hence, those are the main types of chemicals whose sources and pathways of exposure are explained, along with their toxic effects and ways to prevent contamination. Maybe a bit more could have been said on dioxins and furans, still pervasive in food chains and human bodies.

An original characteristic of the book is its ability to go all the way from the sources ofexposure to the human health and economic consequences of the external and internal contamination from EDCs.3

We need books like this to be better understood in our communities and to promote positive change through public and private policies. And, indeed, one of the strengths of the book is its plain and persuasive language, which is found in many paragraphs and in section titles such as "Following the hormonal clues," "Your voice matters," "How chemicals hurt," "Our dwindling fertility," "Voices above the din," "The dose does not always make the poison," "Our body burden: it's up to you," "Esteban and the mystery of testicular cancer," and "Changing the health care mindset."

EDCs have strong gender features and pose specific gender issues (causes, mechanisms, consequences, solutions)3; these are treated across the book, especially in chapter 6 ("The chemical vulnerability of girls and women"). The negative influences of EDCs on psychological and psychiatric conditions are largely absent, reflecting a regrettable lack of research on these fundamental facets of human well-being. But the strong available knowledge on the adverse effects of some EDCs for intelligence and development is well covered.

There is little prerequisite knowledge for accessing the information in the book: knowing the foundations of human health will suffice to understand virtually all of it. When someone wishes to get more into the technical details, she will need to go outside the book (e.g., through the sources recommended in each chapter). Readers who will benefit

more from the book are those with a keen interest in the topics and questions summarized in the title and subtitle, regardless of their professional subspecialty; this is so because exposure to endocrine disruptors happens throughout life and is influenced by many societal processes (food and food packaging, water, air, electronics, cosmetics, other consumer products), because such exposure occurs in many settings (schools, work, home, general population), and because EDCs influence the health of practically all citizens who health professionals serve.2,3

Often along the book's path, the author invites us to stop at one of the intersections of environmental and social sciences, medicine, policy, and economic history to learn and reflect on past and current stories of human internal contamination.3,4 One such crossroad is "how do we decide when to act?" a good example of Leonardo Trasande's ability to explain how it is feasible to balance scientific evidence and its uncertainties, philosophical and moral principles, and pragmatism in just one powerful idea: quite often the available knowledge is sufficient to act. And in such cases we must act. Ofcourse many ofus love uncertainties and the endless quest for knowledge.2,3,5 But this must not prevent us from acting. On the contrary, it is the very appreciation of scientific knowledge for the benefit of living beings that brings us to change course if knowledge changes.3,5 We have no excuse to not act on the available evidence-except that, as the books regularly analyzes, vested interests often delay positive policies for decades, thus hampering the prevention of human suffering, diseases, the destruction of nature, and economic losses.

PRAGMATISM AND TRUTH

In Trasande's book, pragmatism refers to how we can realistically act, what we can actually do to decrease our contamination from endocrine disruptors and similar compounds; and truth concerns the reasons we have to act. There is pragmatism in this book, and there is truth-and not just because it is both a "how-to book" and a "why book," which it is, but also because ofthe values and beliefs it embodies: both when proposing specific ways to prevent EDCs' harms and when suggesting the reasons to do so.3,5 7

Reflecting on these fundamental issues and the book, it is appropriate to mention a recent piece by M. Bittman in the New York Times Review of Books6 that criticized a book by J. S. Foer, We Are the Weather, because it "is a 'Why?' book." The book review by Bittman ends like this:

Foer writes, "Although it may be a neoliberal myth that individual decisions have ultimate power, it is a defeatist myth that individual decisions have no power at all." That is so true: Individual decisions have power, and despair is an awful option. But individual decisions are limited. Without effective, sane, forward-thinking leadership, the needed change won't happen. "We Are the Weather" is a "Why?" book; what we need are more "How?" books6(p19)

There are many connections between the climate crisis and EDCs, and this paragraph applies perfectly to EDCs and to Trasande's book.

Specifically, I partly agree with Foer, partly agree with Bittman,6 and partly disagree with both. I disagree, first, with the misleading "ultimate" and "no power at all": those who state that individual decisions have ultimate power or that individual decisions have no power at all hold extreme views on the power of the individual; such views distort truth and obstruct positive change. Second, I disagree with Bittman's dichotomy: books can be- and often are-both "why?" books and "how?" books, with different emphases along the why-how spectrum, as appropriate.1,3,5,7, And third, I disagree on the vague "effective, sane, forward-thinking leadership" expression, because what the author rightly misses beyond individual actions has a simple, specific name: policies.

The paragraph by Bittman6 is relevant to Trasande's book because Trasande never suggests that individual decisions have ultimate power nor that individual decisions have no power at all. Rather, like other authors,5,7 Trasande persuades us to think in dialectic, systemic, and nonsimplistic ways on the whys and hows-and their interactions- of individual behaviors, social networks and structures, economic powers, and policies, including public and private regulation. And because such interactions influence so much of public health, such thinking is an additional reason, beyond EDCs, the book is of interest to a large number of health professionals. ÂfPU

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Sidebar
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References
REFERENCES
1. Trasande L. Sicker, Fatter, Poorer: The Urgent Threat of Hormone-Disrupting Chemicals to Our Health and Future . . . and What We CanDo AboutIt. NewYork, NY: Houghton Mifflin Harcourt; 2019.
2. La Merrill MA, Vandenberg LN, Smith MT, et al. Consensus on the key characteristics of endocrine-disrupting chemicals as a basis for hazard identification. Nat Rev Endocrinol. 2020;16(1):45-57.
3. Porta M, Gasull M, Ballester F, eds. Nuestra contaminación interna. Concentraciones de compuestos toxicos persistentes en la poblacion española [Our Internal Contamination. Concentrations of Persistent Toxic Compounds in the Spanish Population]. Madrid, Spain: Libros de la Catarata; 2009.
4. Pumarega J, Gasull M, Lee DH, Lopez T, Porta M. Number ofpersistent organic pollutants detected at high concentrations in blood samples of the United States population. PLoS One. 2016;11(8): e0160432.
5. Porta M. Vive más y mejor reduciendo toxicos y contaminantes ambientales [Live More and Better: Reducing Toxic and Environmental Pollutants]. Barcelona, Spain: Grijalbo; 2018.
6. Bittman M. Meat is murder. But you know that already. Review of We Are the Weather. Saving the Planet Begins at Breakfast by J. S. Foer (New York, NY: Farrar, Straus &Giroux, 2019). NewYork Times Review of Books. 2019. Available at: https://www.nytimes.com/2019/09/ 17/books/review/we-are-the-weatherjonathan-safran-foer.html Accessed December 18, 2019.
7. Demeneix B. Toxic Cocktail. How Chemical Pollution Is Poisoning Our Brains. New York, NY: Oxford University Press; 2017.

DETAILS

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Adverse Childhood Experiences: A Model for Effective 21st-Century Clinical–Community

Partnerships/Comments

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ABSTRACT (ENGLISH)

The recrafting of the American health care system is not for the faint of heart. The existing structures of care represent a $4 trillion enterprise with wellestablished systems of operation, finance, and development. International rankings suggest that the nation could improve outcomes by incorporating social determinants of health into the system's scope of services. Adjusting the existing infrastructure provides both the opportunity for and significant inertia against the expansion of clinical-community collaborations as supported by the US Preventive Services Task Force as useful in providing evidencebased preventive interventions.1

FULL TEXT

The recrafting of the American health care system is not for the faint of heart. The existing structures of care represent a $4 trillion enterprise with wellestablished systems of operation, finance, and development. International rankings suggest that the nation could improve outcomes by incorporating social determinants of health into the system's scope of services. Adjusting the existing infrastructure provides both the opportunity for and significant inertia against the expansion of clinical-community collaborations as supported by the US Preventive Services Task Force as useful in providing evidencebased preventive interventions.1

CLINICAL-COMMUNITY PARTNERSHIPS

The development of clinical-community partnerships is one of the more intriguing strategies ofcontemporary health system reform. The goal of this strategy is to achieve better value in health care through prevention and population health. Its implementation has been enabled by components of the Affordable Care Act that allowed for the development of accountable care organizations and value-based purchasing arrangement, and organizational restructuring, such as the establishment of population health units, in the private health sector health care organizations. This transition of hospitals from islands of care to integrated systems of health can be seen in the expansion of required community health assessments and improvement plans from a clinical focus toward the identification of community resources addressing social determinants of health (i.e., the conditions in which people are born, grow, live, work, and age).

Clinical-community partnerships are generally applicable to social determinants of health: for instance, introducing violence prevention programs in schools, banning soda-vending machines, creating bicycle lanes, or introducing farmers' markets to combat food deserts. But in so doing, strong partnerships should ensure that allies in community and public health organizations are fully engaged.2

ADVERSE CHILDHOOD EXPERIENCES MODEL

Leadership in this evolutionary process of combining clinical and population health can be found in the area ofpediatrics and early childhood development. Emerging from the considerable discussion of brain development in the 1980s and 1990s was the study conducted by the US Centers for Disease Control and Prevention and KaiserPermanente identifying adverse childhood experiences (ACEs) as a factor affecting a child's healthy development.3 Subsequent research, documented by the Child and Adolescent Health Measurement Initiative, has deepened an understanding that ACEs "can lead to trauma and toxic stress and impact children's brain development and physical, social, mental, emotional, and behavioral health and well-being."4 Therefore, the consequences of

ACEs must be the concern of health providers, but asJones et al.5 acknowledged, while describing how clinical practice must appropriately adapt, ACEs also present a fundamental "societal and community challenge." How can this broader challenge be met?

As described by the National Academies of Sciences, Engineering, and Medicine's Roundtable on Population Health Improvement, because "education influences health outcomes and community well-being," it should be "explored how health sector capabilities could be used to help improve educational outcomes from pre-kindergarten through 12th grade."6

A classic principle ofpublic health is that health outcomes are the result ofdirect and indirect contributors of the type that ACEs research has identified. As health systems establish broader community partnerships to address population health goals, the development of clinicalcommunity partnerships involving the educational system to address ACEs can help describe a vision for a population- and community-based 21st-century health system. This challenge should resonate with health system planners, school administrators, policymakers, and community leaders because the clinical-community partnership enabled by a health system-school alliance can address threats to a child's ability to succeed in school and have a successful life.

IOWA CITY SCHOOL DISTRICT APPROACH

One recent local discussion of the potential effect of clinical-community partnerships on ACEs occurred in August 2019 at a roundtable of educational administrators and community representatives from across eastern Iowa and researchers from the University of Iowa. Led by the superintendent of the Iowa City Community School District, the group used information from attendance records, school food programs, and vaccination records, as well as demographic information, to evaluate how the existing kindergarten to 12thgrade data system was being used to develop student programs and infrastructure. School administrators asked how additional health status information, such as ACEs, might be incorporated into these school information systems so that administrators could better identify individual student needs and, at the district level with the use of geomapping, establish school boundaries and develop new resources.

This discussion made clear the importance of clinical-community partnerships. However, it also made clear that there is no easy path forward to a consistent and universal approach to the use of the type of patient- and studentspecific information that surveys such as ACEs and other health assessments might provide. Among the challenges identified were questions about issues such as the following:

* How strong are the infrastructure and governance?
* How could these new partnerships be organized and led?
* How would the systems be set up, and who would carry out the day-to-day work?
* Can categorical confidentiality provisions be overcome to enable patient-centered benefit?
* What will be the metrics, and how will accountability, results, and value be addressed and used in a continuing effort to improve health outcomes?
* What national, state, or other policies will enable the use of data analytics to inform local collaborative practice?
* How will positive change be sustained?

AN OPPORTUNE TIME

In the two decades since the ACEs study,3 ACEs have been firmly established as leading indicators for a range of social, emotional, and physical outcomes, including chronic disease, mental health, and substance abuse. The nation is at an opportune time to address these interconnected priorities as an evolving health care system business model aims at addressing factors leading to poor patient health outcomes. However, the ability of the clinical sector alone to address population health is limited. Involving community organizations, such as schools, through clinical-community partnerships, provides greater opportunities for success, especially for the prevention and mitigation ofthe effects ofACEs.

Advocates for a better American health care system should seize on the best examples of work on ACEs as a model for an inclusive strategy for population health. Perhaps, just as the Flexner report7 set forth a new model for personal health care 110 years ago, the leaders of this century's health care system might establish the standards,

systems, and mechanisms to fully achieve a new vision for the 21st century, one marked by prevention and population health. >4jPI-l

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to disclose.

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REFERENCES

1.OckeneJK, Edgerton EA, Teutsch SM, et al. Integrating evidence-based clinical and community strategies to improve health. US Preventive Services Task Force. April 2019. Available at: https:// www.uspreventiveservicestaskforce.org/ Page/Name/integrating-evidence-basedclinical-and-community-strategies-toimprove-health. Accessed December 14, 2019.
2. Andermann A, CLEAR Collaboration. Taking action on the social determinants ofhealth in clinical practice: a framework for health professionals. CMAJ. 2016; 188(17-18):E474-E483.
3. Centers for Disease Control and Prevention. About the CDC-Kaiser ACE Study. 2019. Available at: https:// www.cdc.gov/violenceprevention/ childabuseandneglect/acestudy/about. html. Accessed December 14, 2019.
4. Bethell CD, Davis MB, Gombojav N, Stumbo S, Powers K. Issue Brief: A national and across state profile on Adverse Childhood Experiences among children and possibilities to heal and thrive. Baltimore, MD: Johns Hopkins Bloomberg School of Public Health; October 2017. Available at: http://www.cahmi.org/ projects/adverse-childhood-experiencesaces. Accessed December 14, 2019.
5. Jones CM, Merrick MT, Houry DE. Identifying and preventing adverse childhood experiences: implications for clinical practice. JAMA. 2019; Epub ahead ofprint.
6. National Academies of Sciences, Engineering, and Medicine. School Success: An Opportunity for Population Health: Proceedings of a Workshop-in Brief. Washington, DC: National Academies Press; 2019. Available at: https://doi.org/10. 17226/25370. Accessed January 10, 2020.
7. Flexner A. Medical Education in the United States and Canada: A Report to the Carnegie Foundation for the Advancement of Teaching (Bulletin Number 4). 1910. Available at: http://archive. carnegiefoundation.org/pdfs/elibrary/ Carnegie_Flexner_Report.pdf. Accessed December 14, 2019.

Gabriel Kaplan Comments

In this issue of AJPH, the editorial by Atchison et al. (p. 450) reminds readers that any consideration of the social determinants of health must make room for strategies to address, prevent, and reverse the lingering health effects that can result from adverse childhood experiences (ACEs).1 Atchison et al. highlight a clinical-community partnership in Iowa between clinicians, educators, and others to do this, but they note the many challenges of governance and infrastructure identified by this initiative. Such challenges should remind AJPH readers of the need to centerpublic health within any attempt to redress deep-seated social problems that would otherwise increase disease prevalence and translate socioeconomic inequities into health disparities.

This editorial has numerous good ideas, and at a time when large segments of the public health community have shown an understanding of the social determinants of health concepts and seem persuaded of their importance, the authors provide the elements of a roadmap regarding how public health can address factors that lead to poor health outcomes with respect to one key upstream factor: ACEs. This is long overdue, because a significant demand exists

across the field for instruction on incorporating this work into current practice.2 Any attempt to follow Atchison et al.'s guidance, however, should integrate several additional points.

Public health organizations are more than just one component of clinical-community partnerships as suggested in the editorial by Atchison et al. The Iowa example highlighted the need to solve key problems of governance and infrastructure, particularly as they relate to data security and privacy. In many states, governmental public health has the legal status to safeguard privacy and also to gather and analyze private health data that many other organizations cannot. It is well poised to play a key convening role in community-based partnerships that marry the health sector to other social service-oriented organizations.3,4

Public health also has a key advocacy and educational role to play in preventing and mitigating exposure to ACEs. Multiple studies have shown that ACEs such as abuse, neglect, and household dysfunction are correlated with poorer health outcomes, but they are not entirely determinative of them either.5 Research shows examples of individuals with high ACEs scores who do remarkably well. Protective factors that increase individual resilience, such as having a caring adult in one's life or developing life skills to cope with setbacks and conflict, help many individuals overcome multiple traumatic and challenging experiences. Much of what is described as neglect in this framework results not from parental indifference but from substantial socioeconomic challenges facing the adults in the household. Although the clinical sector will be a key partner in helping to identify individuals who experienced ACEs and providing support and care to aid recovery, public health must coordinate comprehensive, evidence-based, populationlevel preventive measures that transform the environment by addressing community safety, poverty, and discrimination and that strengthen families by deploying programs that build caregiver skills or foster more nurturing educational environments to support positive child and youth development.

A key risk within the current fascination so many have for work on the social determinants ofhealth is that public health gets bypassed altogether in favor of partnerships between the social sector and clinicians or the education sector and clinicians or that social problems become medicalized by the creation of screening and referral mechanisms within clinical settings. The social determinants of health framework calls for us to consider the relation between macrolevel factors such as poverty, inequality, and discrimination; mesolevel factors such as the levels of economic opportunity in a community, access to safe places to play, and exposure to crime and violence; and microlevel factors such as family dysfunction, allostatic load, and educational experiences. Clinical-community partnerships can operate at all three levels. Primarily, they are more microlevel oriented. But public health can convene local physicians to get involved in meso-community-oriented strategies and to advocate and lobby policymakers for more macrolevel interventions. Only a multilevel approach to these problems will be sufficient to hold back the repeated assaults they can inflict on individual efforts to stay healthy. Only public health is poised to coordinate across these levels and convene partners to direct responses toward problems at each level. ÂfPU

Gabriel E. Kaplan, PhD

CONFLICTS OF INTEREST

The author has no conflicts of interest to disclose.

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REFERENCES

1. Felitti VJ, Anda RF, Nordenberg D, et al. Relationship ofchildhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. Am J Prev Med. 1998;14(4): 245-258.

2. Krisberg K. Are the 10 Essential Public Health Services out of date? Review underway. The Nation's Health. 2020; 49(10):1-16.
3. Office of the Assistant Secretary for Health. Public Health 3.0: A Call to Action to Create a 21st Century Public Health Infrastructure. 2016. Available at: https://www.naccho.org/uploads/ downloadable-resources/Public-Health3.0-White-Paper.pdf. Accessed January 2, 2020.
4. National Association of County and City Health Officials. Public Health 3.0 Issue Brief. December 2016. Available at: https://www.naccho.org/uploads/ downloadable-resources/NACCHOPH-3.0-Issue-Brief-2016.pdf. Accessed January 2, 2020.
5. Bethell CD, Davis MB, Gombojav N, Stumbo S, Powers K. Issue Brief: A National and Across State Profile on Adverse Childhood Experiences Among Children and Possibilities to Heal and Thrive. Baltimore, MD: Johns Hopkins Bloomberg School ofPublic Health; October 2017.Available at: https://www.cahmi. org/wp-content/uploads/2018/05/aces_ brief_final.pdf Accessed January 2, 2020.

DETAILS

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Charity Care Characteristics and Expenditures Among US Tax-Exempt Hospitals in 2016

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ABSTRACT (ENGLISH)

Objectives. To examine content of financial assistance polices (FAPs) among US tax-exempt hospitals and determine whether restrictive policies were associated with reduced charity care spending. Methods. Using hospital tax filings with the Internal Revenue Service in 2016 and FAPs obtained from hospital Web sites, we examined characteristics of FAPs and associated expenditures for charity care in a representative sample of 170 tax-exempt hospitals. We identified common eligibility requirements and used them to define restrictiveness of FAPs. Results. FAPs were characterized by various ways to exclude patients, a patchwork of coverage for typical health care

services, and wide-ranging discounts. FAP expenditures were lowest among restrictive hospitals in states that expanded Medicaid as part of the Affordable Care Act and highest among nonrestrictive hospitals in nonexpansion states. FAP expenses did not differ by hospital restrictiveness alone. Conclusions. Standardizing common eligibility requirements among FAPs carries potential benefits with regard to optimizing charity care for community benefit and achieving at least some level of equity;however, further policy efforts must account for additional restrictions, charges, and exclusions to be effective. (Am J Public Health. 2020; 110:492-498. doi:10.2105/AJPH.2019.305522)

FULL TEXT

Headnote

Objectives. To examine content of financial assistance polices (FAPs) among US tax-exempt hospitals and determine whether restrictive policies were associated with reduced charity care spending.

Methods. Using hospital tax filings with the Internal Revenue Service in 2016 and FAPs obtained from hospital Web sites, we examined characteristics of FAPs and associated expenditures for charity care in a representative sample of 170 tax-exempt hospitals. We identified common eligibility requirements and used them to define restrictiveness of FAPs.

Results. FAPs were characterized by various ways to exclude patients, a patchwork of coverage for typical health care services, and wide-ranging discounts. FAP expenditures were lowest among restrictive hospitals in states that expanded Medicaid as part of the Affordable Care Act and highest among nonrestrictive hospitals in nonexpansion states. FAP expenses did not differ by hospital restrictiveness alone.

Conclusions. Standardizing common eligibility requirements among FAPs carries potential benefits with regard to optimizing charity care for community benefit and achieving at least some level of equity;however, further policy efforts must account for additional restrictions, charges, and exclusions to be effective. (Am J Public Health. 2020; 110:492-498. doi:10.2105/AJPH.2019.305522)

Tax-exempt hospitals are a significant source of health care for uninsured and underinsured patients. Much ofthat health care is provided as charity care through financial assistance policies (FAPs), a community benefit requirement for hospitals with tax-exempt status. Although FAPs comprise only 1 component of the community benefit requirement, they represented 25% of community benefit spending among tax-exempt hospitals in 2009.1 The Affordable Care Act (ACA), passed in 2010 under Section 501(r), added additional requirements to FAPs to ensure that the tax benefits result in commensurate community benefit. These new regulations require FAPs to include provisions such as eligibility criteria, the basis for calculating amounts charged to patients, and the method for applying for financial assistance.2 In 2015, an analysis of compliance with Section 501(r) requirements found implementation to be inconsistent; those authors questioned the willingness of hospitals to expand charity care and noted that the law does not mandate who should be eligible for charity care (i.e., minimum eligibility criteria) or what specific services should be covered.3

Despite insurance coverage gains under the ACA, 12.1% of adults younger than 65 years were uninsured in 2017 and thus were potentially eligible for charity care from hospitals.4 Little is known about how FAPs influence access to care and quality of care because there is no uniform database of patients receiving care under FAPs. Analysis of the community benefit of tax-exempt hospitals has largely focused on factors that influence the pattern of community benefits (e.g., socioeconomic characteristics or state policies1,5-7) and on whether the community benefit is commensurate with the financial benefit of tax-exempt status.8-12 The question offinancial equivalence remains controversial, although data indicate that many hospitals reap tax benefits beyond the charity care they provide.10 State policies that mandate minimum income eligibility or reporting of FAP content beyond federal requirements have shown mixed effects on health care expenditures for patients covered by FAPs.6

Understanding the content of existing FAPs could inform future policy efforts, especially changes to eligibility criteria or expectations regarding services provided. However, comparative analysis ofthe content ofcurrent FAPs is scarce. Information about FAPs now required by Section 501(r) to be made public is often posted online. This requirement offers an opportunity to compare FAPs across hospitals and to consider their impact. We examined the

characteristics of FAPs and expenditures for charity care in a representative sample of tax-exempt US hospitals. We used these findings to draw inferences on whether a uniform standard is developing and whether requiring the same standard of all hospitals would ensure adequate community benefit. We also compared states that did and did not expand Medicaid under the ACA, a significant policy change that has influenced the provision of charity care.13

METHODS

In 2016, there were 2968 nonprofit hospitals and 972 state and local government hospitals in the United States (a total of 3940 tax-exempt hospitals).14 A subset of these hospitals-larger, safety-net hospitals- accounts for a disproportionate share of care to uninsured and Medicaid patients.15 We created a sampling method to select for larger, tax-exempt hospitals with reasonable geographic representation according to the following criteria:

1. the top 50 nonprofit hospitals by gross receipts as obtained through GuideStar, which provides comprehensive information about nonprofit organizations and is available online (https://www.guidestar. org/Home.aspx);
2. the next 50 nonprofit hospitals by gross receipts from the same source, excluding hospitals in states already represented twice in criterion 1;
3. the largest nonprofit or government hospital by bed number in each state, according to the American Hospital Directory online (https://www.ahd.com); and
4. the largest nonprofit or government hospital in 2 separate hospital referral regions in a given state not represented by criteria 1-3; hospital referral regions are defined by the Dartmouth Atlas Project.16

We excluded for-profit institutions but included government hospitals because they are subject to Section 501(r). Using this process, we identified 176 hospitals. We excluded 6 hospitals for which we could not locate FAP information online through the hospital Web site or GuideStar, for a final total of 170. If an organization identified through GuideStar was a multihospital system, we chose the system's largest hospital. The geographic distribution of studied tax-exempt hospitals is shown in Appendix A (available as a supplement to the online version of this article at http:// www.ajph.org). FAPs were downloaded from hospital Web sites in November of 2018.We began the primary content analysis with an iterative review to identify key provisions for comparison of FAP content. Our criteria for including an FAP provision in our primary analysis were the following: (1) generally listed in FAPs, (2) characterized by quantifiable or discrete data, and (3) directly related to eligibility or access to charity care. We excluded provisions required under Section 501(r) related to the process of applying for an FAP, method for notifying potentially eligible patients, catastrophic coverage, and collection activities. With this process, we identified 6 provisions:

1 and 2. income limits based on the federal poverty level (FPL) for free and discounted care (tallied separately),
3. residency requirements,
4. duration of FAP coverage,
5. inclusion of underinsured individuals, and
6. use of presumptive eligibility (i.e., use of patient characteristics suggesting potential financial need, such as homelessness or lack of employment, to shorten the application process).

We then identified cutoff points to establish common standards for comparing charity care expenditures. We considered a given cutoff to be a common standard if used by at least 75% of hospitals. For residency requirement, we chose the most restrictive option, "service area," as the cutoff; this category generally comprised local counties ora group of zip codes. We classified hospitals as "restrictive" if the hospital met 2 or more of the following criteria: income limit for free care less than 200% FPL, income limit for discounted care 250% or less FPL (if the FAP did not include an income limit for discounted care, we used the income limit for free care), residence requirement limited to immediate service area, no presumptive eligibility, and no underinsured eligibility. We also classified a hospital as restrictive ifits FAP only covered emergency care. If a given provision was not specified by an FAP, we did not include it in the restrictive count.

For financial comparison, we report expenditures on FAPs and total charity care as a percentage of total expenses; both are included on Schedule 990 Internal Revenue Service (IRS) forms available on GuideStar. Total charity care (according to federal regulations) includes FAP expenditures and the unreimbursed costs of providing care to

patients in means-tested programs, primarily Medicaid. To assess the impact of Medicaid expansion policies on FAP expenditures, we compared charity care in states that did and those that did not expand Medicaid under the ACA as of 2016,17 the latest year for which financial data are available on GuideStar.

We compared free and discounted care income cutoffs and charity care expenditures using an independent t test with a 2-tailed P value set at an a of 0.05. We conducted analyses in StataSE 14.2 (StataCorp LP, College Station, TX).

Finally, we examined FAP content that is not easily quantified because of vague language, inconsistent reporting, or nondiscrete data. Two clinically active authors (C. W. G., a physician; A. F., a social worker) identified nonquantifiable themes in hospitals' descriptions of FAPs and selected themes with compelling implications for patients.

RESULTS

The 6 FAP eligibility provisions that met our inclusion criteria for the primary content analysis are listed in Table 1. Income cutoffs for free and discounted care nearly universally incorporated FPL guidelines. The free care cutoff was generally 200% FPL or higher, and the discounted care cutoff was generally 250% to 400% (median of 400% FPL); more than 80% of hospitals met these thresholds. Duration of coverage varied; the most common was 6 months (36.4%). Most hospitals incorporated presumptive eligibility (75.8%) and allowed the underinsured to be considered for charity care (86.7%). The most common residency requirement was proof of residence in the hospital's service area (28.5%).

FAP criteria are compared between expansion and nonexpansion states in Tables 1 and 2. Among hospitals for which we could determine valid discounted care income cutoffs, differences between expansion and nonexpansion states were statistically significant (P = .04). No other comparisons of the FAP criteria in Table 1 were statistically different. Average discounted care income cutoffs were higher in Medicaid expansion states (402% vs 359%; P = .01; Table 2); however, average free and discounted care income cutoffs as a percentage ofstate median income were nearly equivalent in expansion and nonexpansion states (Table 2).

Charity Care Expenditures

We classified 44 (26%) hospitals as restrictive, 39 based on common standards and 5 based on FAP inclusion of emergency care only. FAP expenditures as a percentage of total expenses, shown in Table 3, did not differ between hospitals with restrictive versus "nonrestrictive" FAP income cutoffs (1.63% vs 1.94%; P = .30). Similarly, overall charity care expenditures, which include the unreimbursed costs of Medicaid, were similar in restrictive and nonrestrictive hospitals (5.85% vs 5.73%; P = .81). Hospitals in Medicaid expansion states spent less on FAP recipients than did hospitals in states without Medicaid expansion (1.19% vs 3.32%; P< .01; Table 3) but similar amounts for total charity care (5.70% vs 5.90%; P = .69).

The combined effects of Medicaid expansion and FAP restrictiveness are shown in Figure 1. FAP expenditures were lowest among restrictive hospitals in expansion states and were highest among nonrestrictive hospitals in nonexpansion states. Within each Medicaid status (i.e., expansion and nonexpansion), restrictive and nonrestrictive hospital FAP expenses did not differ statistically. In expansion states, restrictive and nonrestrictive hospitals allocated 0.82% and 1.31%, respectively, to FAP expenses (P = .05); in nonexpansion states, the corresponding values for restrictive and nonrestrictive hospitals were 2.85% and 3.58% (P = .14). Strikingly, FAP expenditures as a proportion of total hospital expenditures were virtually identical-just below 6%-across the 4 combinations of restrictive and nonrestrictive and expansion and nonexpansion.

Descriptive Content Analysis

FAPs contained other provisions and information, most often based on federal and state regulations, that were not amenable to quantitative comparisons because of vague language or variable reporting. These items included definitions of "medically necessary," additional financial eligibility requirements, copays and FAP application fees, and other state or local policies. We have organized these items into the following 4 themes.

The "option of last resort. " Hospitals generally considered the provision ofcharity care as-in the words of 1 FAP-an "option oflast resort." FAPs often included language about the need to apply for other means of funding as a

condition for receiving financial assistance. A common phrase among FAPs was that FAP coverage is "not a substitute for personal responsibility." Most hospitals were willing to provide FAP coverage to indigent patients with insurance such as Medicaid (Table 1, underinsured eligibility), but FAPs usually included language that stated or implied that hospitals will apply discounts after other funding sources were pursued.

Hospitals also typically withheld discounts until requested documentation, including personal financial resources, were submitted. It was unclear how hospitals defined inadequate compliance with providing documentation and how often this was invoked to deny care. This documentation was not insignificant; it was often required multiple times per year and may include pay stubs, bank accounts, retirement accounts, and other assets, along with the requirement to apply for other funding sources. Therefore, "option of last resort" language applied not only to seeking alternative funding sources but also to exhausting personal financial resources.

Asset assessments. Section 501(r) gives hospitals multiple options with regard to assets in determining financial eligibility. Nearly all hospitals in our sample used income cutoffs based on the FPL, but assets were also commonly used. However, it was difficult to compare asset requirements across hospitals because FAPs do not necessarily specify eligible assets or how they were used to determine eligibility.

When specified, typical assets were land, residences, vehicles, savings accounts, and retirement accounts. Cutoffs were wide ranging. Some hospitals excluded primary residences or vehicles, but others were not so generous. When exact thresholds were specified, several hospitals denied patients charity care if liquid assets were greater than $10 000. Some hospitals were even more austere, denying charity care for assets in the $1000 to $3000 range. One hospital denied charity care if burial assets were greater than $1500.

Included and excluded services. According to Section 501(r), FAPs must cover medically necessary services, but interpretations of medically necessary varied widely. Some FAPs were more inclusive, incorporating primary care, specialty care, laboratory services, and drug costs. By contrast, some FAPs chose a narrower interpretation, the most extreme of which was emergency care only.

Covered professional services were similarly variable. Section 501(r) requires that lists of included and excluded providers be maintained and available to patients. FAPs are required to include "substantially related entities," a designation that is difficult to interpret given the complex relationships between hospitals and their physician provider groups. This statutory language does not result in a uniformly operable definition, and exclusions were common. Typically, hospital-employed physicians were covered; however, various combinations of anesthesiologists, pathologists, radiologists, and emergency physicians-groups that typically provide professional services during hospitalizations-were often excluded. Such exclusions likely reflect the fact that hospitals often establish contracts with private physician groups for certain specialty services; these groups may or may not have separate plans for providing charity care.

Because most FAPs used nonspecific language regarding coverage, it was difficult to determine which specific services might be covered. The average FAP appears to be intended to cover some portion of a hospital stay and short-term postdischarge care (i.e., general outpatient care) with limitations on specialty care and professional services. Although certain services were often excluded explicitly (e.g., organ transplantation, bariatric surgery, and cosmetic surgery), these services apply to only a small portion of patients. In a few cases, exclusions are potentially problematic; examples include care related to self-injury, alcohol-related diagnoses, and injury with a workers' compensation case pending.

Copays and discounts. Discounts as part of sliding scale coverage under FAPs were often not specified or were described in relation to mandatory caps on charges under Section 501(r), the "amounts generally billed"; these are hospital-specific charge adjustments based on the hospital's expected insurance reimbursement. When reported, discounts were widely disparate. Some hospitals discounted close to 100% of charges, and others framed the mandatory maximum charge of amounts generally billed as discounted care. Most hospitals did not report their amounts generally billed rate, although among those that did, the discount varied from 6% to 89%. Hospitals generally restricted the mandated discount of amounts generally billed to FAP-eligible patients (self-pay discounts for those ineligible for financial assistance were rarely specified; when specified, they ranged from 0% to 88%).

Copays, deductibles, and deposits to complete the application process were variable and common, even among plans with "free" care. As an example, 1 hospital specified that its FAP application required a $100 deposit and another only discounted balances above $300.

DISCUSSION

In our study of 170 geographically representative US hospitals, several characteristics of FAPs were particularly notable. First, although most hospitals used some combination of income and residency to determine eligibility for FAPs, exact requirements conferring eligibility varied considerably across hospitals. Additionally, hospitals varied substantially in the extent to which they used assets (in addition to income) to determine eligibility and in the amounts and types of assets involved in determining eligibility. Burdensome documentation requirements to prove eligibility (at least twice a year, on average) are likely further barriers to care.

Second, the scope of covered hospital services for patients on FAPs was often unclear. There is no widely accepted definition of "medical necessity," a federal requirement for FAPs, and thus hospitals have latitude in what they choose to include or exclude from coverage. On average, FAPs covered some portion ofhospital-based care and short-term outpatient follow-up. Online listings of covered physician services, although a step forward, are not practical for use by patients during health crises. The narrowest coverage occurred in the 5 hospitals that limited charity care to emergency care only-a practice that certainly deserves attention from policymakers.

Third, FAPs, despite ostensibly being a method to provide charity care for the poor and uninsured, varied widely in reported discounts and charges. FAP language suggested that patients might be required to spend savings or liquidate assets during the application process to begin receiving discounted care. Discounts (including amounts generally billed) varied from 6% to 100%, although exact discounts were inconsistently reported. "Free" care, although often framed as free, at times included additional charges. The frequency of this practice was unclear.

Fourth, although hospitals varied in how restrictive or liberal their eligibility cutoffs appeared to be, the proportion of expenses represented by total charity care were similar across hospitals regardless of FAP restrictiveness or Medicaid expansion. FAP expenditures were lower among hospitals in expansion states, especially those with restrictive FAPs; however, these hospitals "spent" more on patients with Medicaid, an allowable charity care expense attributable to reimbursement shortfalls. These findings, along with the variable eligibility restrictions, suggest that hospitals adjust charity care expenditures in response to external factors such as payer mix, local sociodemographics, and state policies-perhaps with a predetermined financial target.

Overall, the vague language, extensive restrictions, and burdensome documentation requirements common to FAPs likely contribute to significant variation in eligibility, types of services available, and the amount of discounted care, even between superficially similar FAPs. As a matter of equity in providing a reasonable minimum level of health care, nationwide standardization of FAPs seems appropriate. Common eligibility requirements identified in our survey and specification of required covered services would be good starting points for standardization.

States have begun to experiment with policies to further standardize charity care provided by nonprofit hospitals with mixed success. For example, Illinois is among a few states that have chosen to implement eligibility standards.18 Although the 7 Illinois hospitals in our survey had similar eligibility requirements-and none were restrictive- total FAP spending varied from 0.94% to 3.04%, with 4 hospitals below the average for all hospitals. Another approach in Texas mandated a minimum percentage ofexpenses on charity care. The result was an increase in charity care at certain underperforming hospitals, but the law did not increase charity care overall.19

The ACA has made much of our analysis possible, given the consistent online publication of FAPs and general use of basic eligibility requirements. The impact on the provision of charity care, however, is less clear. FAPs among hospitals in Medicaid expansion states are, at best, modestly more inclusive than are those in nonexpansion states despite ostensibly having fewer uninsured people. Furthermore, the limitations in FAPs we have described, such as coverage exclusions and documentation requirements, appeared to be common across all hospitals, although a lack of specificity precluded further analysis with regard to the effects of Medicaid expansion.

Our analysis suggests that standardization efforts should focus not only on typical eligibility thresholds but also on limiting the variety of exclusions and charges common to FAPs currently. Additional reporting requirements of FAPs,

such as percentage of denials or specific discounts, could enhance transparency and inform future policy efforts.
The consequences of hospital restrictions in FAP eligibility deserve further exploration. For the individual, medical expenses that exceed ability to pay can be financially and physically devastating and are still quite common.20,21 Hospitals are not required to provide discounts to patients not covered under FAPs, and our analysis suggests that hospitals can find various ways to exclude patients from FAP coverage. Ultimately, many of these concerns could be mitigated substantially if a comprehensive national health program with guaranteed access was enacted.
Some have argued that policymakers should encourage a shift in the community benefit to reflect a broader approach to health, incorporating "community-building" and public health activities rather than focusing on direct care.22 Although well intentioned, given the limited oversight of community benefit activities as well as cost shifting apparent in charity care spending, such an approach could lead to higher charges and reduced services for uninsured patients. Policymakers must determine whether the tax benefits for tax-exempt hospitals can be directed toward addressing public health needs while maintaining equitable access to medical care.

Limitations

We acknowledge several limitations in this study. First, our analysis of FAPs among a sample of tax-exempt hospitals might not adequately reflect FAPs across all tax-exempt hospitals. However, because our sampling method selected larger, mostly safety-net hospitals, we believe that our analysis is relevant to a large proportion of vulnerable patients. Second, reporting expense data is complex. We relied on IRS data regarding FAP and total charity care expenditures as a percentage of expenses. This does not include bad debt and it also includes offsetting funds, both of which might affect our financial analysis. In addition, the current trend of hospital mergers and acquisitions can make analysis of individual hospitals challenging because some hospital systems report aggregate data across the health system. Finally, IRS data (from 2016) and FAPs (reviewed in November 2018) may not be precisely contemporaneous because of inconsistent notation in FAPs of original effectiveness dates and duration; however, hospitals do not appear to substantively change FAPs from year to year.

Conclusions

Tax-exempt hospitals provide substantial charity care in our health care system, with legal requirements enumerated in the ACA and regulated by the IRS. Standardizing common eligibility requirements among FAPs, as some states have already done, carries potential benefits with regard to optimizing charity care for community benefit and achieving at least some level of equity; however, our analysis suggests that further policy efforts must account for additional restrictions, charges, and exclusions to be effective. Further efforts by federal policymakers regarding tax-exempt hospitals should focus on standardization, transparency of community benefit, and limitations to exorbitant charges. /4JPI-I

CONTRIBUTORS

C. W. Goodman and A. Flanigan collected data. J. C. Probst analyzed statistical data. A. S. Brett provided editing. All authors significantly contributed to writing the article and interpreting the findings.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

HUMAN PARTICIPANT PROTECTION

No protocol approval was necessary because no human participants were involved in this research.

Sidebar

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References

REFERENCES

1. Young GJ, Chou CH, AlexanderJ, Lee SD, Raver E. Provision of community benefits by tax-exempt US hospitals. N Engl J Med. 2013;368(16):1519-1527.
2. US Department of the Treasury, Internal Revenue Service. Financial assistance policy and emergency medical care policy-Section 501(r)(4). 2014. Available at: https://www.irs.gov/charities-non-profits/financialassistance-policy-and-emergency-medical-care-policysection-501r4. Accessed January 3, 2020.
3. Nikpay SS, AyanianJZ. Hospital charity care-effects of new community benefit requirements. N Engl J Med. 2015;373(18):1687-1690.
4. Keith K. Two new federal surveys show stable uninsured rate. 2018. Available at: http://www.healthaffairs.org/do/10.1377/hblog20180913.896261/full. Accessed January 3, 2020.
5. Camic Tahk S. Tax-exempt hospitals &their communities. Columbia Journal of Tax Law. 2014;6(33). Available at: https://ssrn.com/abstract=2491389. Accessed January 3, 2020.
6. Singh SR, Young GJ, Loomer L, Madison K. Statelevel community benefit regulation and nonprofit hospitals' provision of community benefits. J Health Polit Policy Law. 2018;43(2):229-269.
7. Principe K, Adams EK, Maynard J, Becker ER. The impact of the individual mandate and Internal Revenue Service Form 990 Schedule H on Community Benefits From Nonprofit Hospitals. Am J Public Health. 2012; 102(2):229-237.
8. Rubin DB, Singh SR, Young GJ. Tax-exempt hospitals and community benefit: new directions in policy and practice. Annu Rev Public Health. 2015;36: 545-557.
9. Singh SR. Community benefit in exchange for nonprofit hospital tax-exemption: current trends and future outlook. J Health Care Finance. 2013;39(3):32-41.
10. Herring B, Gaskin D, Zare H, Anderson G. Comparing the value of nonprofit hospitals' tax-exemption to their community benefits. Inquiry. 2018;55:1-11.
11. Nicholson S, Pauly MV, Burns LR, Baumritter A, Asch DA. Measuring community benefits provided by for-profit and nonprofit hospitals. Health Aff (Millwood). 2000;19(6):168-177.
12. Cramer GR, Singh SR, Flaherty S, Young GJ. The progress ofUS hospitals in addressing community health needs. Am J Public Health. 2017;107(2):255-261.
13. Dranove D, Garthwaite C, Ody C. Uncompensated care decreased at hospitals in Medicaid expansion states but not at hospitals in nonexpansion states. Health Aff (Millwood). 2016;35(8):1471-1479.
14. American Hospital Association. Fast facts on US hospitals. 2019. Available at: https://www.aha.org/statistics/fast-facts-us-hospitals. Accessed January 3, 2020.
15. Sutton JP, Washington RE, Fingar KR, Elixhauser A. Characteristics ofsafety-net hospitals, 2014. 2016. Agency for Healthcare Research and Quality Statistical Brief 213. Available at: http://www.hcup-us.ahrq.gov/reports/statbriefs/sb213-Safety-Net-Hospitals-2014.pdf. Accessed January 3, 2020.
16. Dartmouth Institute for Health Policy and Clinical Practice. Dartmouth atlas of health care. Available at: http://www.dartmouthatlas.org. Accessed January 3, 2020.
17. Kaiser Family Foundation. State health facts: status of state action on the Medicaid expansion decision. Available at: https://www.kff.org/health-reform/state-indicator/ state-activity-around-expanding-medicaid-under-theaffordable-care-act/?currentTimeframe=0&sortModel= %7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D. Accessed January 3, 2020.
18. Nelson GD, Tan B, Mueller CH. Community Benefit State Law Profiles. Baltimore, MD: Hilltop Institute, UMBC; 2015.
19. Kennedy FA, Burney LL, Troyer JL, Stroup JC. Do non-profit hospitals provide more charity care when faced with a mandatory minimum standard? Evidence from Texas. J Account Public Policy. 2010;29(3):242258.
20. Dobkin C, Finkelstein A, Kluender R, Notowidigdo MJ. The economic consequences of hospital admissions. Am Econ Rev. 2018;108(2):308-352.
21. Himmelstein DU, Lawless RM, Thorne D, Foohey P, Woolhandler S. Medical bankruptcy: still common despite the Affordable Care Act. Am J Public Health. 2019; 109(3):431-433.

22. James J. Health policy brief: nonprofit hospitals' community benefit requirements. Health Aff. 2016. Available at: https://www.healthaffairs.org/do/10.1377/ hpb20160225.954803/abs. Accessed January 3, 2020.

DETAILS

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Trying Times: Waiting to Learn What Is Happening Now in American Premature Mortality

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ABSTRACT (ENGLISH)

Over time, the effect of social and health policies across populations, including multiple racial/ethnic groups, can be especially challenging to track. Long latency periods between shifts in health care delivery, broad environmental exposures, and outcomes including mortality often limit the inferences one can draw from what become complex observational studies of health.

In this issue of AJPH, Roy et al. (p. 530) present mortality data after 32 years of follow-up in the Coronary Artery Risk Development in Young Adults (CARDIA) study to offer insights in health trajectories relative to race/ethnicity, education, and common chronic health conditions. Overall, 5115 participants enrolled in 1985 to 1986 as young adults (aged 18-30 years; mean age = 25 years) in four diverse American locations: Birmingham, Alabama; Chicago, Illinois; Minneapolis, Minnesota; and Oakland, California. On the basis ofyears ofpotential life lost, the primary findings identified important differences in mortality rates and causes of mortality, by race/ethnicity and education, and supported education as an explanatory variable for racial/ ethnic differences in mortality.

FULL TEXT

Over time, the effect of social and health policies across populations, including multiple racial/ethnic groups, can be especially challenging to track. Long latency periods between shifts in health care delivery, broad environmental exposures, and outcomes including mortality often limit the inferences one can draw from what become complex observational studies of health.

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education, and supported education as an explanatory variable for racial/ ethnic differences in mortality. Fundamentally, this serves as a follow-up to an earlier report on the cohort's mortality after 16 years of follow-up.1 From the 1985 to 1986 enrollment period through 2001, predictors ofearly mortality then included male sex, Black race, diabetes, liver and kidney disease, cigarette smoking, low education level, and other factors relating to social distress. The original sampling strategy for CARDIA created a cohort with 40% completing 12 years of education or less, balanced across racial/ ethnic groups. Relatedly, education in CARDIA did not have a specific effect on one race/ethnicity over another; an overrepresentation of mortality was found in low education groups in both non-Hispanic Black and non-Hispanic White cohort members. Through 2001, 55.1% of the deceased and 39.3% ofthe living cohort members had completed 12 years of education or less. Currently, after 32 years of follow-up, the cohort has gradually become more educated, with 21.0% overall having a high school education or less. Yet the absolute differences in mortality were similar: by 2017,36.3% of the deceased had a high school education or less, compared with 19.7% of the living, supporting a lasting effect of education on mortality across the life span.

CONFOUNDING DEATH

Interestingly, this updated analysis offers a window into shifts in mortality from early to mid adulthood. Perhaps as expected, some changes in mortality reflect changes in disease exposures in different stages of life, as well as changes in disease incidence and prevalence over time. With most of the cohort now aging into their sixth decade of life, cancer and cardiovascular disease have jumped to the top two causes of death, constituting 33.8% of all deaths, an increase from 15.0% after the 16-year follow-up. At that time in 2001, the two leading causes of death in the cohort were AIDS and homicide. Taking a deeper look into each of those two diseases is informative. Of the 47 AIDSrelated deaths now identified after 32 years of follow-up, 35 of these had occurred through 2001, by which time 127 cohort members had died. Thus, 27.6% of deaths in the initial follow-up period were due to AIDS, but since 2001, only 12 (5.4%) of the subsequent 222 deaths with known cause were due to AIDS. This shift in mortality reflects a cohort that has been followed up through nearly the entire arc of AIDS, from the first description of HIV and its initial treatments to its current state as a potentially manageable chronic disease. Despite the passage of time, in both the 16- and the 32-year follow-up reports, AIDS remained the most common cause of death for White men (50.0% through 2001 and 27.8% through 2017), and homicide remained the most common cause of death for Black men (28.8% through 2001 and 19.3% through 2017, by which time mortality due to homicide and cardiovascular disease became equal). Clearly, stark differences in mortality causes and rates by race/ethnicity persist, with shifts by stage oflife and age (Figure 1).

In the current CARDIA study, education is considered an explanatory variable or mediator in relations between race/ethnicity and mortality. These findings support many other studies that consistently identified education as a strong determinant of health in multiethnic American populations with regard to early- and late-life morbidity, mortality,2 and cognitive aging.3 Years of education is likely an overly simplified metric. It does not capture the quality of education received, which historically has been variable across communities, and is among other especially strong determinants of health in

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racial/ethnic minorities.4 It is also recognized that education may be representative of many more complex psychosocial and health variables across a life span,5 including diet, exercise, income and other markers ofsocial status, and health beliefs and attitudes. Similarly, race itself represents a host of deep-seated social and health inequities, including direct and indirect effects of racism. Thus, for this study, given the complex relations between race/ethnicity, education, and long-term health, a host of important residual confounders may explain these relations, including when diverse geographic cohorts are considered in aggregate.

THE LIMITATIONS OF TIME

The changes in mortality in CARDIA highlight the critical importance of considering time in cohort studies: time in history when cohorts are enrolled and studied, amount oftime the cohort spends facing chronic diseases and their determinants, and time in life the cohort faces these exposures. Three separate effects (age, period, and cohort

effects) are collectively termed "secular trends" and are important to consider in understanding changes in mortality over time.6 Most obviously, age effects in mortality are naturally expected to have increased risk and potentially different causes with advancing age. Period effects, or the calendar time during which outcomes occur, affect mortality as evidenced by AIDS in this cohort. Cohort effects represent the period when an individual was born, or entered a study, and provide an index for potential generational effects.6 Examples include major shared societal experiences, including episodic ones (e.g., wars and economic depressions), and general educational and social experiences in early life and health care across the life span.

A final way to reflect on time is to question whether enough time has passed to understand a cohort's mortality when many remain alive. The primary measure of years of potential life lost can be helpful beyond simple proportions of mortality and differences by race/ethnicity and education. At the oldest, the cohort is aged to about 62 years, which precedes a host of disorders associated with aging, including (more) cancer and cardiovascular disease, as well as neurodegenerative disorders, all of which disproportionately affect disadvantaged and minority populations. Having enrolled participants in young adulthood, the CARDIA study does offer a distinct advantage over many studies of aging that often begin enrollment in the sixth or seventh decade of life-an age after a significant number have died from competing causes before becoming elderly. Although we will have to wait for the CARDIA cohort to age further, trends in mortality might change as the cohort ages (particularly those who begin to outlive their life expectancy). New treatments for neurodegenerative disorders in particular could dramatically increase life expectancy, as has occurred recently in cancer care. Making matters even more complicated is that American life expectancy continues to change, declining since 2014, particularly among young and middle-aged adults7-ages the CARDIA cohort is beginning to live past.

However, without trying time too much more, one must ask: How much longer do we have to wait to understand and act on what is happening in health care right now? /4JPU

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Sidebar

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CONFLICTS OF INTEREST

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References

REFERENCES

1. Iribarren C, Jacobs DR, Kiefe CI, et al. Causes and demographic, medical, lifestyle and psychosocial predictors of premature mortality: the CARDIA study. Soc Sci Med. 2005;60(3):471-482.

2. Singh GK, Daus GP, Allender M, et al. Social determinants of health in the United States: addressing major health inequality trends for the nation, 1935-2016. IntJ MCH AIDS. 2017;6(2): 139-164.

3. Noble JM, Schupf N, Manly JJ, Andrews H, Tang MX, Mayeux R. Secular trends in the incidence of dementia in a multi-ethnic community. J Alzheimers Dis. 2017;60(3):10651075.

4. Manly JJ. Deconstructing race and ethnicity: implications for measurement of health outcomes. Med Care. 2006; 44(11, suppl 3):S10-S16.

5. GlymourMM, Manly JJ. Compulsory schooling laws as quasi-experiments for the health effects of education: reconsidering mechanisms to understand inconsistent results. Soc Sci Med. 2018;214: 67-69.

6. Holford TR. Age-period-cohort analysis. In: Armitage P, Colton T, eds. Encyclopedia of Biostatistics. Hoboken,

NJ: Wiley; 2005. Available at: https://onlinelibrary. wiley.com/doi/abs/10.1002/0470011815. b2a03003. Accessed December 19, 2019.
7. Woolf SH, Schoomaker H. Life expectancy and mortality rates in the United States, 1959-2017. JAMA. 2019;322(20): 1996-2016.

DETAILS

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Moving From Metrics to Mechanisms to Evaluate Tobacco Retailer Policies: Importance of Retail Policy in Tobacco Control

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ABSTRACT (ENGLISH)

As suggested in the important study by Lawman et al. (p. 547), we live in cities and communities with an overabundance of tobacco retailers. In fact, there are more than 26 tobacco retailers for every McDonalds and more than 31 retailers for every Starbucks in the United States.1 Living in neighborhoods with higher tobacco retailer density is associated with a greater likelihood of starting to use tobacco products and a reduced likelihood of successful quitting.2,3 Consistent with this science, and driven by concerns about stalled or reversed progress in reducing tobacco use, states and localities have started planning, implementing, and evaluating a variety of policies with the common goal of reducing the retail supply of tobacco.

The Lawman et al. article describes how the novel retail environment policy of Philadelphia, Pennsylvania, reduced tobacco retailer density by 20.3% in the first three years and significantly reduced socioeconomic disparities in density. This study is important for several reasons. First, it adds to the small but growing evidence base for local solutions to supply reduction. Second, it looks at the potential of, in effect, multiple policies to improve the inequitable distribution of tobacco retailers in low-income neighborhoods. Finally, it is a stellar example of how communities continue to be the laboratories for tobacco policy implementation that can serve as exemplars for state and federal regulation.

FULL TEXT

As suggested in the important study by Lawman et al. (p. 547), we live in cities and communities with an overabundance of tobacco retailers. In fact, there are more than 26 tobacco retailers for every McDonalds and more than 31 retailers for every Starbucks in the United States.1 Living in neighborhoods with higher tobacco retailer density is associated with a greater likelihood of starting to use tobacco products and a reduced likelihood of successful quitting.2,3 Consistent with this science, and driven by concerns about stalled or reversed progress in reducing tobacco use, states and localities have started planning, implementing, and evaluating a variety of policies

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THE IMPORTANCE OF POLICY MECHANISMS

As the example from Philadelphia shows, a densityreduction policy can have multiple "levers" (i.e., a density cap, increased license fees, and a school buffer for new retailers) and should be paired with strong enforcement (e.g., an innovative three-strikes penalty). The Lawman et al. study provides evidence that the combination can reduce retail density overall and improve inequities in low-income areas. Such evidence will help other communities and states as they consider how to address the similar challenges of oversupply and inequitable distribution that plague most urban areas.

Real-world policy evaluations demonstrate whether a policy works, but they are often less able to explain how, why, or for whom they work. In the context oftobacco retail policies, how do density-reduction policies actually change the environments of communities, and how do these changes, in turn, promote healthy behavior? Past research suggests that density reduction may shape behavior through at least three mechanisms: (1) increasing the search and purchase costs of obtaining tobacco, (2) reducing exposure to tobacco marketing (as well as cues for craving and unplanned purchasing), and (3) reducing tobacco industry influence and denormalizing tobacco use to address the "insidious ordinariness" of tobacco.4

Tobacco retail density (however it is defined) is a means, not an end. That is, in addition to collecting evaluation data that can document how much density changes, it is just as important to be able to describe and understand what those changes mean for communities and their residents. A few short examples can help illustrate this point.

The Limits of Modest Density Reduction

Reduced density will promote health only if it produces environmental changes strong enough to shape behavior. By this we do not suggest that people necessarily need to be conscious of environmental changes, but these changes do need to be strong enough to shape behavior. In urban environments, tobacco users may access a dozen or more tobacco retailers within a fiveminute walk from their residence or workplace. A small reduction in density may not be enough to alter tobacco purchases and use frequency or to motivate quit attempts.

Varying Effects of Policies

Similarly, the metric we use to measure retail density is an overall average of the concentration of tobacco retailers over a typically large geographic area. This metric can hide a lot ofvariability. For example, a density-reduction policy that works through retailer caps may result in a randomly distributed pattern of reduced retailers, whereas a school buffer policy could result in more reductions of retailers in neighborhoods that have more youths and reduce racial disparities.5 Lowered retailer density in and of itself tells us little about the disparity-reducing potential of the policy; we need to look further.

Poiicy Mechanisms and Environmental Changes

Both of these previous points can be seen more clearly in the maps in Figure 1. These maps are part of a retail policy dashboard that is being developed as part of the National Cancer Institute-funded ASPiRE Center (Advancing Science &Practice in the Retail Environment; grant P01CA225597). Combining geocoded data on tobacco retailers with demographic data used to generate realistic synthetic populations,6 the Tobacco Swamps dashboard will support computational models of retail policies for 30 large US cities. It is designed collaboratively with community tobacco policy stakeholders as an interactive policy exploration tool that will be useful for those with on-theground knowledge of neighborhood and tobacco-related disparities.

In Figure 1, tobacco retailers are marked by red dots and a sample of residents by smaller blue dots. A heat map

overlay indicates the estimated average distance that residents would need to travel to reach the nearest tobacco retailer. The top map shows the tobacco retailer locations after a policy requiring a minimum distance of 600 meters between retailers. The bottom map shows the retailer landscape after a policy requiring 600 meters between tobacco retailers and schools.

These density-reduction policies would have different effects on the tobacco retail environment in Philadelphia. Although the retailer buffer removes 87% of tobacco retailers (leaving only 213 of 1607), it does little to increase travel distance. The average distance to the nearest retailer is 0.48 kilometers, and 96% of residents live within a 10-minute walk of a tobacco retailer (1 km). The school buffer policy leaves more retailers in place (273), but the effects on travel distance are more dramatic. The average distance to the nearest retailer is 0.73 kilometers, and 70% of the population lives within one kilometer of a tobacco retailer.

The heat map demonstrates why the school-focused policy works better in this context: fewer retailers remain in the densely populated areas, including downtown Philadelphia (see the light yellow areas of the map). Thus, two policies that have the same goal of density reduction would eventually have very different effects on the built environment. Of course, the dashboard simulates immediate effects oflocal policies. The value of the Lawman et al. article is the real-world estimates of how much and how quickly density reduction can be accomplished, which is an important complement to computational models.

CONCLUSIONS

It is critical to continue evaluating tobacco retail policies in communities like Philadelphia. However, in addition to monitoring basic metrics, such as retail density, we should make sure to understand and describe the underlying mechanisms by which these policies are thought to work. Using visualization and computational modeling tools are particularly useful for revealing policy mechanisms, understanding causal relationships, and communicating policy effects to stakeholders.7 Most importantly, by focusing on policy mechanisms, communities will be better able to design new tobacco control policies that meet the specific demands of their geographies and residents, as well as their political, commercial, and public health contexts. Â1PU

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D. A. Luke wrote the first draft of the editorial and all authors edited subsequent drafts.

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The authors have no conflicts of interest to declare.

Sidebar

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References

REFERENCES

1.Center for Public Health Systems Science. Point-of-sale report to the nation: realizing the power ofstates and

communities to change the tobacco retail and policy landscape. Available at: https://cphss.wustl.edu/point-of-salereport-to-the-nation. Accessed January 23, 2020.
2. Abdel Magid HS, Halpern-Felsher B, Ling PM, Bradshaw PT, Mujahid MS, Henriksen L. Tobacco retail density and initiation of alternative tobacco product use among teens. J Adolesc Health. 2019; Epub ahead of print.
3. Chaiton MO, Mecredy G, Cohen J. Tobacco retail availability and risk of relapse among smokers who make a quit attempt: a population-based cohort study. Tob Control. 2018;27(2):163-169.
4. Proctor RN, Proctor R. Golden Holocaust: Origins of the Cigarette Catastrophe and the Case for Abolition. Berkeley, CA: University of California Press; 2011.
5. Ribisl KM, Luke DA, Bohannon DL, Sorg AA, Moreland-Russell S. Reducing disparities in tobacco retailer density by banning tobacco product sales near schools. Nicotine Tob Res. 2016;19(2): 239-244.
6. Gallagher S, Richardson LF, Ventura SL, Eddy WF. SPEW: synthetic populations and ecosystems of the world. J Comput Graph Stat. 2018;27(4):773-784.
7. Luke DA, Hammond RA, Combs T, et al. Tobacco town: computational modeling of policy options to reduce tobacco retailer density. AmJ Public Health. 2017;107(5):740-746.

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Public Health Code of Ethics: Deliberative Decision-Making and Reflective Practice

Lee, Lisa M [1] ; Ortiz, Selena E [2] ; Pavela, Greg [3] ; Jennings, Bruce [4] [1] Department of Population Health Sciences and the Office of the Vice President for Research and Innovation, Virginia Tech, Blacksburg. [2] Department of Health Policy and Administration, The Pennsylvania State University, State College [3] Department of Health Behavior, University of Alabama at Birmingham [4] Department of Health Policy and the Center for Biomedical Ethics and Society, Vanderbilt University School of Medicine, Nashville, TN.

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ABSTRACT (ENGLISH)

In public health, ethical practice sustains the functioning ofpublic health organizations and the integrity of individual public health practitioners. Ethical conduct promotes and preserves public trust, which is necessary to achieve public health goals. To facilitate ethical conduct among the public health workforce, the American Public Health Association (APHA) adopted a Public Health Code of Ethics effective November 2019, updating and replacing the code adopted in 2002.1 The new code outlines values, standards, and obligations for public health organizations and individual personnel. It addresses the growing complexity of public health problems by using social justice and social determinants of health as framing tools for decision-making. It also outlines a decision-making framework to guide personnel through difficult choices that arise in practice.

In 2015, the APHA convened a task force of individuals from numerous APHA Member Sections to bring diverse

perspectives in public health practice, research, education, policy, and science to prepare an updated Public Health Code of Ethics.2 The task force used an iterative, deliberative, and consensus-building process and engaged national, state, local, territorial, and tribal public health practitioners and organizations, drawing on their perspectives and concerns to determine both the scope and the content of the new code. Broad input was received from APHA members (including the APHA Intersectional Council), other national public health organizations (e.g., Association of Schools and Programs of Public Health, Association of Public Health Laboratories, National Association of City and County Health Officials, Council of State and Territorial Epidemiologists), and members of the general public health community.

The new Public Health Code of Ethics delineates essential values that inform public health as it strives to promote human flourishing.2 These core public health values are professionalism and trust; health and safety; health justice and equity; interdependence and solidarity; human rights and civil liberties; and inclusivity and engagement. These values reflect many ethical schools of thought, and the code shows how these multiple values can complement one another. The code also examines how deliberation and decisionmaking can proceed when these values conflict.3 As a practical tool, the code now provides guidance for ethical action and implementation of ethical strategies in key domains of public health practice. The code does not carry with it a mechanism for disciplinary sanction or enforcement. Its influence on professional conduct derives from values and standards widely shared in the public health profession and from the force of reasoned argument. It is sensitive to the varied nature of public health work and the variety of contexts in which it takes place. The code provides an ethical framework to guide both individuals and organizations as they pursue the health of the public.

FULL TEXT

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and organizations as they pursue the health of the public.

IMPLEMENTATION OF THE CODE

In addition to attending to the ethical standards of the public health profession, public health practitioners must gain skills in decision-making when values conflict, as they often do in practice. Public health efforts such as isolation and quarantine to prevent the spread of serious infectious diseases, for example, can result in conflict between the obligation to promote population health and safety and the obligation to protect human rights and civil liberties. The resolution of ethical conflicts does not always entail a single right path forward; rather, in ethically complex situations, it can mean identifying a range of morally appropriate decisions and actions in light ofthe full context of the problem-the factual evidence, the moral dimensions, and the lived experience of affected parties.4 Often, public health practitioners must respond in situations when complete or strong factual evidence is unavailable, which makes the ethical framework for decisionmaking even more salient. Skills in ethical analysis and reasoning represent an important competency for public health practitioners and leaders. They are an essential part of professional judgment and productive deliberation about public health action.3 To avoid arbitrary decisions or abuses of public trust, the new code recommends that public health practitioners reflect on the following key considerations through deliberative decision-making processes: permissibility, respect, reciprocity, effectiveness, responsible use of scarce resources, proportionality, accountability and transparency, and public participation (Table 1).3

To provide specific, concrete guidance, the code contains recommendations for ethical action in 12 domains of practice, using the framework developed by the Public Health Accreditation Board.5

FUTURE DIRECTIONS AND OPPORTUNITIES

The ethical conduct of public health practitioners is shaped by professional socialization, as well as systemic, institutional, cultural, and psychological factors. These factors must be met with strategic efforts to affect organizational culture and build professional capacity. The Public Health Code ofEthics has been written to facilitate continuing education and training activities and to advance the professional capacities of the public health workforce. Ethics is a discipline that serves as a lens through which all public health practices should be viewed. Regardless of one's role (e.g., teaching, research, or local health department program implementation) or practice context (e.g., public agency, university, or nongovernmental organization), practicing public health in an ethical manner is crucial. Having a code of ethics to focus reflection, debate, and critical thinking is only the first step in the pursuit of ethical public health practice. The APHA Ethics Section, for example, intends to enhance the value of the code and support those who use it by integrating it into the Section's own professional responsibilities, such as considering the values and guidance outlined in the code while reviewing proposed APHA policy statements. Ethics Section policy reviewers will look for discussion of relevant public health values and whether the ethical analysis reflects the best practices described in the code, including the use of the strongest available factual evidence, an explicit moral justification for the proposed policy, and an appreciation for the lived experience of stakeholders. The Ethics Section also will develop an online ethics resource library that will include a variety of tools, articles, and training materials that focus on public health ethics.

CONCLUSIONS

The promulgation of written codes of ethics alone is not sufficient to ensure professionalism in practice. Other obstacles to ethical public health practice- factors such as prejudice, bureaucratic inertia, and tunnel vision-must be addressed as well. Some scholars are skeptical about the role of codes in promoting ethical professional conduct. Nonetheless, it is important for professionals to communicate through codes of ethics the expectations they have for members of the profession. Developing or revising codes of ethics can motivate a healthy process of institutional self-reflection and sensitization. Once established, codes of ethics can play a meaningful part in promoting and sustaining a humane and respectful ethos of moral recognition and care in public health.6 Codes of ethics are not manuals or checklists to be followed mechanically, but their language and provisions can be a touchstone for ethical reflection and deliberation. By providing critical diagnoses and aspirational alternatives, codes of ethics can even begin to address the structural and cultural factors that make the conduct ofthe field fall short of its own ideals and

those of the broader society.

A public health code of ethics must reflect the field's unique moral obligation to ensure the health of populations-as well as individuals-through practices and policies that foster the fair distribution ofbasic resources and conditions necessary for health, protection of individual and collective rights, and respect for the ecologies in which we live. This code, like all effective codes of ethics, "embodies the collective conscience of a profession and is testimony to the group's recognition of its moral dimension."7 /4JPI-I

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Sidebar

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References

REFERENCES

1. Thomas JC, Sage M, DillenbergJ, Guillory VJ. A code of ethics for public health. AmJPublicHealth. 2002;92(7): 1057-1059.
2. Lee LM, Fisher CB, Jennings B. Revising the American Public Health Association's Public Health Code of Ethics. AmJPublicHealth. 2016;106(7):11981199.
3. American Public Health Association. Public Health Code of Ethics. Washington, DC: American Public Health Association; 2019.
4. Lee LM. Ethical competencies for public health personnel. Ethics Med Public Health. 2018;4:21-26.
5. Public Health Accreditation Board. Standards and Measures, Version 1.5. 2014:235. Available at: http://www.phaboard.org/wp-content/uploads/SMVersion-1.5-Board-adopted-FINAL-0124-2014.docx.pdf. Accessed April 2, 2019.
6. Jennings B. Ethics codes and reflective practice in public health. J Public Health (Oxf). August 21, 2018 [Epub ahead of
7. Frankel MS. Professional codes: why,pRIX] how, and with what impact? J Bus Ethics. 1989;8(2-3):109-115.

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Retention of Patients With Multiple Vulnerabilities in a Federally Qualified Health Center Buprenorphine Program: Pennsylvania, 2017–2018

Weinstein, Lara Carson, MD DrPH; Iqbal, Qais, BS; Cunningham, Amy, PhD MPH; Debates, Robin, LCSW; Landistratis, Greg, MPH; Doggett, Patrick, MD; Silverio, Alexis, MPH

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ABSTRACT (ENGLISH)

Objectives. To describe and report initial outcomes of a low-threshold, group-based primary care medication for opioid use disorder (OUD) program in a federally qualified health center.
Methods. We performed a retrospective chart review of patients enrolled in the program from October 4, 2017, to October 3, 2018, in Philadelphia, Pennsylvania. The main outcome measure was time retained in treatment, defined as time from treatment initiation to unplanned treatment termination. Secondary outcomes were the relationships between treatment retention and cocaine use or housing status. We analyzed retention in treatment using Kaplan-Meier survival estimates.
Results. The 3- and 6-month retention rates were 82% and 63%, respectively. The log-rank test showed no significant differences for comparisons between homeless versus not homeless (P =.25) and cocaine use versus no cocaine use (P =.12).
Conclusions. The medication for OUD program engaged a large number of patients from marginalized groups. Three- and 6-month retention rates were comparable with those reported of other federally qualified health center populations.

FULL TEXT

Headnote

Objectives. To describe and report initial outcomes of a low-threshold, group-based primary care medication for opioid use disorder (OUD) program in a federally qualified health center.
Methods. We performed a retrospective chart review of patients enrolled in the program from October 4, 2017, to October 3, 2018, in Philadelphia, Pennsylvania. The main outcome measure was time retained in treatment, defined as time from treatment initiation to unplanned treatment termination. Secondary outcomes were the relationships between treatment retention and cocaine use or housing status. We analyzed retention in treatment using Kaplan-Meier survival estimates.
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Conclusions. The medication for OUD program engaged a large number of patients from marginalized groups. Three- and 6-month retention rates were comparable with those reported of other federally qualified health center populations.
Public Health Implications. Integrating treatment of OUD into primary care shows promise for increasing access to and retention in medication for OUD services. The federally qualified health center payment structure supports the sustainability of the group visit model. (Am J Public Health. 2020;1 10:580-586. doi:10.2105/AJPH.2019. 305525)
Seventy thousand people in Philadelphia, Pennsylvania, use heroin, and another 50 000 misuse prescription

opioids.1 Philadelphia is disproportionately affected with an opioid death rate (1100 estimated in 2018) triple the city's murder rate and double the national overdose death rate (44.3 per 100 000).2 Philadelphia has increased its capacity for medication for opioid use disorder (MOUD; formerly known as medicationassisted treatment [MAT]) with buprenorphine from 100 treatment slots for patients in 2017 to 2906 as of December 2018, but clearly there is still a need for thousands of more treatment slots.3 Crucially, capacity does not imply that treatment is available for everyone who needs it, because there are still logistical, administrative, and stigma-related barriers to accessing treatment for some.4 Additionally, recent evaluations reveal that people from vulnerable populations, including individuals experiencing homelessness, non-White persons, and those with chronic medical diseases, have even more difficulty accessing MOUD.5,6

Several programs across the United States are working to reverse these disparities through a low-threshold approach to treatment. Kourounis et al.7 define treatment threshold as barriers that patients face when initially accessing MOUD and during ongoing treatment. Treatment barriers include accessibility barriers (e.g., waiting lists, inflexible admission criteria, limited points of access, and office-based induction) and design treatment barriers (such as a 1-size-fits-all approach and zero tolerance for relapse or polysubstance use). In 2019, building on earlier work in this area, including methadone programs,7 9 Jakubowski and Fox8 described 4 main criteria for treatment programs to be considered low threshold: same-day treatment entry, a harm-reduction approach, flexibility, and availability in nontraditional settings.

Although Philadelphia has the notorious distinction ofbeing an epicenter of the opioid crisis, coordination at the local and state levels has provided a supportive environment for creating and evaluating innovative responses. Using a low-threshold approach, we developed a MOUD program to offer immediate and ongoing access to patient-centered OUD treatment. The program is embedded in holistic health care services and designed explicitly for marginalized populations. The 3 main objectives of our program are (1) increase access to MOUD of marginalized communities, (2) increase treatment retention of patients with multiple comorbidities, and (3) increase access to primary care of people with OUD. Therefore, we hypothesized that our model would increase marginalized populations' access to and retention in MOUD and increase access to primary care of people with OUD. Figure 1 presents a logic model for our program showing the relationship among harm-reduction principles, program philosophy and structure, and anticipated outcomes.

METHODS

The Stephen Klein Wellness Center, a federally qualified health center (FQHC), provided data for this longitudinal retrospective study. The data set consisted of the records of 79 participants from the first year of a group-based MAT program for people with opioid use disorder from October 4, 2017, through October 3, 2018.

Intervention and Program Description

In response to the opioid crisis, 2 medical providers in partnership with several behavioral health consultants at the FQHC began a pilot individual appointment-based MOUD program in 2016. Within 3 months and without external advertising, demand outpaced availability for consistent access to individual appointments. Additionally, on January 1, 2017, we began receiving block funding for OUD treatment from the Pennsylvania Department of Human Services Center of Excellence. Requirements for participation in this program influenced the evolution of our care model. Selected relevant requirements were the following: (1) develop and deploy a community-based care management team that consisted of an MAT care coordinator and licensed and unlicensed professionals to support people in accessing treatment, (2) perform a standard Level of Care risk and needs assessment on all new participants, (3) refer participants to monthly mental health and drug and alcohol treatment, and (4) report participants' monthly urine drug screens (UDS).

We reviewed several group models for MOUD services, including nurse-led care,10 shared medical appointments,11 and behavioral health-led psychoeducational and psychosocial support12 with individual medical provider contact. Incorporating some practices from each, and addressing the requirements for participation in the Pennsylvania Department of Human Services Center of Excellence, we primarily adopted the behavioral health-led group session model with brief individual medical provider check-in visits during the session. We determined target

group size for patient access, provider sustainability, and fiscal responsibility to be 8 to 12 patients per group. Team members included an MAT care coordinator (who also provides the front office functions of scheduling appointments, verifying insurance, checking patients in, and supporting general case management needs), a licensed behavioral health provider, a waivered medical provider, and a medical assistant (to collect urine drug screens, both for point of care testing and off-site laboratory testing; responsibilities later expanded to other services, such as providing vaccines and laboratory draws).

Patients initially accessed MOUD services as walk-ins or via telephone. The MAT care coordinator performed a standard level of care risk and needs assessment. We offered patients for whom a higher level of care was appropriate assistance in obtaining this care, but they were not required to if they were medically stable with no immediate life-threatening problems. We scheduled initial buprenorphine intake appointments within 48 hours, with some walk-in availability.

During the initial appointment, patients met with 3 staff members: (1) the MAT care coordinator to assess substance use history and identify barriers to care, (2) an X-waivered primary care provider (one who has special Drug Enforcement Administration registration to prescribe buprenorphine products) to assess physical health needs and treatment options, and (3) a behavioral health consultant (licensed behavioral health provider) for a focused psychosocial and mental health assessment. Unless contraindicated by medical concerns, we provided patients with education and support for home induction of buprenorphine. Patients have access to an on-call provider, and we confirmed their next expected visit at group sessions. Team members were allocated 1 clinic session for MOUD group visits that included pregroup huddle to review the most recent UDS, to update the team about any relevant changes in patient status or needs, and to review the prescribing plan. A 1-hour group psychoeducational session followed, and then there was a concluding postgroup team huddle to review any departures from plans.

A team of MAT prescribing providers, behavioral health consultants, care coordinators, and certified recovery specialists developed this model to streamline the MOUD process for participants, providers, and staff while providing a low-threshold approach to care and maintaining flexibility. At the Stephen Klein Wellness Center site, after the initial individual intake, MOUD access is now solely through the group program. At the time ofthis evaluation, we held 2 weekly walk-in MOUD groups at this site; we have since expanded this to 4 days per week. This structure obviates the need for patients to make appointments, significantly reducing the administrative burden of patients and staff to schedule, cancel, and reschedule multiple appointments in person or by telephone. Prescriptions are generally written on a weekly basis, with extensions to 2-, 3-, and 4-week intervals based on clinical stability. At the time ofthe evaluation, we defined clinical stability as serial UDSs with consistent amounts of buprenorphine and no illegal or unprescribed substances.

The ongoing use of opioids was accepted as part of the recovery process, as long as appropriate levels of buprenorphine and norbuprenorphine were present in the UDS. In the case of UDS that was negative for buprenorphine, patients were offered a "split script," meaning patients received a smaller amount of buprenorphine and had to return to the pharmacy later in the week to pick up the rest ofthe weekly prescription. In the case of multiple UDSs that were negative for buprenorphine, patients were offered the option of daily observed dosing in the pharmacy. Ongoing use of other substances, primarily cocaine, was tolerated, although patients were kept at weekly visits so that we could offer support for stimulant use disorder. Patients with multiple UDSs that were positive for benzodiazepines were referred for additional onsite behavioral health support and treatment of anxiety. Multiple access points per week allow us to hold firm boundaries related to timely arrival (with a 5-minute graceperiod). Patients who arrived after the group session had started or who missed the group session were given "bridge" prescriptions until the next group session; this was modified on a case-by-case basis.

We are able to offer onsite childcare through our colocation with a YMCA. The MAT care coordinator arranges transportation for Medicaid patients by purchasing transit passes for those who are otherwise ineligible for Medicaid transportation. Participants' access to primary care services is the same as that of the rest of the clinic population: we use a same day-next day model whereby appointments can be accessed via telephone or as a walk-in.

The FQHC model and Pennsylvania Medicaid payment model support the sustainability of the group visit model. We

bill the same fixed FQHC visit rate for each medical and behavioral health group visit for patients with Medicaid; Medicare does not pay for the group delivery method but does reimburse for the individual medical visit. At the time of this evaluation, the Pennsylvania Department of Human Services Center of Excellence funding covered the salary and benefits of the MOUD coordinator. We performed a basic cost-revenue analysis by examining OUD billing codes during the study period. This analysis showed that the MOUD program funds 92% of its costs. Pharmacy revenue and Health Resources and Services Administration funds covered the balance. This cost-revenue ratio is similar for the program as a whole.

Data Sources

We derived our data set from the FQHC electronic health record, Next Gen, which provided sociodemographic information as well as information on MOUD group visits and primary care visits (defined as any nonMOUD billable encounter with a primary care provider, i.e., nonbehavioral health, nondental provider), MOUD visit notes, UDS results, medical and psychiatric diagnoses, HIV testing results, hepatitis C virus testing results, and whether patients were classified as individuals experiencing homelessness. We determined whether participants were experiencing homelessness using the Health Resource and Service Administration definition for the FQHC Uniform Data Service Reporting; this includes people living in the following circumstances: on the street, in a shelter, in transitional housing, doubled-up, in a single room occupancy hotel, in permanent supportive housing, and in other housing programs that are targeted to individuals experiencing homelessness.13

Inclusion and Exclusion Criteria

We initially included 82 participants who entered the MOUD program after October 4, 2017, and before October 3, 2018. We then excluded from the analysis the 3 participants with only 1 MOUD group visit, representing 3.7% of the sample. After excluding the 3 participants with only 1 MOUD group visit, our final data set consisted of79 individuals. Our primary outcome was time retained in treatment, defined as the time from treatment initiation to first unplanned treatment termination. Following previous studies of MAT outcomes, we defined unplanned treatment termination as unplanned selfdischarge from the program (i.e., no active prescription and no appointments for 60 days) or drug overdose death.14 16 We did not consider patients leaving the program because of incarceration, planned transfer to another program, or death unrelated to drug overdose as unplanned treatment termination. Our secondary outcomes were the relationships between (1) cocaine use in the first month of program admission and time retained in treatment, and (2) housing status as reported at intake and time retained in treatment.

Statistical Methods

We calculated demographic variables using frequencies for categorical variables and means and SDs for continuous variables. We examined bivariate relationships between all study variables using the %2 test for categorical variables, Pearson correlation coefficients for continuous variables, and an independentsamples t test for categorical-continuous relationships, with a significance level of P less than .05.

For our primary outcome oftime retained in treatment, we calculated retention in treatment using Kaplan-Meier survival analysis. We defined survival time as months retained in treatment. We removed patients not experiencing treatment failure (i.e., incarceration, planned transfer to another program, or death unrelated to buprenorphine or drug use) from the survival analysis (or censored them) on the date that the outcome occurred. We then created separate survival curves for participants who currently or formerly experienced homelessness versus those not experiencing homelessness and for participants whose UDS was positive for cocaine in days 2 through 31 of the program versus those whose UDS was negative for cocaine. We conducted the log-rank test to assess differences in median months retained in treatment of individuals currently or formerly experiencing homelessness versus individuals not experiencing homelessness and for participants with positive versus negative cocaine UDS in the first month, with a significance level of P less than .05.

We conducted all analysis using SPSS version 26 (IBM, Somers, NY).

RESULTS

Table 1 provides demographic information for participants. The average age of the participants (n = 79) was 47 years (SD = 10.0); 59% were male, and 58% were African American. Forty-three percent of participants were

individuals currently or formerly experiencing homelessness. Thirty-four percent of participants had UDSs that were positive for cocaine in days 2 through 31 of the program. Top medical and psychiatric comorbidities coded in the electronic health record included nicotine dependence (57%), hypertension (30%), chronic hepatitis C virus (24%), anxiety (22%), major depressive disorder (13%), and posttraumatic stress disorder (11%). Insurance status included 81% using Medicaid, 11% using Medicare, and 8% uninsured. The majority of participants (56%) had 2 or more primary care visits over the time of the evaluation. No bivariate relationships between demographic variables and retention in treatment were statistically significant. Forty-eight patients experienced an unplanned treatment termination event, including 1 overdose death. Seven patients left the program for other reasons, including 5 planned transfers, 3 incarcerations, 1 hospitalization, and 1 death unrelated to opioid use; we did not categorize these 7 as experiencing an unplanned treatment termination event.

Kaplan-Meier analysis showed an overall 3-month retention rate of82% and a 6-month retention rate of 63%. Months retained in treatment of individuals experiencing versus not experiencing homelessness were similar at 10.45 versus 10.75 months, respectively. The log-rank test for individuals experiencing versus not experiencing homelessness was not significant (P = .25). Months retained in treatment of cocaine use versus no cocaine use were lower at 5.33 versus 11.54 months, respectively. The log-rank test for cocaine use versus no cocaine use was not significant (P = .12; Figures 2 and 3).

DISCUSSION

Based on our initial findings, our program shows promise in addressing its main objectives: to (1) increase access to MOUD of marginalized populations, (2) increase treatment retention of patients with multiple comorbidities, and (3) increase access to primary care of people with OUD. Our MOUD program engaged a larger percentage of African American patients and patients 35 years and older compared with Philadelphia MOUD programs citywide (57% vs 29% and 87.34% vs 65.11%, respectively).17

Although exact comparisons cannot be made because of wide variation in the definition of treatment retention, our retention rates at 3 months (82%) and 6 months (63%) are comparable with those reported in other FQHC populations and in programs specifically focused on highly marginalized populations. Haddad et al.18 examined treatment retention in a MOUD program in 2 urban FQHC network sites in Connecticut; the majority of the management team members of this program were primary care providers. The authors reported retention in MOUD at 3 and 6 months as 71.8% and 56.8%, respectively, in a cohort of 266 people. Importantly, this study classified participants who returned to treatment after a treatment gap as retained in treatment. Sixty-seven percent of participants in this cohort experienced a treatment gap, with a mean gap of 116 days.18 A study of an innovative Philadelphia MOUD program through Prevention Point Philadelphia reported retention rates at 3 months (77%) and 6 months (65%), similar to our program.16 Similar to our approach, this study defined treatment failure as unplanned self-discharge from the program, no active prescription, and failure to attend scheduled appointments for 60 days, and it did not include as treatment failures leaving the program because ofincarceration, a planned transfer to another program, or death unrelated to buprenorphine or other drugs.16

Few studies have examined retention in MOUD specifically of populations experiencing homelessness or those using cocaine. Carter et al.19 reported retention in MOUD at 3 and 6 months as 37% and 27%, respectively, of 95 people currently experiencing homelessness in a street medicine program in San Francisco, California. This study used a broad definition of treatment retention and categorized patients as retained on buprenorphine during the month in question if they had an active prescription for buprenorphine for more than 2 weeks of the 4-week period. Patients did not have to have active prescriptions in the previous months to be considered retained on buprenorphine during the month in question if they met these criteria. Additionally, this study included patients who transferred to another program as retained in treatment.19

Stancliff et al.20 reported active retention in MOUD at 3 and 6 months as 42% and 31%, respectively, in 100 people from marginalized populations (marginally housed, low income) attending the Harm Reduction Coalition Buprenorphine Maintenance Harm Reduction Program in New York City. In this study, participants were given a 30-day prescription for buprenorphine and were considered active in the program up to 45 days from the last

prescription.20 Other promising lowthreshold buprenorphine programs designed for specific populations in nontraditional settings include the Project Connections at Re-Entry program, which is delivered in a mobile van outside the Baltimore, Maryland, City Jail,21 and the Recovery Community Center Office-Based Opioid Treatment model, which is delivered in a community site with multiple resources.22

There are limited data on the relationship between cocaine use and MOUD treatment retention, possibly because cocaine use has historically been regarded as a reason to restrict access to or continuation of MOUD.23 One outpatient community health center study reported no difference in treatment retention or reported opioid use among cocaine users versus nonusers over a 6-month period. However, this study relied only on self-report of cocaine use, not UDS.24,25 In our study, our comparison of months retained in treatment of cocaine versus noncocaine users had a nonsignificant log-rank test; however, this may reflect our small sample size. The retention trends showed shorter times in treatment of cocaine versus non-cocaine users (5.33 vs 11.54 months). Therefore, further investigation into possible mechanisms that support treatment retention in these subpopulations is warranted.

Eighty percent of our patients accessed primary care at our FQHC during the study period. By nature of the group-based integrated model, 100% of patients received group-based behavioral health and substance use services. In comparison, the FQHC sites in Haddad et al.18 reported similar results in primary care utilization of 90% of patients over the 18-month study period. However, in this non-group-based integrated model, 56% of patients accessed onsite behavioral health services, and 53% accessed substance use services.

Limitations

We acknowledge several limitations of our study, including the retrospective design, relatively short follow-up period, and lack of a comparison group. We did not classify incarceration or planned treatment transfers as treatment failures, and this may mask later negative outcomes. Three patients left the program after their initial visit, but we did not track the reasons for these dropouts, which is important information for continuing to improve our program. The reported number of participants with cooccurring psychiatric diagnoses maybe an underestimate as the medical and psychiatric conditions were pulled from billing diagnoses-the majority of which are generated by primary care. Generalizability is restricted by these issues and may not translate to FQHC settings with different demographic populations, those that lack the structure for group appointments, and those with different payment structures for medical and behavioral health services. Other supportive services unique to our program, such as help with transportation and childcare, may not be accessible to other FQHCs. Ongoing evaluation of the program will provide outcome results with a more extended period and with an expanded population.

There are some notable limitations in the structure of our program. Our main clinic site continues to offer MOUD only through the group-based model because of limitations in medical provider availability both for MOUD and primary care. Use of the same day-next day model for primary care means that appointment times are often filled by midmorning so patients cannot schedule a primary care appointment in advance of1 day. In our smaller satellite clinics with limited patient populations, we are able to offer individual MOUD appointments for patients who are unable to access group sessions because of medical and social complexities that preclude a regular schedule. The philosophy of our program is inherently patient centered, and we recently completed a series of in-depth focus groups with patients and staff. In response, we plan to develop a patient advisory board to provide an ongoing structural method to include patients in ongoing program expansion and evaluation.

Public Health Implications

Integrating treatment of OUD into primary care shows promise in increasing access to and retention in MOUD services. Our program provides early evidence of an efficient, transferable model to support the expansion of MOUD to other FQHCs and primary care sites both locally and at a national level. From the onset, our program embraced low-threshold concepts of harm reduction and flexibility, which may improve access to MOUD for marginalized populations. In continued efforts to implement a low-threshold program, we are now approaching same-day treatment entry for all patients and are tending our services to nontraditional locations, including a large drop-in center for people experiencing homelessnessness.8

We believe our logic model (Figure 1) can serve as a potential framework for the expansion of low-threshold MOUD

models more broadly. Further plans for the development of our program model include comprehensive evaluation focusing on health care service outcomes, patient outcomes, and implementation outcomes. Our multilevel approach will include quantitative and qualitative data from the individual and organizational levels and will incorporate perspectives from patients, providers, learners, staff, key stakeholders, and policymakers. These results will be used to inform the development of an enhanced, definitive intervention ready for larger-scale testing in a variety of settings.

CONTRIBUTORS

L. C. Weinstein was the principal investigator and oversaw all aspects of the project. Q. Iqbal and A. Silverio managed and analyzed the data. A. Cunningham oversaw statistical analysis. R. Debates, G. Landistratis, and P. Doggett developed and implemented the program. All authors contributed to the writing of the article.

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CONFLICTS OF INTEREST

There are no conflicts of interest for any of the authors.

HUMAN PARTICIPANT PROTECTION

Thomas Jefferson University provided institutional review board approval for this project.

Sidebar

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References

REFERENCES

1. Eichel L, Pharis M. Philadelphia's drug overdose death rate among highest in nation. 2018. Available at: https://www.pewtrusts.org/en/research-and-analysis/articles/ 2018/02/15/philadelphias-drug-overdose-death-rateamong-highest-in-nation. Accessed August 21, 2019.

2. Mayor's Task Force to Combat the Opioid Epidemic in Philadelphia. Final report &recommendations. 2017. Available at: https://dbhids.org/wp-content/uploads/ 2017/05/OTF_Report.pdf. Accessed August 26, 2019.

3. City ofPhiladelphia Department ofBehavioral Health and Intellectual Disability Services. Opioid epidemic in Philadelphia. Implementation ofthe Mayor's Task Force recommendations. Status report to the Mayor's Drug and Alcohol Executive Commission. 2019. Available at: https://www.phila.gov/media/20190110101212/TheOpioid-Epidemic-in-Philadelphia-.pdf. Accessed August 26, 2019.

4. Jones CM, Campopiano M, Baldwin G, McCance-Katz E. National and state treatment need and capacity for opioid agonist medication-assisted treatment. Am J Public Health. 2015;105(8):e55-e63.

5. Cantone RE, Fleishman J, Garvey B, Gideonse N. Interdisciplinary management of opioid use disorder in primary care. Ann Fam Med. 2018;16(1):83.

6. Ober AJ, Watkins KE, McCullough CM, Setodji CM, Osilla K, Hunter SB. Patient predictors of substance use disorder treatment initiation in primary care. J Subst Abuse Treat. 2018;90:64-72.

7. Kourounis G, Richards BD, KyprianouE, et al. Opioid substitution therapy: lowering the treatment thresholds. Drug Alcohol Depend. 2016;161:1-8.

8. Jakubowski A, Fox A. Defining low-threshold buprenorphine treatment. J Addict Med. 2019; Epub ahead of print.

9. Bao YP, Liu ZM, Epstein DH, Du C, Shi J, Lu L. A meta-analysis ofretention in methadone maintenance by dose

and dosing strategy. Am J Drug Alcohol Abuse. 2009; 35(1):28-33.
10. Chou R, Korthuis PT, WeimerM, et al. Medication-assisted treatment models ofcare for opioid use disorder in primary care settings. Agency for Healthcare Research and Quality; 2016 Report No. 16(17)-EHC039-EF. 2016. Available at: http://www.effectivehealthcare.ahrq. gov/reports/final.cfm. Accessed January 19, 2020.
11. Doorley SL, Ho CJ, Echeverría E, et al. Buprenor-phine shared medical appointments for the treatment of opioid dependence in a homeless clinic. Subst Abus. 2017; 38(1):26-30.
12. Berger R, Pulido C, Lacro J, Groban S, Robinson S. Group medication management for buprenorphine/ naloxone in opioid-dependent veterans. J Addict Med. 2014;8(6):415-420.
13. Health Resources and Services Administration. Uniform data system reporting instructions for 2019 health center data. Available at: http://www.bphcdata.net/docs/ uds_rep_instr.pdf. Accessed November 25, 2019.
14. Alford DP, LaBelle CT, Richardson JM, et al. Treating homeless opioid dependent patients with buprenorphine in an office-based setting. J Gen Intern Med. 2007;22(2):171-176.
15. Weinstein ZM, Kim HW, Cheng DM, et al. Longterm retention in office based opioid treatment with buprenorphine. J Subst Abuse Treat. 2017;74:65-70.
16. Bachhuber MA, Thompson C, Prybylowski A, Benitez J, Mazzella S, Barclay D. Description and outcomes of a buprenorphine maintenance treatment program integrated within prevention point Philadelphia, an urban syringe exchange program. Subst Abus. 2018; 39(2):167-172.
17. Opioid Program. Unique Medicaid beneficiaries with a primary diagnosis of OUD receiving any Medicaid funded medication assisted treatment. 2019. Available at: https:// public.tableau.com/profile/pdph#!/vizhome/MedicationAssistedTreatment/UniqueMedicaidBeneficiarieswitha PrimaryDiagnosisofOUDReceivingAnyMedicaidFundedMedicatonAssistedTreatment. Accessed August 21, 2019.
18. Haddad MS, Zelenev A, Altice FL. Integrating buprenorphine maintenance therapy into federally qualified health centers: real world substance abuse treatment outcomes. Drug Alcohol Depend. 2013; 131(1-2):127-135.
19. CarterJ, ZevinB, LumPJ. Lowbarrierbuprenorphine treatment for persons experiencing homelessness and injecting heroin in San Francisco. Addict Sci Clin Pract. 2019;14(1):20.
20. Stancliff S, Joseph H, Furst T, Fong C, Comer SD, Roux P. Opioid maintenance treatment as a harm reduction tool for opioid-dependent individuals in NYC: the need to expand access to buprenorphine in marginalized populations. J Addict Dis. 2012;31(3): 278-287.
21. Krawczyk N, Buresh M, Gordon MS, Blue TR, Fingerhood MI, Agus D. Expanding low-threshold buprenorphine to justice-involved individuals through mobile treatment: addressing a critical care gap. J Subst Abuse Treat. 2019;103:1-8.
22. Ashford RD, Brown AM, McDaniel J, et al. Responding to the opioid and overdose crisis with innovative services: the recovery community center office-based opioid treatment (RCC-OBOT) model. Addict Behav. 2019;98:106031.
23. Payne BE, Klein JW, Simon CB, et al. Effect of lowering initiation thresholds in a primary care-based buprenorphine treatment program. Drug Alcohol Depend. 2019;200:71-77.
24. Cunningham CO, Giovanniello A, Kunis HV, Roose RJ, Fox AD, Sohler NL. Buprenorphine treatment outcomes among opioid-dependent cocaine users and non-users. Am J Addict. 2013;22(4):352-357.
25. DeMaria PA Jr. Cocaine use and buprenorphine compliance. J Addict Med. 2015;9(3):251.

DETAILS

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National Public Health Week and National Negro Health Week

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ABSTRACT (ENGLISH)

National Negro Health Week (NNHW), as presented by Paul Braffin this issue of AJPH (p. 470), was an attempt to bring attention to health challenges in the African American community more than 100 years ago. While there is no direct connection between NNHW and National Public Health Week (NPHW), the concepts were similar in their intent: to bring visibility to matters of health that otherwise were weakened by their invisibility. Invisibility has always been an obstacle for advancement of people, issues, ideas, products, and services. "Out of sight, out of mind" is an expression that captures the matter fully.

FULL TEXT

National Negro Health Week (NNHW), as presented by Paul Braffin this issue of AJPH (p. 470), was an attempt to bring attention to health challenges in the African American community more than 100 years ago. While there is no direct connection between NNHW and National Public Health Week (NPHW), the concepts were similar in their intent: to bring visibility to matters of health that otherwise were weakened by their invisibility. Invisibility has always been an obstacle for advancement of people, issues, ideas, products, and services. "Out of sight, out of mind" is an expression that captures the matter fully.

INVISIBILITY OFPUBLIC HEALTH

An ongoing challenge to public health is its relative invisibility. When public health works, nothing happens. That is, disease outbreaks are averted, water and food are safe, and the environment is safeguarded, among numerous other outcomes benefiting the public's health. Yet, beyond the policy actions that may be involved in realizing these advantages, in addition to advocacy efforts and perhaps attention drawn by media, too often these public health "victories" are not recognized by the public. Sometimes they are also not recognized in the political domain. In this regard, the relative invisibility of specific population groups and their health status results in challenges like those for public health.

In the context of developing strategies to place a spotlight on public health, the concept of a NPHW was discussed during American Public Health Association (APHA) Executive Board meetings in the late 1980s. There were no specific triggering events. The idea was attractive; however, the challenges at the time to bring the concept to fruition were substantial. Where and how to start, who would plan the effort, sources of funding, and how would it be possible for APHA to coordinate or otherwise lead the effort, were issues ofquestion. After consideration, the matter was not pursued.

LOS ANGELES COUNTY PUBLIC HEALTH WEEK

Regardless, the concept was sound and was compatible with the needs and situation facing the Los Angeles County (California) Department of Health Services during that period. When I joined the Department in 1985 as assistant director of health services, director of public health programs and services, it had just gone through a reorganization. Previously, its public health components had been under the overall administrative purview of the massive hospital

side of the organization. The reorganization placed public health on its own administrative and fiscal footing. The change was clearly welcomed by the public health staff and community advocates. It also presented an open opportunity to engage in a major effort to create needed visibility for public health. The visibility would benefit the general public-that is, the 10 million residents of Los Angeles County-and the morale of the Department's public health workers; it would also be positive forpolitical and administrative purposes and for media. The idea of a Public Health Week (PHW) celebration for Los Angeles County was a creative vehicle to achieve these beneficial outcomes.

While this is not the opportunity to provide a high level of detail regarding the development and maturation of PHW, the following summary may provide a sketch of the path. PHW in Los Angeles County was announced and conducted by the Los Angeles County Department of Health Services during the first week of April 1988. The intent was for the various health districts within the county system to promote their local activities in whatever manner was available and considered effective in that local community. Local health offices were to overtly invite the public to visit their health centers and talk with a public health nurse or environmental health sanitarian or local health officer and anyone else regarding their health issues, particularly those regarding disease prevention, health protection, and promotion. In effect, the local districts were expected to do what they would do anyway, just promote their availability more vigorously and visibly.

As a central point of gathering, an APHA Conference-like opening session was conducted. Bailus Walker, president of APHA at the time, attended the session and provided the keynote address. That event attracted some media coverage. As the Northern and Southern California APHA Affiliates had been notified of our plan for PHW, along with other health departments, curious attention throughout the state was focused on the event. The public responded to the invitations and, with the media coverage, the week resulted in increased attendance to the health centers. It laid the foundation for the second celebration.

The second PHW was highly anticipated by staff, community organizations, and other public health jurisdictions in California. During the interim, we had received several requests for information from other health departments regarding our successful planning and conduction of PHW, and a few were following our lead. The second PHW was like the first but more detailed including more public health activities. Again, the president of APHA, Iris Shannon, attended the opening session and provided the keynote address. The second celebration drew far more media attention.

By the third and subsequent PHW celebrations, interest and momentum had grown exponentially. Several other city and county health departments in California and elsewhere were formally conducting PHW celebrations. We had presented a "how to do it" session during an APHA annual meeting for other interested health jurisdictions and, based on many requests, had prepared a "how to do it" packet that was sent by mail in response to requests for information.

The Los Angeles County Board of Supervisors formally proclaimed PHW as a county event, which substantially altered the significance and visibility of the celebration. The opening session was moved from a county auditorium to a luncheon held at the Dorothy Chandler Pavilion within the Los Angeles Music Center. A member of the Board of Supervisors presided over the session and subsequent keynote speakers included David Satcher, director of the Centers for Disease Control and Prevention at the time, and Earl Fox, director of Health Resources and Services Administration, among other leaders of similar note. Within a few years, the State of California proclaimed PHW, which fully opened the doors to recognition and celebrations throughout the state. However, momentum had built in other states as well, and proclamations by those states soon followed.

By the mid-1990s, 20 states had proclaimed PHW. It was time for APHA to put its influence to work to achieve a national recognition. To this end, APHA conducted a Senate briefing regarding PHW. Discussions were held with Phil Lee, assistant secretary of health, Department of Health and Human Services (DHHS), and more than 50 letters of support advocating a national proclamation were sent by various public health jurisdictions and leaders to Donna Shalala, secretary of health, DHHS.

NATIONAL PUBLIC HEALTH WEEK

In 1995, President Clinton signed a proclamation for a NPHW. This year we celebrate the 25th anniversary ofthat recognition. PHW is now a regular and active event throughout the United States. It provides a visible and uplifting opportunity to celebrate public health. NPHW and NNHW shared the strategy of spotlighting the otherwise less visible, making their respective health issues more tangible and actionable. >4jPI-l

Caswell A. Evans, DDS, MPH

CONFLICTS OF INTEREST

The authorreports no conflicts ofinterest.

Sidebar

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Document 72 of 83

Strategies to Increase Vaccination Coverage

Puac-Polanco, Victor; Kalia, Vrinda

ProQuest document link

FULL TEXT

In Argentina, the disparities in vaccination coverage between and within provinces pose a public health challenge. In Villa Maria, between July and November 2016, Bossio et al. drafted a weekly plan for health care teams, updated the vaccine register, and contacted families who missed their vaccination appointments by active search and home visits. When the children were aged 6 months, timely vaccination increased by 2.6 times (P <.001) among families in the intervention group. There was no statistically significant change among the comparison group. Timely vaccination was increased by setting weekly goals, active search, home visits, and creating a reliable register. Citation. Bossio JC, Sanchis I, Armando GA, Arias SJ, Jure H. [Results of a strategy using reminders before and after date of vaccination to improve timeliness of vaccination at six months]. Cad Saúde Pública. 2019;35(12):e00214518.

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The Public Health Dialogue, 2020

Morabia, Alfredo, MD, PhD

ProQuest document link

FULL TEXT

This "public health dialogue" features points and counterpoints on questions shared by millions of people to be addressed in front of millions of people but rarely discussed directly among public health actors with divergent political views. The dialogue enriches our understanding of how populations think. It helps everyone to be more effective. Check them out.

STRUCTURAL RACISM

Samorani and Blount (p. 440) identify a racial bias in computer algorithms that help clinics to overbook the medical appointments ofpatients having traits associated with no-shows. Thus, patients ofcolor have to wait longer to be provided care. Rodenberg (p. 441) argues that the unaddressed causes of no-show (e.g., lack of transportation or inefficient scheduling), rather than racism, are the culprit.

PRIVATE SECTOR

Relying on examples of successful private-public partnerships in consumer, community, employee, and environmental health, Kassler (p. 443) argues thatbusiness needs to be seen as a true collaborator rather than just a financier. Greenberg (p. 445) counterargues that many corporations, as in the automobile, airline and hotel industries, cause widespread harms to the environment and their consumers.

SINGLE PAYER

For Himmelstein and Woolhandler (p. 447) health professionals should be guided by the evidence favoring single-payer systems over their alternatives, rather than by hypothetical political feasibility. Sundwall (p. 448) says the goal should be single payer plus universal access to basic care for all, which, together, can be attained only by consensus on incremental policies.

ADVERSE CHILDHOOD EXPERIENCES

Atchison (p. 450) presents the Iowan experience of adverse childhood experiences and their clinical- community partnerships as a model for a US health care system relying on prevention and population health. For Kaplan (p. 451) the clinical-community partnerships comprise mostly microlevel interventions, which need to be coordinated with the macro and meso levels to effectively address social determinants of health.

HOSPITALS

Fine (p. 453) feels that to address the social determinants of health, primary health care is a cheaper and safer alternative to the trillion dollars a year spent on hospital care. Gabow (p. 454), conversely, believes that despite their cost, hospitals are safety net institutions with a unique public health value but are insufficiently integrated with the social care system.

POLICE VIOLENCE

Rodenberg (p. 456) asserts that police violence is a mutual problem of the community and the police, as are public health and safety, and not an issue ofinherent bad faith and racism. Gilbert (p. 457) states that violence affects primarily Black and Brown residents and that minimizing police violence with impunity is needed to end the persistent public health crisis.

MATERNAL MORTALITY

According to former Representative Gingrey (R, GA; p. 462), extending Medicaid coverage to women one year (instead of60 days) after delivery can reverse the rise in mostly preventable maternal deaths. For Mullen, (p. 464), greater system accountability for quality prenatal and interconception services, standardized maternity care, chronic disease management and addressing racism is essential.

NATURE'S RIGHTS

Chilton and Jones (p. 459) claim that the public whose health needs to be protected comprises lakes, oceans, rivers, trees, and millions of species, including humans. Ishay (p. 460) avers that the rights of nature (i.e., sustainable ecosystems, clean air and water) should not be isolated and/oropposed to, but viewed as essential for the universal human rights to life, health, sustainable economic development, and civil rights.

These are convincing testimonies that divergences in opinions and values may not always be obstacles for action. We should not shy away from exposing them. All people contributing to AJPH agree that divergences should be overcome using empirical and historical sciences. Publishing such evidence is precisely the mission of AJPH. >4jPU

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Tobacco Retail Licensing and Density 3 Years After License Regulations in Philadelphia, Pennsylvania (2012–2019)

Lawman, Hannah G, PhD; Henry, Kevin A, PhD; Scheeres, Annaka, BS; Hillengas, Amory, MUSA; Coffman, Ryan, MPH; Strasser, Andrew A, PhD

ProQuest document link

ABSTRACT (ENGLISH)

Objectives. To evaluate changes in licensed tobacco retailers and retailer density 5 years before and 3 years after novel tobacco retailer licensing regulations were implemented in a large, urban area. Methods. We used administrative tobacco license data (n = 23 806 licenses, 2012- 2019) to calculate (1) annual retailer density by district (n = 18), (2) density by district and school income status, and (3) retailers within 500 feet of schools (n = 673) before and after regulations. Results. Observed tobacco retailer density declined by 20.3% (from 1.97 to 1.57 per 1000 daytime residents) 3 years after regulation implementation. Regression results showed a decline in the trend of retailers per 1000 daytime population (b = -0.19; 95% confidence interval[CI] = -0.23, -0.14) that was modestly but significantly greater in low-income districts (interaction b = -0.18; 95% CI = -0.25, -0.11) and a 12% decline in the rates of retailers near schools (rate ratio = 0.88; 95% CI = 0.85, 0.92) following implementation of the regulations. We did not observe similar density changes in comparable cities. Conclusions. Tobacco retailer licensing strategies can be an effective policy approach to reduce the availability of tobacco and tobacco marketing, lessen socioeconomic disparities in tobacco retailer density, and decrease the number of tobacco outlets near schools. (Am J Public Health. 2020;110:547-553. doi:10.2105/AJPH.2019.305512)

FULL TEXT

Headnote

Objectives. To evaluate changes in licensed tobacco retailers and retailer density 5 years before and 3 years after novel tobacco retailer licensing regulations were implemented in a large, urban area.

Methods. We used administrative tobacco license data (n = 23 806 licenses, 2012- 2019) to calculate (1) annual retailer density by district (n = 18), (2) density by district and school income status, and (3) retailers within 500 feet of schools (n = 673) before and after regulations.

Results. Observed tobacco retailer density declined by 20.3% (from 1.97 to 1.57 per 1000 daytime residents) 3 years after regulation implementation. Regression results showed a decline in the trend of retailers per 1000 daytime population (b = -0.19; 95% confidence interval[CI] = -0.23, -0.14) that was modestly but significantly greater in low-income districts (interaction b = -0.18; 95% CI = -0.25, -0.11) and a 12% decline in the rates of retailers near schools (rate ratio = 0.88; 95% CI = 0.85, 0.92) following implementation of the regulations. We did not observe similar density changes in comparable cities.

Conclusions. Tobacco retailer licensing strategies can be an effective policy approach to reduce the availability of tobacco and tobacco marketing, lessen socioeconomic disparities in tobacco retailer density, and decrease the number of tobacco outlets near schools. (Am J Public Health. 2020;110:547-553. doi:10.2105/AJPH.2019.305512)

Tobacco use remains the leading cause of mortality and cancer in the United States, accounting for 1 in 5 deaths annually and 29% to 40% of all cancer deaths.1,2 Despite consistent declines in smoking over the past 50 years, tobacco-related health disparities have worsened.3 Research demonstrates that marketing at the point of sale is overwhelmingly concentrated in economically disadvantaged and high-minority areas.4-8 Given that point-of-sale marketing and price discounts accounted for 86% of tobacco industry marketing expenditures in 2017,9 disparities in tobacco retailer density-and consequently in point-of-sale marketing- are particularly problematic. High retailer density has also been associated with decreased cessation success,10-12 more cigarettes smoked per day, increased youth tobacco experimentation and use,13 and more favorable social norms about tobacco.13,14

Novel policy strategies, particularly tobacco retailer licensing policies at the state or local level, are of increasing interest. Policies include but are not limited to tobacco retail license density caps (e.g., 1 tobacco retailer per 1000 people limit), tobacco-free school zones (e.g., no permits granted within 500 feet of schools), increased tobacco permit fees, and strict permit penalties for selling tobacco products to youths. Nationally, only a handful of jurisdictions have any one of these policies, and since passing licensing regulations in December 2016, Philadelphia, Pennsylvania, is the only jurisdiction with all 4 of these retailer licensing strategies in place. Recent simulation studies15-17 and preliminary health department reports18 suggest that these policy approaches will result in fewer tobacco outlets. However, studies to date have not yet empirically evaluated the effectiveness and patterns of these strategies for decreasing retailer density.

Using city tobacco licensing data from Philadelphia, we sought to evaluate the impact of a set of novel tobacco retailer licensing changes on (1) district level tobacco retailer density, (2) tobacco retail exposure within 500 feet of schools, and (3) socioeconomic differences in district density and school retailers.

METHODS

New tobacco retailer licensing regulations were passed in Philadelphia in December 2016 by Board of Health vote and implemented beginning in January 2017.19 Philadelphia had up to double the number of retailers per 1000 people (2.21) compared with other major cities-including New York City (1.15); Chicago, Illinois (0.92); San Francisco, California (1.05); and Washington, DC (1.20)20-and a large, diverse population (1.6 million residents; 40.9% African American, 14.8% Hispanic). Philadelphia's adult smoking prevalence is high (20%; Table A of the Appendix, available as a supplement to the online version of this article at http:// www.ajph.org). Tobacco retailers of any type (e.g., wholesalers, corner stores) selling any type of tobacco product (e.g., cigarettes, e-cigarettes) are required to apply for a tobacco retail license annually from the Philadelphia Department of Public Health. Licenses are specific to each business owner and location, and a new license is required if the sale or transfer of a business occurs.21 Retailers may appeal license determination decisions to an independent licensing review board, which will make a final determination of eligibility. The new regulations, which were implemented with a grandfather clause for existing retailers, included (1) a density cap of 1 retailer per 1000 daytime population for each of the 18 city planning districts, (2) smokefree school zones that prohibited new retailers within 500 feet of school property, (3) an increase in the licensing fee from $50 to $300 to fully fund the compliance program, and (4) a standardization of penalties for youth sales violations, such that after the third violation in 2 years, tobacco sales privileges are suspended and grandfather status is lost. Therefore, a reduction in current levels of tobacco retailers is observed only when existing retailers located in capped districts sell or close their business or when retailers lose sales privileges for repeated youth sales violations.

Procedures

The current study used administrative license data from the Philadelphia Department of Health's Philadelphia Tobacco Retailer Database to examine changes in licensed retailers from 2012 to 2019 (analyzed in 2019) at the district level or within 500 feet of schools. This included annual data from 5 years prior to (2012-2016) to 3 years after (2017-2019) the regulatory change. Outlet characteristics at the time the license application was submitted included store address (used for geocoding), self-reported store type (e.g., convenience store, supermarket, alcohol outlet), and the number of years retailers had held a license since 2012, when a city license requirement was implemented in addition to a state license. The current study included data on the total number of citylicensed

tobacco retailers, which does not include stores operating illegally without a license. Although reliable estimates of the number of stores operating illegally are not available, it is expected to be relatively low.

Retailer density. The data set that we constructed used 4712 unique retailers and included every year that each retailer had held a permit since 2012 (n= 23 806 licenses). Stores that changed ownership technically held multiple permits at the same location, but they were counted as 1 retailer and license for the purposes of this study. Approximately 11.1% of all licensed stores submitted at least 1 application for locations with existing licenses under different owner or legal names, suggesting an ownership change. We matched geocoded establishment addresses for each license holder to property data outlining the parcel of land the retailer was located on. We then used geocoded annual license records to determine the total number of licensed retailers each year in each of the city's 18 planning districts. We used census data (2015 5-year American Community Survey estimates) for total population and worker populations to determine each district's daytime population level, according to standard census methodology (total resident population plus total workers working in area minus total workers living in area).22 We used daytime population estimates for the density denominator, as this was specified in the regulations to account for differences in district population levels when large numbers of people commute into the city forwork.We divided total number of retailers per district by total district daytime population in thousands to create estimated annual retailer density per 1000 daytime population for each district, which we used as the primary outcome (referred to as retailer density). The final data set included annual retailer counts and densities for each district.

We used census data to determine the percentage of adults aged older than 25 years with some college (a time-invariant covariate) and the percentage of residents at or below the US Census federal poverty level (FPL) living in the census tract, which were aggregated into districts. We classified districts with more than 25% of residents at or below the FPL as low income (n= 8; % FPL range = 28.1%- 45.4%), which is in the range of US Census definitions of concentrated poverty.23 We classified all others as not low income (n= 10; %FPL range = 9.7%-24.3%), but they are not necessarily considered high income because of the overall high poverty rates (26%) in Philadelphia (section A1 of the Appendix). We used 2012-2015 data from the Southeastern Pennsylvania Household Health Survey24 to estimate district adult smoking prevalence (a time-invariant covariate) before the regulations were implemented.

School zone retailer density. We identified school property (n= 617 parcels, including public, charter, and parochial schools) using data from the School District of Philadelphia and Philadelphia City Planning Commission, which identified parcels of land on which schools or school-owned property was located (section A2 of the Appendix). We removed duplicate parcels. We included school buildings and other school property (e.g., parking lots, sports fields), matching the regulation implementation as well as youths' school exposures to tobacco retailers. We considered the school property parcels to be consistent over time because of the relatively few changes over time and the infrequency of updated data. Using Euclidean distance, we drew 500-foot school zone circular buffers around school property parcels. Following the exact procedures used by the city,21 we classified a retailer as being within the smoke-free school zone if any portion of its parcel (i.e., property boundary) intersected the school property buffer. We counted the annual number of licensed tobacco retailers in each school's smoke-free school zone and used these numbers as the outcome measure. For retailers within 500 feet of more than 1 school (n=263 in 2016), we counted how many tobacco retailers were within 500 feet for each school, hereafter referred to as school retailer exposures. We classified a school as low income if 25%of residents in its zip code were at or below the FPL (section A1 of the Appendix).

Data for comparable cities. We collected data from local and state health departments for comparable cities, including Baltimore City, Maryland; Boston, Massachusetts; Chicago, Illinois; Milwaukee, Wisconsin; and Minneapolis, Minnesota. Localities varied in the amounts of historical data available (2012- 2019). We calculated citywide licensed retailers per 1000 daytime population residents for each city for each available year, and we used this number to examine secular trends in tobacco retail licenses.

Statistical Analysis

We calculated descriptive statistics for tobacco retailers by income and school zone status. To account for

nonindependence of districts' repeated measures, we used a linear mixed effects model with a random intercept for district to determine if there was a change over time in retailer density after the regulations were passed. Residuals showed no evidence of spatial autocorrelation (Moran's I = 0.09; P= .17). The 2 covariates were district-level adults with some college and district-level adult smoking prevalence. Count of retailers near schools was not normally distributed. Because of evidence of spatial autocorrelation in the school retailer count outcome and model residuals, we used a Bayesian structured additive regression with a Poisson distribution (logarithmic link function) to determine if there was a change over time in the count of retailers near schools after the regulations were passed. The model included a random intercept for school and a spatial effect to control for spatial autocorrelation, and we examined the model's fit (see section A3 of the Appendix for details). School zone model parameters are expressed as rate ratios (rate reductions in counts of school zone retailers per year).

We included time and intervention parameters according to a recommended interrupted time series specification.25 Specifically, we included 3 variables: (1) treatment: a binary variable indicating whether the year was before or after the regulations passed (interpreted as level changes at the time the regulations passed); (2) time: a continuous variable coded 1 to 8 for each year of data (interpreted as time trends prior to the regulation implementation); and (3) time since treatment: a continuous variable coded 0 prior to the regulations and 1 to 3 for the 3 years after the regulations passed (interpreted as trend or slope changes after regulation implementation). For socioeconomic analyses, we added 2 interaction terms with district income status: posttreatment trend (i.e., time since treatment) and time (i.e., to allow for preregulation trend differences).We performed 2 robustness checks, which did not change the results: (1) excluding 2012 as the first year the city license requirement was implemented, and (2) changing the lowincome threshold of residents at or below the FPL to 20% or 30%. We examined secular trends by calculating trends in tobacco retailers per 1000 daytime residents in comparable cities. To inform whether the regulations or other ongoing social processes may have contributed to tobacco outlet distribution changes, we compared Philadelphia's density per 1000 daytime residents with those of other comparable cities using a difference-in-differences approach. The model included treatment, time, and time since treatment parameters as well as 2 additional terms: interactions with city and time to allow for differences in preregulation trends and with city and postregulation slope (i.e., the difference-in-differences estimate of the effect). We analyzed data using R version 3.3.0 (R Foundation, Vienna, Austria). We fitted the Bayesian structured additive regression models for schools by full Bayesian inference using Markov chain Monte Carlo simulation methods, which allow for random samples to be drawn from posterior distributions. We used positive hyperparameters (a = b = 0.001). We used a total of 50 000 Markov chain Monte Carlo iterations with the first 10 000 samples as the burn-in period, and we used a final sample of 2500 for posterior parameter estimates. We used the posterior distribution to obtain the 95% credible intervals, and we exponentiated the estimated parameters. We analyzed Bayesian models using the BayesX package.

RESULTS

Tobacco retailers in Philadelphia at baseline in 2016 were predominantly small convenience stores (51.9%) such as corner stores, gas stations, and groceries, and had held a permit for a mean of 6.6 of 8 possible years (Table 1). More tobacco retailers in lowincome areas identified as convenience stores and take-out restaurants compared with notlow- income areas (Table 1). More tobacco retailers in not-low-income districts identified as alcohol or tobacco outlets, pharmacies, or supermarkets (Table 1). Retailer characteristics 3 years after regulation implementation were similar (Table B of the Appendix).

Retailer Density

Compared with 2016, observed retailer density showed a 20.3% reduction (from 1.97 to 1.57 per 1000 daytime residents) 3 years after implementation (Table 2; Figure 1). Regression results showed that there was a significant decline in the trend of retailer density over time following the regulation implementation (i.e., posttreatment slope change; b= -0.19; 95% confidence interval [CI] = -0.23, -0.14; P <.01). Prior to the regulations, there was a significant increasing trend of retailer density over time (b = 0.05; 95% CI= 0.04, 0.07; P <.01).

Tobacco-Free School Zones

The observed average annual counts of retailers within 500 feet of a school are shown in Table 2 and Figure 2.

Compared with 2016, there was a 22.1% reduction (from 2.62 to 2.04 per 1000 daytime residents) in the average count of school zone retailers 3 years after implementation. This translated to an estimated 84 300 youths from over 200 schools and school properties who cumulatively experienced more than 300 fewer tobacco retailer exposures near their schools in the 3 years following regulation implementation. This included an estimated 10 500 youths from 32 schools whose tobacco retailer exposure near their school declined to zero. Regression results showed that prior to the regulations, there was a 4%increase per year in the count of school zone retailers (rate ratio [RR] = 1.04; 95% CI= 1.02, 1.05). Following the regulations, there was an 12% decline in the rate change (i.e., posttreatment slope) of school zone retailers per year (RR= 0.88; 95% CI= 0.85, 0.92).

Socioeconomic Status

Compared with 2016, observed retailer density in low-income districts showed a 20.7% reduction (from 2.76 to 2.19 per 1000 daytime residents) 3 years after regulation implementation and a 19.4% reduction (from 1.44 to 1.16 per 1000 daytime residents) in not-low-income districts (Table 2; Figure 1). Regressions results, including interactions between income status and pre- and postregulation trends over time, showed that this difference in rate reduction was modestly but significantly greater in low-income districts compared with not-low-income districts (interaction b= -0.18; 95% CI= -0.25, -0.11; P <.01; section A1 of the Appendix). No effect modification by income status was observed in school zones.

Secular Changes

Key demographics and trends in tobacco retailer licenses across other comparable UScities (FigureAof the Appendix) generally showed stable secular trends over time. Difference- in-differences results showed that Philadelphia had a significantly reduced rate of tobacco retailers after implementation of the regulations compared with other major cities during that time (b = -0.26; 95% CI= -0.35, -0.17; P <.001).

DISCUSSION

This is the first empirical study of the impact of tobacco retailer license regulations on licensed tobacco retailer density. There were 3 key findings from the study.

First, the trend of licensed tobacco retailer density significantly declined 3 years after the regulations were implemented. This reduction amounted to over 650 (20%) fewer licensed tobacco retail locations after 3 years, suggesting that license regulation changes can be an effective way to reduce the availability of tobacco and consequent tobacco advertising. Observed 1-year reductions (6.1%) are comparable with those found in a preliminary report of 1-year reductions (9%) following San Francisco's tobacco retailer license changes and may be lower because the current study accounted for ownership changes.18 There have been no prior peer-reviewed studies of the impact of tobacco retailer licensing changes. However, simulation studies suggest that tobacco license regulations may be effective in reducing tobacco availability and modestly reducing smoking prevalence, and would be cost-saving to the health system.15-17 The fact that retailer density declined after regulation implementation-compared with an increasing trend prior to implementation-is encouraging. Importantly, results showed that Philadelphia had significantly sharper declines in licensed retailers after implementation compared with other similar cities, offering further evidence that these tobacco retailer reductions were attributable to the regulations rather than to other social processes. In addition, a reduction in tobacco retailers could improve resources available for compliance efforts. However, despite these improvements, the number of tobacco retailers remained high (1.57 per 1000 daytime residents, or over 2500 retailers citywide), which emphasizes the need for additional and complementary approaches to reducing the negative health impact of tobacco.

Second, results from the current study demonstrated that, from 2016 to 2019, postregulation reductions in tobacco retailer density in low-income districts, although small, were significantly greater than in notlow- income districts. This pattern did not hold near schools where there was no evidence of differences in low-income versus not-low-income schools. This is in contrast with the income patterns prior to regulation implementation. Furthermore, over time the density cap of 1 retailer per 1000 daytime residents will more than halve the number of retailers in low-income districts compared with not-low-income districts, which are closer to meeting the cap (2.76 vs 1.44 per 1000 residents in 2016, respectively). Overall, these patterns translate into larger improvements in low-income compared

with highincome districts, or a pro-equity effect, and may most benefit disadvantaged neighborhoods, in which residents encounter other challenges, such as reduced access to health care and cessation support, and may not benefit from some other tobacco control policies. These results are partially consistent with a simulation study that showed that retail density reductions halved the disparity between low- and high-income communities and were most effective when multiple or multifaceted policies were implemented,15 as was the case in Philadelphia. Although no empirical studies have examined the impact of license regulations by income status, there is a robust literature documenting the disproportionately high number of tobacco retailers in low socioeconomic neighborhoods.5,8,26,27 Furthermore, with the exception of some price changes, tobacco control policy strategies to date have yet to improve disparities28 or cessation.29 As a result of existing disparities in retailer density, and consequently in exposure to tobacco marketing and advertising, the current study results suggest that retailer licensing strategies can have a pro-equity effect through reducing density more in lowversus high-socioeconomic areas. However, the pro-equity potential of retailer licensing strategies is heavily based on specific, local retail environments, regulations, and implementation decisions, which have not yet been studied and for which there is little guidance for best practices.

Third, the current study demonstrated significant reductions in the number of tobacco outlets within 500 feet of school property after the regulations took effect. Three years after implementation, an estimated 84 300 youths from over 200 schools in Philadelphia benefited from a reduction in tobacco retailers near their schools, including over 10 500 youths who had their school zone exposure drop to zero. This is particularly encouraging given some literature demonstrating high tobacco retailer density near schools in low-income and high-minority areas.26 Although youth cigarette smoking continues to decline, use of other tobacco products among youths, such as cigarillos and electronic tobacco products, is increasing nationally.30 The current policy approach- in which tobacco licenses are carefully regulated with regard to density, placement near schools, and compliance with youth sales laws-is particularly promising in that it addresses all forms of tobacco. In addition, youths remain targeted by location of tobacco outlets near schools,5 placement of tobacco products near candy,5 and concentrated point-of-sale marketing where youths shop,31 emphasizing the need to limit youth exposure to tobacco products in retail environments. However, it may be many years before true tobacco-free school zones are achieved because of the grandfathering status of existing retailers near schools. Results from the current study suggest that tobacco retailer license regulations may be effective strategies to protect youths from exposure to all types of tobacco products.

Strengths and Limitations

Strengths of the current study include the use of tobacco retailer licensing data spanning 8 years in a large, diverse city, and the examination of a set of novel, complementary tobacco retailer license policies. The study also has several limitations, including the reliance on aggregated retailer counts rather than individual retailer license data for some comparison cities, lack of data on compliance with license regulations (i.e., selling tobaccowithout a permit), the inability to fully disentangle effects fromthe multiple regulations enacted at the same time, the lack of historical data on school property, and the reliance on data not collected for research purposes, which had limited data on othermeasures of interest.However, the use of administrative data is also a strength of the study and likely to be the best data option available, given the potential for out-of-date information from commercially available sources. Results from Philadelphia may not generalize to other large cities because of the city's distinct tobacco retail environment; there may also be other unmeasured social processes influencing tobacco outlet distribution over time, although these are expected to be similar across Philadelphia and comparison cities.

Public Health Implications

The current study is the first empirical study of the impact of tobacco retailer license regulations. It provides urgently needed data regarding a salient tobacco control policy approach that may lessen disparities over time and includes comparable data fromother cities. The study demonstrated that 3 years after tobacco retailer license regulations in Philadelphiawere passed, therewas a 20%decline in the density of tobacco retailers, a modest reduction inthe disparity in tobacco retail density in low-income versus not-low-income districts, and over 300 fewer retailer exposures within 500 feet of school property. If the results can be replicated, tobacco retailer licensing strategies

may be an effective policy approach to reduce the availability of tobacco and tobacco marketing and advertising and decrease tobacco-related disparities in low socioeconomic communities.

CONTRIBUTORS

H. G. Lawman was responsible for drafting the article, conducting analyses, and overseeing data management. H. G. Lawman and A. A. Strasser conceptualized and designed the study. A. Scheeres and A. Hillengas were responsible for data management and analysis. K. A. Henry was responsible for data analysis. R. Coffman was responsible for overseeing policy implementation and data collection. All authors critically reviewed and approved the article.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

HUMAN PARTICIPANT PROTECTION

The Philadelphia Department of Public Health determined that this study did not qualify as human participant research.

Sidebar

ABOUT THE AUTHORS

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References

REFERENCES

1. US Dept of Health and Human Services. The health consequences of smoking-50 years of progress. A report of the surgeon general. Executive summary. 2014. Available at: https://www.surgeongeneral.gov/library/ reports/50-years-of-progress/exec-summary.pdf. Accessed January 28, 2020.

2. Lortet-Tieulent J, Sauer AG, Siegel RL, et al. Statelevel cancer mortality attributable to cigarette smoking in the United States. JAMA Intern Med. 2016;176(12): 1792-1798.

3. US Dept of Health and Human Services. Health, United States, 2016 with chartbook on long-term trends in health. 2017. Available at: https://www.cdc. gov/nchs/data/hus/hus16.pdf. Accessed January 28, 2020.

4. Novak SP, Reardon SF, Raudenbush SW, Buka SL. Retail tobacco outlet density and youth cigarette smoking: a propensity-modeling approach. Am J Public Health. 2006;96(4):670-676.

5. Hillier A, Chilton M, Zhao QW, Szymkowiak D, Coffman R, Mallya G. Concentration of tobacco advertisements at SNAP and WIC stores, Philadelphia, Pennsylvania, 2012. Prev Chronic Dis. 2015;12:E15.

6. Luke D, Esmundo E, Bloom Y. Smoke signs: patterns of tobacco billboard advertising in a metropolitan region. Tob Control. 2000;9(1):16-23.

7. Lovato CY, Hsu HCH, Sabiston CM, Hadd V, Nykiforuk CIJ. Tobacco point-of-purchase marketing in school neighbourhoods and school smoking prevalence: a descriptive study. Can J Public Health. 2007;98(4):265-270.

8. Lee JGL, Henriksen L, Rose SW, Moreland-Russell S, Ribisl KM. A systematic review of neighborhood disparities in point-of-sale tobacco marketing. Am J Public Health. 2015;105(9):e8-e18.

9. Federal Trade Commission. FTC releases reports on cigarette and smokeless tobacco sales and marketing expenditures for 2017. 2019. Available at: https://www.ftc. gov/news-events/press-releases/2019/02/ftc-releasesreports- cigarette-smokeless-tobacco-sales-marketing. Accessed January 28, 2020.

10. Reitzel LR, Cromley EK, Li Y, et al. The effect of tobacco outlet density and proximity on smoking cessation. Am J Public Health. 2011;101(2):315-320.
11. Kirchner TR, Cantrell J, Anesetti-Rothermel A, GanzO, Vallone DM, Abrams DB. Geospatial exposure to point-of-sale tobacco: real-time craving and smoking-cessation outcomes. Am J Prev Med. 2013; 45(4):379-385.
12. Pulakka A, Halonen JI, Kawachi I, et al. Association between distance from home to tobacco outlet and smoking cessation and relapse. JAMA Intern Med. 2016; 176(10):1512-1519.
13. Henriksen L, Feighery EC, Schleicher NC, Cowling DW, Kline RS, Fortmann SP. Is adolescent smoking related to the density and proximity of tobacco outlets and retail cigarette advertising near schools? Prev Med. 2008; 47(2):210-214.
14. Schleicher NC, Johnson TO, Fortmann SP, Henriksen L. Tobacco outlet density near home and school: associations with smoking and norms among US teens. Prev Med. 2016;91:287-293.
15. Luke DA, Hammond RA, Combs T, et al. Tobacco town: computational modeling of policy options to reduce tobacco retailer density. Am J Public Health. 2017; 107(5):740-746.
16. Myers AE, Hall MG, Isgett LF, Ribisl KM. A comparison of three policy approaches for tobacco retailer reduction. Prev Med. 2015;74:67-73.
17. Pearson AL, Cleghorn CL, van der Deen FS, et al. Tobacco retail outlet restrictions: health and cost impacts from multistate life-table modelling in a national population. Tob Control. 2016;Epub ahead of print September 22, 2016.
18. Bright Research Group. Reducing tobacco retail density in San Francisco: a case study. 2016. Available at: https://sanfranciscotobaccofreeproject.org/wp-content/ uploads/Retail-Density-Case-Study-1.27.16-FINALto-TFP.pdf. Accessed January 28, 2020.
19. Giordano R. Philadelphia's Board of Health adopts restrictions on tobacco sales. Philadelphia Inquirer. September 8, 2016. Available at: https://web.archive.org/ save/https://www.inquirer.com/philly/news/politics/ 20160909_Philadelphia_s_Board_of_Health_adopts_ restrictions_on_tobacco_sales.html. Accessed January 28, 2020.
20. Coffman R. Tobacco Retailers in Large Municipalities. Philadelphia, PA: Department of Public Health; 2016.
21. City of Philadelphia. Get a tobacco retailer permit. 2019. Available at: https://www.phila.gov/services/ permits-violations-licenses/get-a-license/businesslicenses- permits-and-approvals/tobacco-retailers/get-atobacco- retailer-permit. Accessed January 28, 2020.
22. US Census Bureau. Calculating commuter-adjusted population estimates. Available at: https://www.census.gov/topics/employment/commuting/guidance/ calculations.html. Accessed January 28, 2020.
23. Bishaw A. Areas With Concentrated Poverty: 2006-2010. Vol 9. Washington, DC: US Dept of Commerce, Economics and Statistics Administration; 2011.
24. Public Health Management Corporation. Southeastern Pennsylvania Household Health Survey. 2019. Available at: http://www.chdbdata.org/householdhealth- survey. Accessed January 28, 2020.
25. Wagner AK, Soumerai SB, Zhang F,Ross-Degnan D. Segmented regression analysis of interrupted time series studies in medication use research. J Clin Pharm Ther. 2002;27(4):299-309.
26. D'Angelo H, Ammeman A, Gordon-Larsen P, Linnan L, Lytle L, Risbisl KM. Sociodemographic disparities in proximity of schools to tobacco outlets and fast-food restaurants. Am J Public Health. 2016;106(9):1556-1562.
27. Johns M, Sacks R, Rane M, Kansagra SM. Exposure to tobacco retail outlets and smoking initiation among New York City adolescents. Urban Health. 2013;90(6): 1091-1101.
28. Hill S, Amos A, Clifford D, Platt S. Impact of tobacco control interventions on socioeconomic inequalities in smoking: review of the evidence. Tob Control. 2014; 23(e2):e89-e97.
29. Zhu S-H, Lee M, Zhuang Y-L, Gamst A, Wolfson T. Interventions to increase smoking cessation at the population level: how much progress has been made in the last two decades? Tob Control. 2012;21(2):110-118.
30. Gentzke AS. Vital signs: tobacco product use among middle and high school students-United States, 2011-2018. MMWR Morb Mortal Wkly Rep. 2019;68(6): 157-164.

31. Henriksen L, Feighery EC, Schleicher NC, Haladjian HH, Fortmann SP. Reaching youth at the point of sale: cigarette marketing is more prevalent in stores where adolescents shop frequently. Tob Control. 2004;13(3): 315-318.

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Understanding Police Violence as a Mutual Problem/Comments

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ABSTRACT (ENGLISH)

This past Thanksgiving, I was in Chicago visiting family when a cellphone video of a police officer taking down a man hit the local airwaves. The images showed an officer using an emergency maneuver that resulted in the man's head hitting the pavement. There was an immediate outcry; it was said that the takedown was unwarranted, yet another case of "rogue policing." Lost in the clamor was that the man was intoxicated and had verbally threatened, licked, and spit on the officer. The man further refused ambulance transport, and the officers themselves took him to the hospital for care. At the time of this writing, two officers remain under investigation, while the man was bailed out of jail (he had outstanding parole violations) amid claims that he was "thrown onto the sidewalk with no regard for his life" (https://bit.ly/37piikW).

Is this another example of police violence or simply an officer trying to protect himself? If all politics are local, then most opinions are personal. I will freely admit that my view of law enforcement comes from more than 20 years of working night shifts in the emergency department, watching officers and deputies protect society's most vulnerable. To be quite honest, I am most often impressed at the restraint police officers exhibit when dealing with violent and abusive people and when faced with imminent threats to life and limb. The idea that unthinking violence is somehow basic to law enforcement system seems contradictory to my lived experience. Individuals and institutions within the law enforcement community want to do right, and while one might argue that they do so not out ofgoodness but out of fear of public backlash, everyone recognizes that law enforcement officers can only do theirjob well if they do so with restraint, impartiality, and integrity. There are bad cops, just as there are those ill-suited to any profession, and sometimes people who clearly do not belong in police work can slip through the cracks. But it is a certainty that within law enforcement nobody likes a bad cop.

FULL TEXT

This past Thanksgiving, I was in Chicago visiting family when a cellphone video of a police officer taking down a man hit the local airwaves. The images showed an officer using an emergency maneuver that resulted in the man's

head hitting the pavement. There was an immediate outcry; it was said that the takedown was unwarranted, yet another case of "rogue policing." Lost in the clamor was that the man was intoxicated and had verbally threatened, licked, and spit on the officer. The man further refused ambulance transport, and the officers themselves took him to the hospital for care. At the time of this writing, two officers remain under investigation, while the man was bailed out of jail (he had outstanding parole violations) amid claims that he was "thrown onto the sidewalk with no regard for his life" (https://bit.ly/37piikW).

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WHAT IS POLICE VIOLENCE?

Part of the problem is that we do not know what "police violence" really is or the true scope of the problem. Obasogie and Newman note that the exact definition of police violence is vague, and is most often a subjective interpretation of the constitutional minimum that the "use of force must be reasonable. "1(p286)

Statistics on police violence as a whole are hard to come by, but data on police shootings are more available. The 2015 Police Violence report from the Mapping Police Violence Web site indicates that there were 1152 people killed in police shootings that year. The context of the event is also important: more than 1000 of these fatalities were reported to be armed (https:// mappingpoliceviolence.org). In these cases, a true threat may well have been perceived at the moment of the use of deadly force. The threat to law enforcement officers is real; 42 officers were killed by gunfire in 2015 (https://n.pr/2rEKFg8).

While research clearly shows that racial minorities are disproportionately more likely to be the recipients of deadly force, other works describe the disparity in prevalence as a result of the assumption that Blacks and Whites are equally likely to encounter police. It seems a reasonable middle ground to presume that these disparities, while unquestionably present, themselves are a function of the population encountered by law enforcement; unfortunately, this population is highlighted by overrepresentation of racial and ethnic minorities rooted in socioeconomic factors also common to disparities in income, education, and health.

What is "reasonable force" is in the eye of the beholder, and more often than not that beholder is a Monday-morning quarterback of a situation they never truly understand. It is easy to jump on the bandwagon that police are agents ofviolence while one is sitting in the stands.

NEEDINGEACH OTHER

That is why I am surprised that the public health community, which places value in community, collaboration, and understanding stakeholders' views, writes in the first sentence of the 2018 American Public Health Association (APHA) policy "Addressing Law Enforcement Violence as a Public Health Issue," that "Physical and psychological violence that is structurally mediated by the system oflaw enforcement results in deaths, injuries, trauma, and stress that disproportionately affect marginalized populations . . ." (https://bit.ly/37iFrFD). The text of the document reinforces this adversarial message while failing to recognize any of the challenges of police work.

While the position statement does make positive recommendations, most notably the need to address the underlying social determinants of health, those points are lost in the rhetoric sure to set law enforcement on the defensive. That is not the way to build collaboration. It is no wonder that the Statement of Policy on Police Violence and Racism from the National Association of County and City Health Officials (NACCHO), a group comprising public health leaders

who work with law enforcement on a daily basis, takes a much different tone, emphasizing understanding ofpolice roles and mutual collaboration while making similar points (https:// bit.ly/2TBrYW8). Surprisingly, the hostility espoused by the APHA does not seem to exist on the law enforcement side, with works highlighting ways in which our worlds can align and support one another through growing awareness of our interconnections.2 5

SOLUTIONS

There is no doubt that police departments can do better. Obasogie and Newman provide a content analysis ofuse-of-force policies that provides a theoretical grounding for terms and conditions that apply to these critical incidents.1 The Mapping Police Violence project has also demonstrated that changes in use-of-force policies can decrease the numbers of fatalities that result from police shootings. Effective measures include requiring officers to use all other means before shooting, requiring that all use of force be reported, banning chokeholds and strangleholds, establishing a continuum for the use of force, and requiring that de-escalation techniques be brought into play (https://mappingpoliceviolence. org). Each of these measures has its own implications for officer selection and training, and they appear to be measures that may be agreed to by all parties with a minimum of disruption to current law enforcement programming. More importantly, they can be promoted in a spirit of collaboration to concurrently reduce risks to both police officers and the community. I believe that these measures are best advocated at the community level, where relationships between local officials already exist, with public health agencies taking the lead in establishing community consensus around workable solutions.

A few years ago, NACCHO developed a badge-shaped logo to represent public health (https:// bit.ly/37mfWnh). The shape linked us to the other members of the public protection family who wear the badge, including fire safety, emergency medical services, and law enforcement. And the family does a lot better around the Thanksgiving table engaging in mutually supportive dialogue than in hurling invective at the quality of the stuffing.

Making police violence an issue of inherent bad faith and racism, where one party is thought morally superior to the other, does not facilitate solutions. Understanding police violence as a mutual problem to be resolved just might.

Â1PU

Howard Rodenberg, MD, MPH

CONFLICTS OF INTEREST

The author has no conflicts of interest to declare.

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REFERENCES

1. Obasogie OK, Newman Z. Police violence, use offorce policies, and public health. Am J Law Med. 2017;43(2-3):279-295.

2. Robert V. Wolf Center for Court Innovation. Law enforcement and public health. February 2012. Available at: https:// www.courtinnovation.org/sites/default/ files/documents/LawEnfPubHealth.pdf Accessed February 12, 2020.

3. Shepherd JP, Sumner SA. Policing and public health-strategies for collaboration. JAMA. 2017;317(15):1525-1526.

4. van DijkA, Crofts N. Law enforcement and public health as an emerging field. Policing Soc. 2017;27(3):261-275.

5. van Dijk AJ, Herrington V, Crofts N, et al. Law enforcement and public health: recognition and enhancement ofjoinedup solutions. Lancet. 2019;393(10168): 287-294.

Keon Gilbert Comments

Police-involved shootings challenge our thinking about the intersections of race, gender, class, and place, which are embedded in everyday practices and policies governing law enforcement. The Mapping Police Violence (MPV) Web site estimated that 1164 people in the United States were killed by police in 2018.1 Howard Rodenberg's essay (p.

456) reflects a collective cognitive dissonance that comes with new reports of officer-involved shootings that structure four socially accepted views: (1) police are good and serve our communities to ensure safety; (2) police have dangerous and stressful jobs; (3) training, ethics, and values guide police behaviors; and (4) if you are arrested, hurt, or killed by police-these "justify" use of force.

Evidence documenting police-involved shootings challenge these views and are less understood because ofthe lack of data collected over time and across all police agencies, limiting the precision and magnitude of estimates. MPV reported 104 unarmed Black people being killed by police in 2015. What is not reported in Rodenberg's comments is that unarmed Black people are five times more likely than White people to be killed by police. In 2015, 50 police officers were shot and killed, while many more died resulting from other causes such as suicide.2 Is it the general community or just Black and Brown residents who are the risk to police? As crime rates decline, policing in poor, Black, and Brown neighborhoods increases, and this becomes a fatal risk for being killed by police in those neighborhoods.3

Rodenberg's essay stems from an incident with Bernard Kersh in Chicago, Illinois, which exemplifies the lack of police training to identify mental health conditions and a perspective that treatment can be received in the criminal justice system. Months before Kersh was body-slammed by police, in Prince George's County, Maryland, Leonard Shand was shot by 10 officers after being described as talking loudly, holding knives, and disoriented. Police attempted to use less lethal methods to get Shand to release the knives and to get him medical attention; this was not the case with Kersh. Police use-of-force continuums were argued in City and County of San Francisco v Sheehan,4 which left the Supreme Court to provide immunity to officers, but did not provide any additional guidance about the useof-force continuum generally or in cases when engaging someone with a mental illness, like in the Kersh and Shand incidents. There is a lack of standard definitions of police violence and use of force,5 although the President's Task Force on 21st Century Policing has asked for such clarity to be developed that can modernize existing language in the Fourth Amendment.

The use-of-force continuum Rodenberg suggests should become standards upheld by all police agencies, and there is a need for clear processes to manage violations. Framing these violators as "good" and victims as "bad" becomes a mechanism to allow language softening the reality that an injury or death has occurred. Biased applications of policing are rewarded, and a rhetoric to justify excessive use of force defines institutional racism in the criminal justice enterprise. Impunity is further established within agencies as other officers are prohibited to report misconduct for fear of falling out of the blue code of protection and being subjected to occupational and professional hazards. A vicious cycle is created when recruiting and training officers who adhere to a "warrior" mentality, according to experts at a Brookings symposium.6 A hypermasculine professional identity emerges, disallowing opportunities to address implicit and overt bias.

Reform in policing has to take place before a larger-scale rejection of police occurs as tax dollars support restitution payments to individuals or families who experienced officer-involved shootings or injuries. A critical race approach challenges the laws, policies, and practices ofpolicing and suggests new ways to collect and analyze data, improve training, and articulate the role of scholars and practitioners.7 A new objective has to be established at a national level: to minimize officer-involved shootings and the community trauma that becomes a byproduct leading to a public health crisis. Â1PU

Keon L. Gilbert, DrPH, MA, MPA

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The author has no conflicts of interest to disclose.

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REFERENCES
1. Mapping Police Violence. Available at: https://mappingpoliceviolence.org. Accessed January 13, 2020.
2. Peeples L. What the data say about police shootings. How do racial biases play into deadly encounters with the police? Researchers wrestle with incomplete data to reach an answer. Nature. 2019;573:24-26.
3. Johnson O, St Vil C, Gilbert KL, Goodman M, Johnson CA. How neighborhoods matter in fatal interactions between police and men of color. Soc Sci Med. 2019;220:226-235.
4. Alito S. City and County of San Francisco, California, etai. v Sheehan, 575 US 13-1412 (2015). Available at: https://www. supremecourt.gov/ opinions/14pdf/131412_0pl1.pdf AccessedJanuary 13, 2020.
5. Obasogie OK, Newman Z. Police violence, use of force policies, and public health. Am J Law Med. 2017;43(2-3): 279-295.
6. Miller J, Ray R. Highlights: improving police culture in America. November 4, 2019. Available at: https://www. brookings.edu/blog/up-front/2019/11/ 04/highlights-improving-police-culturein-america. Accessed January 13, 2020.
7. Gilbert KL, Ray R. Why police kill Black males with impunity: applying Public Health Critical Race Praxis (PHCRP) to address the determinants of policing behaviors and "justifiable" homicides in the USA. J Urban Health. 2016;93(suppl 1):122-140.

DETAILS

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Machine Learning and Medical Appointment Scheduling: Creating and Perpetuating Inequalities in Access to Health Care/Comments

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ABSTRACT (ENGLISH)

We are deeply concerned about how machine learning and algorithms create and perpetuate inequalities in health. We are to believe that algorithms are developed to ensure that no one will have an unfair advantage over anyone else and that human bias is removed from decisionmaking. Sounds good in theory.

In real-life circumstances- such as medical diagnoses and policies that determine access to health care and social services or where your child is placed in school-algorithms can separate populations into groups of haves and have-nots along racial lines, exacerbating the racial disparity experienced by the different groups. Algorithms can determine the health of entire communities. Invisible to most of us, algorithms are described as the great equalizers. However, unlike people, all algorithms are not created equal. Scheduling a medical appointment is the most common way for patients to access a health provider: a patient asks for an appointment and is given a day and time to see a doctor. If she's on time, she expects that she'll be seen at or about the time of her appointment. Straightforward and fair? Or not? Our recent study1 argues that state-of-theart appointment scheduling algorithms may, in fact, contribute to racial disparities, because they make Black patients wait longer than non-Black patients. In our study, in which we examined electronic scheduling systems in safety net clinics, we revealed how racial bias is woven into the algorithms of electronic health records scheduling systems. To understand how this happens, consider how modern appointment scheduling systems work. To maximize efficiency, most outpatient clinics overbook some of their appointment slots, that is, they give the same appointment time to more than one patient.

Overbooking is meant to ensure that providers are fully utilized even if some patients fail to show up for their scheduled appointment. However, ifpatients who are scheduled in overbooked slots do show up, some of them will experience waiting time at the clinic because the provider can see only one patient at a time.

FULL TEXT

We are deeply concerned about how machine learning and algorithms create and perpetuate inequalities in health. We are to believe that algorithms are developed to ensure that no one will have an unfair advantage over anyone else and that human bias is removed from decisionmaking. Sounds good in theory.

In real-life circumstances- such as medical diagnoses and policies that determine access to health care and social services or where your child is placed in school-algorithms can separate populations into groups of haves and have-nots along racial lines, exacerbating the racial disparity experienced by the different groups. Algorithms can determine the health of entire communities. Invisible to most of us, algorithms are described as the great equalizers. However, unlike people, all algorithms are not created equal. Scheduling a medical appointment is the most common way for patients to access a health provider: a patient asks for an appointment and is given a day and time to see a doctor. If she's on time, she expects that she'll be seen at or about the time of her appointment. Straightforward and fair? Or not? Our recent study1 argues that state-of-theart appointment scheduling algorithms may, in fact, contribute to racial disparities, because they make Black patients wait longer than non-Black patients. In our study, in which we examined electronic scheduling systems in safety net clinics, we revealed how racial bias is woven into the algorithms of electronic health records scheduling systems. To understand how this happens, consider how modern appointment scheduling systems work. To maximize efficiency, most outpatient clinics overbook some of their appointment slots, that is, they give the same appointment time to more than one patient. Overbooking is meant to ensure that providers are fully utilized even if some patients fail to show up for their scheduled appointment. However, ifpatients who are scheduled in overbooked slots do show up, some of them will experience waiting time at the clinic because the provider can see only one patient at a time.

Modern appointment scheduling systems decide which patients to overbook through machine learning: when a patient is given an appointment, a machine-learning algorithm predicts his or her individual probability of showing up for the appointment at the scheduled time-the show-up probability. It can be shown that to maximize efficiency, a clinic should overbook the patients with the lowest show-up probability. Although the purpose is to optimize provider time and clinic revenue, unfortunately, these same algorithms overbook Black patients, forcing them to wait longer. Built into machine learning, apparently, is that for Black patients, timely, quality care can wait.

Significant amounts of data factor into the calculation of a patient's show-up probability: sociodemographic information, the patient's past no-shows, the number of past appointments, how far in advance the appointment is scheduled, and so on. Critically, it is well known that lower show-up probabilities are correlated with factors typically associated with less advantaged socioeconomic status: limited transportation, lack of health insurance, and inconsistent employment, to name a few. In this safety net clinic, Black patients are overrepresented at the lower socioeconomic status level.

Some studies show that Black patients are less likely to show up; other studies show that the patients that are least likely to show up should be overbooked; we connected the dots.

We were honored to work with coauthors Shannon Harris of Virginia Commonwealth University and Haibing Lu and Michael Santoro of Santa Clara University on "Overbooked and Overlooked: Machine Learning and Racial Bias in Medical Appointment Scheduling,"1 in which we revealed how racial bias is woven into the algorithms of electronic health records scheduling systems. Our concern is that patients least able to afford waiting are forced to wait longer to be seen by providers and that these patients may in fact leave before being seen, perhaps never to return until their health conditions have worsened. Black patients are overbooked, not because they're Black but because of the lived experiences of being Black and having a low income. However, their failure to show up for appointments can be conflated with race and incorporated into algorithms in the name of efficiency.

Our study developed a solution method to address racial disparity by modifying the objective of the scheduling

algorithm. Essentially, instead of optimizing the in-clinic waiting time of the general patient population, our method optimizes the in-clinic waiting time of the group that is worse off. This way, we remove disparities between the different groups. When tested on the data set of a large specialty clinic whose Black patients have a lower show-up probability than non-Black patients, our proposed solution method can build schedules without any racial disparity and without any negative impact on clinic efficiency.

In other words, we showed that it is possible to achieve efficiency without adversely affecting patients. More importantly, it is possible to factor the experiences of a disadvantaged population into algorithms in a way that promotes equity.

Our study suggests that there are ways that machine learning and optimization can be used for the benefit of all patients, without leaving anyone behind. ÂfPH

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CONTRIBUTORS

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REFERENCES

1.Samorani M, Harris S, Blount LG, Lu H, Santoro MA. Overbooked and overlooked: machine learning and racial bias in medical appointment scheduling. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3467047. Accessed January 14, 2020.

Howard Rodenberg Comments

No one of good faith can dispute that lack ofaccess to care is a significant problem or that health disparities plague minority and marginalized populations. In their article, Samorani and Blount (p. 440) ably suggest how algorithm-based safety net clinic scheduling appointment programs may negatively affect in-clinic waiting times and access to care.1 But their conclusion that embedded within these programs is the idea that "for Black patients, timely, quality care can wait" and that "racial bias is woven into the algorithms" is language that obscures the specific challenges posed by artificial intelligence (AI) systems.

An AI system does not in and of itself reflect any moral view. As the authors note, in the context of clinic scheduling the system will simply look at the demographics of who shows up for appointments and who does not and, based on its review, will determine a probability. In broad terms, if your no-show rate is 50% or higher in a population, it makes sense to double-book patients in that population, as the chances are that at least one patient will show up and the time slot will not go unused. Research has illustrated that the probability of being a no-show is often linked to lower socioeconomic status, and undoubtedly minority and marginalized populations are overrepresented in this group.2-4 Assuming these trends in the literature reflect the larger world, an AI algorithm will simply respond to the demographics in its captive population.

Samorani and Blount's contentions are also hampered by the lack of a clear impact. If further study reveals that prolonged in-clinic waiting times associated with AI scheduling systems significantly affect care, then there's evidence for change. But for now, proof of impact remains unknown.

The authors present their own solution to eliminate racial disparities in waiting times by modifying scheduling algorithms to minimize the in-clinic waiting time of the group expected to wait the longest. Testing in a clinic data set indicated that this model may improve wait time disparities with no impact on clinic efficiency.

But are there better ways to address patient scheduling to decrease waiting times and minimize disparities in access

to care? We might redirect scheduling algorithms to identify factors in minority and marginalized populations associated with improved clinic attendance. These data might then be used to preferentially schedule specific clients or to identify specific community issues (such as transportation), which may be amenable to focused intervention. We might also employ means such as reminder calls to ensure that scheduled appointments are not forgotten. Perhaps we'd do better by considering an entirely new scheduling paradigm, one that both minimizes disparities in access to care and improves clinic performance. The same day scheduling scheme ("openaccess scheduling"), whereby no patients are scheduled in advance and are instead seen on the day they call for an appointment, has been shown to result in shorter waiting times, lower noshow rates, improved patient satisfaction, and higher provider productivity5,6 (https://bit.ly/ 2SDj5JE; https://bit.ly/2tekf5m). Success may also be found with programs in which patients are seen on either the day of the call or the following day (same day or next day) to allow them time to arrange services such as transportation and child care. Although it's true that no matter what scheduling plan is chosen socioeconomic factors may influence access to care, using a system that minimizes the role ofdemographics in scheduling appointments seems ideal.

Samorani and Blount have admirably "connected the dots" to show how scheduling algorithms may inadvertently affect access to care for vulnerable populations. But to imply that these systems are agents of racial injustice is perhaps a dot too far. 4PH

Howard Rodenberg, MD, MPH

CONFLICTS OF INTEREST

The author has no conflicts of interest to declare.

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REFERENCES

1. Samorani M, Harris SL, Blount LG, Lu H, Santoro MA. Overbooked and overlooked: machine learning and racial bias in medical appointment scheduling. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3467047. Accessed January 30, 2020.

2. Dantas LF, Fleck JL, Cyrino Oliveira FL, Hamacher S. No-shows in appointment scheduling-a systematic literature review. Health Policy. 2018;122(4):412421.

3. Kaplan-Lewis E, Percac-Lima S. Noshow to primary care appointments: why patients do not come. J Prim Care Community Health. 2013;4(4):251-255.

4. Shimotsu S, Roehrl A, McCarty M, et al. Increased likelihood of missed appointments ("no shows") for racial/ethnic minorities in a safety net health system. J Prim Care Community Health. 2016;7(1): 38-40.

5. Ansell D, Crispo JAG, Simard B, Bjerre LM. Interventions to reduce wait times for primary care appointments: a systematic review. BMC Health Serv Res. 2017;17(1): 295.

6. Mallard SD, Leakeas T, Duncan WJ, Fleenor ME, Sinsky RJ. Same-day scheduling in a public health clinic: a pilot study. J Public Health Manag Pract. 2004; 10(2):148-155.

DETAILS

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Taking Action to Improve Asian American Health

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ProQuest document link

ABSTRACT (ENGLISH)

In my experience as a health equity researcher, it has become evident that the terms health disparities and Asian American do not go hand-in-hand in popular thought. I am routinely met with skepticism when describing low-income Asian American communities or the poor health status, health care use, or health outcomes for these communities. My work, however, is guided by data. Specifically, Asian Americans
* Have the highest poverty rate of all racial/ethnic minority groups in New York City,1
* Constitute 15% of the New York City population yet were awarded 1.4% of New York City-based agency contracts to social services providers in the past 13 years,2 and
* Are the most understudied racial/ethnic group in the peer-reviewed literature (6% of US population; 0.01% of MEDLINE articles).3
Furthermore, research including Asian American participants is critically underfunded by the National Institutes of Health (less than 0.17% of the total National Institutes of Health budget).4 To put it bluntly, Asian Americans are simply not a part of the collective consciousness of public health researchers and practitioners either as a community of color oras a population that experiences health disparities.

FULL TEXT

In my experience as a health equity researcher, it has become evident that the terms health disparities and Asian American do not go hand-in-hand in popular thought. I am routinely met with skepticism when describing low-income Asian American communities or the poor health status, health care use, or health outcomes for these communities. My work, however, is guided by data. Specifically, Asian Americans
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Furthermore, research including Asian American participants is critically underfunded by the National Institutes of Health (less than 0.17% of the total National Institutes of Health budget).4 To put it bluntly, Asian Americans are simply not a part of the collective consciousness of public health researchers and practitioners either as a community of color oras a population that experiences health disparities.
Aggregated data from national and local data sources across the diverse umbrella term "Asian American" indicate that Asian Americans appear to have better socioeconomic, behavioral, and health outcomes than do other racial/ethnic groups. For example, overall education and income levels are higher in Asian Americans compared with the overall US population.5 Wealthy, successful, and highly educated Asian Americans are highly visible in society, from Andrew Yang to the Crazy Rich Asians franchise. But two major facts are masked by aggregated data:

(1) the glaring bimodal income distribution among Asian Americans6 and (2) the stark sociopolitical, ethnic, economic, and linguistic disparities across Asian subgroups.5 As a result of the prominent visibility of the Asian Americans at the highest end ofthe socioeconomic distribution, Asian Americans across the remaining portion of the socioeconomic distribution are ignored.

In this issue of AJPH, Adia et al. (p. 520) present evidence describing (1) the health disparities that Asian Americans experience in comparison with non-Hispanic Whites and (2) how aggregation of Asian American subgroups (e.g., Chinese, Vietnamese, Filipino) masks important health disparities within the Asian American community. They used the 2011-2017 California Health Interview Survey-a survey that has made great strides to ensure representation across Asian American subgroups-and found that overall, Asian American adults were more likely to be overweight or obese and to selfreport diabetes. Overall, Asian Americans were less likely to report disability or delayed access to and uptake of medications and health care compared with White adults. However, after disaggregating the data by Asian subgroup, specific health disparities were identified, including fair or poor health among Vietnamese Americans, overweight or obesity in Chinese and Japanese Americans, and greater reporting of no usual source of care among Korean Americans. Additionally, Filipino Americans reported experiencing the most health disparities compared with Whites, including fair or poor overall health; being overweight or obese; and having high blood pressure, diabetes, or asthma despite having generally similar access to health care.

Several lessons may be drawn from their approach, outlined in the following section and in Table 1.

MEANINGFUL USE OF ALREADY COLLECTED DATA

Researchers in the public health community have increasingly focused on the promise of big data, such as electronic health records, large health insurance databases, or data from social media. This is particularly salient for research for Asian American communities-among whom data are sparse. Secondary analyses of existing, administratively collected data such as those presented by Adia et al. are also an efficient way to gain a preliminary understanding ofthe diverse Asian American populations, which can then lead to future primary data collection and research efforts that focus on specific groups who are likely to experience greater health disparities.

WHO IS REPRESENTED IN THE SAMPLE?

Generalizability is highly relevant for research on Asian American communities. As noted as a limitation by Adia et al., the results of their analysis are not generalizable to Asian American communities in places other than California. For research among Asian Americans, this statement has historical and modern-day relevance. The term Asian Americans, as used across studies in different geographic settings, typically includes different combinations of Asian subgroups because of varying migration histories, geography, income and health literacy, or research methods. For example, an Asian American sample from Texas may be predominantly South Asian, but an Asian American sample from Minnesota might be 100% Hmong. This pertains to both communitybased studies and nationally representative samples. For instance, the National Health Interview Survey has oversampled Asian Americans annually since 2006, but it is conducted in English and Spanish only. One third of Asian Americans have limited English proficiency, and these individuals are also more likely to have poorer socioeconomic profiles and health outcomes.5 This is not meant to suggest that analyzing data from the National Health Interview Survey or other, similar data sets is not useful but rather that researchers must acknowledge that findings for Asian Americans are more likely to be generalizable to Asian Americans of higher income and educational status and, hence, have better health outcomes.7

Researchers conducting such analyses need to contextualize these findings responsibly by understanding and explaining who along the socioeconomic spectrum is represented when interpreting results. Failing to do so makes it difficult to make appropriate comparisons across studies and, worse, perpetuates myths of a healthy immigrant advantage.

PARTNERING WITH LOCAL COMMUNITIES

The work of Adia et al. also exemplifies another important theme relevant to understanding the health of the diverse Asian American subgroups: partnership with local Asian American communities and community organizations. The authors report on Asian American groups that are of plurality in California: Chinese, Vietnamese, Koreans,

Japanese, and Filipinos. Notably missing are South Asian Americans. Their findings highlight opportunities for direct communitypartnered work (e.g., connecting Korean Americans to a usual source of care) and for future investigation (e.g., health needs assessment of South Asian California groups). In both instances, recognizing the central role of faith- and community-based organizations as a trusted part of the fabric of the Asian American experience is critical for successful implementation and longterm sustainability.

Connections with such community partners can also offer insight into pressing health concerns, subgroup-specific expertise on cultural norms and language support, and shared staffing with an academic partner through a community health worker approach. Note, however, that engaging with community partners is just one element of a broader set of initiatives that can improve the health and wellbeing of Asian Americans across ethnic groups. Additional efforts include diversification ofthe social services workforce and support for pipeline opportunities to encourage researchers interested in studying Asian American health disparities.

SOME DATA ARE BETTER THAN NO DATA

Often, as was the case forAdia et al., researchers are faced with a conundrum: advocating for data disaggregated by ethnic group within the Asian American category yet having to use and report on aggregated data nonetheless. The reality is, presenting some data on the health status of Asian Americans is more helpful toward the broader dialogue than not presenting any data at all- particularly ifthe data are carefully interpreted and contextualized as described earlier. In the peerreviewed, public health literature, data on the health status of Asian Americans often are not available; available but excluded because of small sample size; or, worse, available but excluded for no specific reason. A lack of data perpetuates the most harmful inequality for Asian Americans: invisibility as a community of color, as a health disparity population, and as a population deserving ofequal consideration in health research, funding, and policymaking.

The lack of visibility and lack of recognition that health and health care disparities exist for Asian Americans are difficult challenges to overcome, but through small, actionable steps and a renewed mindset of inclusivity, we as a public health community can work together toward improved health for Asian Americans. Achieving health equity-an agenda of national and public health importance- may be most readily achieved through incremental and specific steps of this archetype for all racial/ethnic groups. ÂfPU

Stella S. Yi, PhD, MPH

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Sidebar

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References

REFERENCES

1. The City ofNewYork, Mayor's Office for Economic Opportunity. New York City Government Poverty Measure 2017: An Annual Report From the Office of the Mayor. May 2019. Available at: https://www1.nyc.gov/site/opportunity/ poverty-in-nyc/poverty-measure.page. Accessed December 26, 2019.

2. Sato G, Xu P, Shih H. Analysis of City Government Funding to Social Service Organizations Serving the Asian

American Community in New York City. Asian American Federation. May 2015. Available at: http://www.aafny.org/doc/City_ Social_Services_Report_FINAL.pdf Accessed December 26, 2019.
3. Ghosh C. Healthy People 2010 and Asian Americans/Pacific Islanders: defining a baseline of information. Am J Public Health. 2003;93(12): 2093-2098.
4. Đoan LN, Takata Y, Sakuma KK, Irvin VL. Trends in clinical research including Asian American, Native Hawaiian, and Pacific Islander participants funded by the US National Institutes of Health, 1992 to 2018. JAMA Netw Open. 2019;2(7): e197432.
5. Lopez G, Ruiz NG, Patten E. Key facts about Asian Americans, a diverse and growing population. Pew Research Center: Fact Tank. September 8, 2017. Available at: https://www.pewresearch.org/facttank/2017/09/08/key-facts-about-asianamericans. Accessed December 26, 2019.
6. Kochhar R, Cilluffo A. Income inequality in the U.S. is rising most rapidly among Asians. Pew Research Center. July 12, 2018. Available at: https:// www.pewsocialtrends.org/2018/07/12/ income-inequality-in-the-u-s-is-rising-mostrapidly-among-asians. Accessed December 26, 2019.
7. Chong DH, Kwon SC, Yi SS. Comparing characteristics of Asian American populations represented in national vs. community level datasets. Paperpresented at: American Public Health Association Annual Meeting and Expo; 2019; Philadelphia, PA.

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Who Is Reached With Clinic In-Reach and Outreach Strategies to Promote Colorectal Cancer Screening?

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ABSTRACT (ENGLISH)

Screening for colorectal cancer (CRC) reduces CRC-associated incidence and mortality, yet it remains underutilized. These screening rates are especially low among Latinos in the United States (http://bit.ly/2vmAgHk). Although several clinic-based strategies have proven effective at increasing CRC screening rates in the general population, we know little about the comparative effectiveness of proven strategies to promote screening in the Latino population.

In this issue of AJPH, Castañeda et al. (p. 587) present findings from a direct comparison oftwo clinic-based approaches to increase CRC screening rates among Latino adults: clinic in-reach through one-on-one education versus clinic outreach through mailed fecal immunochemical tests (FITs). Clinic in-reach involves delivering a health-

promotion program or clinical service to individuals who go to clinics for health care services. Outreach, on the other hand, extends beyond the clinic walls and provides services to those who might not otherwise be able to access those services directly at a clinical site. The basic difference between these approaches lies in the answer to the question "Who is reached?" Put simply, in-reach reaches those inside the clinic-who often have access to transportation, can take time away from work or family obligations, and may be experiencing an acute health issue. Outreach, on the other hand, reaches those outside the clinic- who have a valid address or telephone number and may be unable or unwilling to visit the clinic.

FULL TEXT

Screening for colorectal cancer (CRC) reduces CRC-associated incidence and mortality, yet it remains underutilized. These screening rates are especially low among Latinos in the United States (http://bit.ly/2vmAgHk). Although several clinic-based strategies have proven effective at increasing CRC screening rates in the general population, we know little about the comparative effectiveness of proven strategies to promote screening in the Latino population.

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Given this distinction, I applaud the study of Castañeda et al. for what it tells us about reach. Specifically, their clinical trial in a federally qualified health center near the California- Mexico border showed that mailing fecal tests to individuals who are overdue for screening (mailed FIT outreach) led to higher rates of CRC screening than did a 10-minute one-on-one scripted education session delivered to individuals who attended their scheduled in-clinic visit (clinic in-reach). Their findings support the extant body of literature, including the findings of three recent systematic reviews1 3 that demonstrate the effectiveness of mailed FIT outreach. These have reported absolute increases ranging from 21 to 28 percentage points and comparatively lower absolute increases for visit-based FIT distribution (15.9 percentage points). The findings of Castañeda et al. further show that combining the two strategies led to no further improvements in CRC screening uptake over mailed FIT outreach alone (78.9% vs 77.2%). Despite this study's evidence and resounding endorsement of mailed FIT outreach over one-on-one education in-reach, we should not disregard in-reach strategies. The basis for this reasoning lies in the per-protocol findings of Casteñeda et al. (Table 1).

Among individuals who successfully received the one-onone education in-reach, for example, 88% completed CRC screening within six months, the highest rate for any of the study's tested conditions (compared to 28% for usual care, 77% for mailed FIT outreach, and 79% for the combination of in-reach and outreach). Yet, because only 51% of the individuals who were assigned to the in-reach program actually received the program, the CRC screening completion, based on intention-to-screen analysis, dropped to 52%. By contrast, nearly all selected individuals were reached by usual care (100%), were mailed FIT outreach (98%), or received the combination of clinic in-reach and mailed FIT outreach (99%; Table 1). In reaching 98% of participants, the findings from Castañeda et al. show that the mailed FIT outreach's reach was nearly double that of clinic in-reach; ultimately this difference in reach drives the reported difference in effectiveness.

How do the findings of Castañeda et al. compare with those of other studies? Studies that have mailed FITs to individuals overdue for screening have generally reported high reach rates and low proportions of individuals with

invalid addresses.4,5 Similar to the findings of Castañeda et al. on the reach for the in-reach strategy, Potter et al. reported reach rates for a flu-FIT clinic in an integrated health system, where FIT kits were distributed by clinic staff to overdue individuals attending a flu clinic. Their findings showed that 53.9% of individuals who were eligible to receive a FIT actually received one.6 Potter et al. note that implementation barriers and clinic processes likely accounted for the low distribution.

Castañeda et al. provide little insight into the reasons fewer patients were reached in the in-reach group. We know from previous research that some individuals cancel, reschedule, or do not show up for clinic visits and that cancelations and noshows are particularly common in federally qualified health centers, where the study of Castañeda et al. was set. Federally qualified health center no-show rates have been reported to be as high as 20%.7 Other individuals may face pressing health needs and decline a 10-minute preventive health education session. It is also possible that the patient navigators delivering the program faced practical limitations to delivering education in a busy clinic, such as space constraints or cooccurring appointments.

What is unique about the study of Castañeda et al. is the practical decision to limit study participants to those who had a scheduled primary care visit in the upcoming two months. This decision allowed a direct comparison ofdistinct strategies while facilitating an individual randomized design. In this context, mailed FIT outreach may be particularly effective, as the clinic visit serves as an additional reminder to complete screening and provides a natural and timely way for patients to get answers to questions about the test (irrespective of whether one-on-one education was also delivered). Moreover, some individuals prefer to personally drop offtheir completed FIT to a clinic to ensure its receipt, and the clinic visit may provide a convenient way to accomplish this. However, systematically mailing FIT kits to individuals with upcoming clinic visits may present some practical challenges, especially for clinic systems with limited capacity to generate patient registries. One reason for this is that patient scheduling systems are usually distinct from other types of electronic health record data that are often used for establishing eligibility. These challenges limit the use of scheduling systems data for patient selection in population outreach programs.

The findings of Castañeda et al. are important for health systems seeking to select an intervention that can be successfully implemented in their setting. When delivered to Latino adults with an upcoming clinic visit, clinic in-reach and mailed FIT outreach are both effective at raising rates of CRC screening. There is no additive effect when combining these interventions, but mailed FIT outreach reached more individuals. As the research ofCastañeda et al. demonstrates, effective strategies that successfully reach a broad population are needed to accelerate CRC prevention and save lives from the second most lethal form of cancer in the United States. Á¡PU

Gloria D. Coronado, PhD

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Sidebar

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References

REFERENCES

1. Jager M, Demb J, Asghar A, et al. Mailed outreach is superior to usual care alone for colorectal cancer screening in the USA: a systematic review and meta-analysis. Dig Dis Sci. 2019;64(9):2489-2496.
2. Dougherty MK, Brenner AT, Crockett SD, et al. Evaluation of interventions intended to increase colorectal cancer screening rates in the United States: a systematic review and meta-analysis. JAMA Intern Med. 2018;178(12):16451658.
3. Issaka RB, Avila P, WhitakerE, Bent S, Somsouk M. Population health interventions to improve colorectal cancer screening by fecal immunochemical tests: a systematic review. Prev Med. 2019;118: 113-121.
4. Singal AG, Gupta S, Tiro JA, et al. Outreach invitations for FIT and colonoscopy improve colorectal cancer screening rates: a randomized controlled trial in a safety-net health system. Cancer. 2016;122(3):456-463.
5. Gupta S, Halm EA, Rockey DC, et al. Comparative effectiveness of fecal immunochemical test outreach, colonoscopy outreach, and usual care for boosting colorectal cancer screening among the underserved: a randomized clinical trial. JAMA Intern Med. 2013;173(18):17251732.
6. Potter MB, Ackerson LM, Gomez V, et al. Effectiveness and reach of the FLU-FIT program in an integrated health care system: a multisite randomized trial. Am J Public Health. 2013;103(6):11281133.
7. Cruz HE, Gawrys J, Thompson D, Mejia J, Rosul L, Lazar D. A multipronged initiative to improve productivity and patient access in a federally qualified health center network. J Ambul Care Manage. 2018;41(3):225-237.

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Health Risks of Rohingya Children in Bangladesh

Puac-Polanco, Victor; Kalia, Vrinda; Kingsbury, Diana [1] [1] Kent State University, Kent, OH

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FULL TEXT

The ethnic cleansing of Rohingya people in Rakhine, Myanmar, has forced more than 1.1 million Rohingya people to seek refuge in Bangladesh. More than 55% of this population is made up of children, among whom there is a high prevalence of infectious diseases attributable to inadequate immunization, malnutrition, overcrowding, and lack of clean water and adequate sanitation. Because of efforts by national and international organizations, between 2018 and 2019, data from the World Health Organization reports improvement in acute malnutrition (19% vs 12%), immunization coverage (3% vs 89%), and women delivering infants in health facilities (22% vs 40%). However, acute respiratory infections are still highly prevalent in the population, and anemia and stunting remain a concern. Furthermore, the incidence oF waterborne diseases increases during the monsoon, adding extra complexities in preventing infections.

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Maternal Mortality: A US Public Health Crisis/Comments

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ABSTRACT (ENGLISH)

I became an obstetrician and gynecologist in Marietta, Georgia, decades ago because I believed it would be a happy specialty. Helping to bring 5200 babies into the world certainly affirmed that belief.I also had the good fortune to practice for many years when maternal deaths steadily dropped. That trend began to reverse itself about 25 years ago and the United States, in my view, now faces a crisis. It is one that the US Congress and all participants in our health care system must address with urgency.

In 1986, when the Centers for Disease Control and Prevention (CDC) began tracking maternal deaths, seven women for every 100 000 live births died during pregnancy, during childbirth, or in the weeks and months following. By 2016, the annual rate had jumped to 17 women for every 100000 live births.1 In 2014, according to the CDC's latest statistics, 50 000 women faced dangerous complications from pregnancy and childbirth. Think about all the medical advances that have occurred in recent times, and yet the risks associated with pregnancy have not declined. These figures say to me we are failing women during what should be a most wondrous time oftheir lives. No developed nation has a more shameful record. It particularly saddens me that among the 50 states, my home state of Georgia sits near the bottom.

FULL TEXT

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IDENTIFYING THE CAUSES

The CDC recently examined the factors behind this spike in maternal deaths. Heart disease, hemorrhage, and infections appear most frequently on death certificates. The upstream issues include lack of access to care, unstable housing, limited access to transportation, poor understanding of danger signs, and not following medical advice. The CDC also cited health systems ill equipped to deal with maternal emergencies, missed or delayed diagnoses, and poor case coordination.3

Racial and socioeconomic factors are impossible to overlook. African American, Alaska Native, and American Indian women die at a rate almost three times as high as White women. Although women of all backgrounds may be at risk, poverty is linked to the higher rates of maternal deaths.4 Most heartbreaking is the CDC's conclusion that six of every 10 maternal deaths that occur can be prevented. Bluntly stated, with better and more accessible health care for all, many would be alive today.

There is no single solution to the problem. It requires multiple interventions at all levels to achieve better outcomes.

My former constituents in Georgia's 11th district, as well as colleagues in the state senate and in the US Congress, may find the views of this conservative Republican somewhat surprising. I have turned to our Constitution previously when advocating better health outcomes and the argument is relevant here. The preamble sets as a goal to promote "the general welfare" of the American people. The welfare of pregnant and postpartum women certainly must be a part of that goal.

PURSUING THE SOLUTIONS

As I write this, one ofthe most promising proposals in the US Congress would extend Medicaid coverage to women one year postpartum. Nearly half of all women who give birth are covered by Medicaid, but many lose that coverage a mere 60 days after delivery. This makes no sense given that an estimated 70% of women develop at least one complication up to a year after giving birth.5

I am fully aware that the notion of expanding Medicaid is a difficult political issue, but the figures do not lie. It is a grave shortcoming to deny women coverage when the need is so obvious. Worrisome is the current administration's support for budget cutbacks at the CDC and the National Institutes of Health. I would argue that these public health agencies need additional funding to conduct more research and data collection. This would help us better understand the problem and inform the development of a national standard of best practices.

States, professional societies, and health care systems are engaged to varying degrees. These are some of note:

* The Joint Commission, a USbased nonprofit tax-exempt 501 organization that accredits more than 21 000 US health care organizations and programs, recently issued guidelines for the treatment and care of women who are hemorrhaging.6 Collections of best practices for a number of other complications already inform hospital staff.
* California's maternal death rate has dropped in recent years by 55% because of a cross-sector collaboration focused on developing quality improvement toolkits for recognizing and treating pregnancy complications.7
* The American College of Obstetricians and Gynecologists developed guidance for postpartum or "fourth trimester" treatment (https://bit.ly/ 362nqLk) and for treating heart disease during pregnancy (https://bit.ly/30GGptT).
* Georgia's alarming statistics led to a partnership comprising the state Department of Public Health, the CDC, and the Georgia Obstetrical and Gynecological Society to identify the greatest needs to improve maternal health. As a result, money was appropriated to support a range of medical and mental health services principally in rural and underserved communities. About half of the counties in Georgia have no OB/GYN, so several medical schools in the state receive funding for additional residency slots (https://bit.ly/2tuDoQT).
* Among hospital systems attempting to implement innovative programs, I would point out Ochsner Health System in Louisiana. TeleStork, launched in 2016, created an additional layer offetal and maternal monitoring by establishing an operations center where real-time data are downloaded from labor and delivery rooms and analyzed by highly trained nurses. A year later it rolled out Connected MOM (Maternity Online Monitoring). Lowrisk pregnant women are provided with toolkits to use at home so they can digitally send health professionals their blood pressure, weight and urine dip stick information. Both programs can help identify and treat problems early. And, in the case of Connected MOM, there are a reduced number of in-person doctor visits, which provides a convenience particularly for working women and moms with additional children. Given the program's success, as a next step Ochsner is moving to expand Connected MOM to women with highrisk pregnancies.

SOLVING THE PROBLEM

So, is attention being paid to this crisis? Yes, but I believe more must be done; more coordination, more dedication and more dollars. This call to action comes not only from my background as a doctor and lawmaker. It is personal, too. About a century ago my dad's mother died in childbirth, casting a shadow over his long life and the lives of his siblings. The devastation caused by the unnecessary death of a mother and partner should not be any family's experience. A woman should not lose her life by bringing life into the world. With a firm agenda in mind and the funding to back it, we can move toward a day when almost no one in the United States knows that kind of loss and heartbreak. >4jPI-I

J. Phillip Gingrey, MD

CONFLICTS OF INTEREST

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REFERENCES
1. Centers for Disease Control and Prevention. Pregnancy Mortality Surveillance System. Available at: https://www.cdc.gov/ reproductivehealth/maternal-mortality/ pregnancy-mortality-surveillance-system. htm. Accessed January 29, 2020.
2. World Population Review. Maternal mortality rate by state 2020. Available at: http://worldpopulationreview.com/states/maternal-mortality-rate-by-state. Accessed January 29, 2020.
3. Centers for Disease Control and Prevention. Vital signs: pregnancy-related deaths, United States, 2011-2015, and strategies for prevention, 13 states, 2013-2017. MMWR Morb Mortal Wkly Rep. 68(18);423-429. Available at: https:// www.cdc.gov/mmwr/volumes/68/wr/ mm6818e1.htm?s_cid=mm6818e1_w. Accessed January 29, 2020.
4. Maternal Health Task Force, Harvard Chan School, Center ofExcellence in Maternal and Child Health. Maternal health in the United States. Available at: https://www.mhtf.org/topics/maternalhealth-in-the-united-states. Accessed January 29, 2020.
5. Kelly R. US House subcommittee takes major congressional action on America's maternal mortality crisis. Available at: https://robinkelly.house.gov/media-center/ press-releases/us-house-subcommitteetakes-major-congressional-action-onamerica-s. Accessed January 29, 2020.
6. Joint Commission. New standards for perinatal safety. Available at: https:// www.jointcommission.org/assets/1/6/New_Perinatal_Standards_Prepub_ Report.pdf Accessed January 29, 2020.
7. California Maternal Quality Care Collaborative. Available at: https://www. cmqcc.org. Accessed January 29, 2020.
Jewel Mullen Comments
The striking rise in US maternal mortality recently reported by the Centers for Disease Control and Prevention (CDC) makes a call to action logical and necessary. However, issuing such a call is not a novel act, and doing so has not been sufficient to achieve a lasting decrease in maternal deaths. Nor has it narrowed the persistent associated racial disparities in maternal deaths or prevented our national maternal mortality rate from sinking to the lowest rung among developed countries.
As early as 1987, at the first international Safe Motherhood Conference, former director general of the World Health Organization, Halfdan Mahler, issued a call to action urging governmental and private sector organizations to join a campaign to save women's lives. The goal was a 50% reduction in the number of maternal deaths worldwide by the year 2000.1 Since that time, pregnancyrelated maternal mortality has decreased by more than 30% globally, whereas in the US it has more than doubled (from 7.2 to 16.9 deaths per 100 000 live births).2 Both globally and nationally, the majority of maternal deaths are preventable. That reality, combined with worsening US outcomes, makes a call to action seem like a whisper. What women really need is a resounding demand for accountability that moves health care, public health, government, and other sectors from suggesting strategies necessary to prevent maternal deaths to consistently implementing and tracking them.
There are multiple examples ofwhat connotes accountability for preventing maternal mortality. Leaders should promote the general welfare by upholding policies that mitigate inequities in access to safe, consistent, high-quality, evidence-based, and culturally and linguistically appropriate reproductive health care. Ensuring that all women receive holistic interconception and prenatal services and standardized maternity care that includes management of chronic conditions is key to better outcomes. The constitutional obligation of achieving optimal health for all women must be a unifying, nonpartisan goal. If leaders adopt a "first do no harm" approach to reproductive health policy, their decisions will be driven by a commitment to women's safety and well-being, not political forces.
A second example of accountability is labeling preventable maternal deaths as "never events"-that is, dangerous

errors that are preventable and should never occur-to eliminate them. Systems, teams, and individuals need more real-time information to be proactive about rooting out the lapses in maternity care that are responsible for preventable deaths. The American College ofObstetricians and Gynecologists' recommendations on patient safety are such a nonpunitive, "just culture" framework that identifies and responds to staff who commit errors, risky actions, and recklessness.3

A third example of being accountable is accelerating solutions to maternal mortality disparities among African American and Native American/ Alaska Native women. A woman's race and ethnicity are not causes, but racism that results in women's receipt of inferior medical treatment is one ofthem. The American College of Obstetricians and Gynecologists' patient safety recommendations include improving physicianpatient communications and partnerships. Similarly, the CDC suggests that identifying and addressing health care bias can nurture better relationships and improve maternal outcomes. It's time to stop sugarcoating the word "racism" by invoking implicit and explicit bias instead. Naming racism is a step toward being intentional about undoing it to achieve equitable care.

Addressing racism promotes a justice culture in health care. So does effective public policy. Accountability for maternal mortality obliges us to build just and justice cultures. Â1PU

Jewel M. Mullen, MD, MPH, MPA

CONFLICTS OF INTEREST

The author has no conflicts of interest to declare.

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Note.Jewel M. Mullen contributed to this comment in herpersonal capacity. The views expressed are her own and do not necessarily represent the views of the Dell Medical School or the University of Texas.

REFERENCES

1. Cohen SA. The Safe Motherhood Conference. Int. Fam. Plan. Perspect. 1987; 13(2):68-70.

2. Centers for Disease Control and Prevention. Pregnancy Mortality Surveillance System. Available at: https:// www.cdc.gov/reproductivehealth/ maternal-mortality/pregnancy-mortalitysurveillance-system.htm. Accessed January 29, 2020.

3. American College of Obstetricians and Gynecologists Committee; Committee on Patient Safety and Quality Improvement. ACOG committee opinion no. 447: patient safety in obstetrics and gynecology. Obstet Gynecol. 2009;114(6): 1424-1427.

DETAILS

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Alcohol Industry Involvement in the Moderate Alcohol and Cardiovascular Health Trial

Mitchell, Gemma, PhD; Lesch, Matthew, PhD; Mccambridge, Jim, PhD

ProQuest document link

ABSTRACT (ENGLISH)

The National Institutes of Health stopped the worldwide Moderate Alcohol and Cardiovascular Health (MACH) trial in 2018 because of institutional failings that led to the biased design of this major study. Drawing on e-mail correspondence among officials, researchers, and alcohol companies, we provide the first, to our knowledge, detailed analysis of alcohol industry involvement in the MACH trial.
Alcohol companies agreed to fund the MACH trial to advance their commercial interests rather than to help answer a major scientific question. Alcohol industry executives seized opportunities presented by discussions of the MACH trial to try to influence this study and wider public health, research, and policy decision-making.
The process of soliciting research funding from corporations, which included convincing alcohol companies that the study design supported their commercial interests, was intrinsically biased. Thus, the three parties-research funding officials, researchers, and industry executives-coproduced the biased trial design. A detailed understanding of this episode will be helpful in advancing efforts to protect public health research from biasesassociated with corporate donations. (Am J Public Health. 2020;110:485488. doi:10.2105/AJPH.2019. 305508)

FULL TEXT

Headnote

The National Institutes of Health stopped the worldwide Moderate Alcohol and Cardiovascular Health (MACH) trial in 2018 because of institutional failings that led to the biased design of this major study. Drawing on e-mail correspondence among officials, researchers, and alcohol companies, we provide the first, to our knowledge, detailed analysis of alcohol industry involvement in the MACH trial.
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The worldwide Moderate Alcohol and Cardiovascular Health (MACH) trial, supported by the National Institute on Alcohol Abuse and Alcoholism (NIAAA), began in February 2018 and was designed to investigate the possible cardioprotective effects of alcohol.1 Approximately two thirds of the funding for this $100 million trial was provided by five global alcohol producers: AnheuserBusch InBev, Carlsberg, Diageo, Heineken, and Pernod Ricard.2,3 Their ability to provide such funding is connected to the concentration of the brewing and distilled spirits industries into a small number of transnational corporations.4 This has led to a pooling of resources that enables alcohol companies to create "social aspects" organizations for "corporate social responsibility" and public relations purposes, including research.5,6

Researchers have raised concerns about corporate strategies to bias science across a range of health-related topics,7 9 including industry sponsorship shaping research agendas as well as particular studies.10 Following media coverage,3,11 a National Institutes of Health (NIH) investigation1 led to the termination of the MACH trial in June 2018. We analyzed e-mail correspondence made publicly available by the NIH report to explore the role of the alcohol industry in the trial and the implications for public health science.

THE SIGNIFICANCE OF THE SCIENCE

The alcohol industry attempts to distance itself from tobacco and other drugs by claiming that low-dose alcohol consumption provides cardiovascular health benefits.12 Older observational epidemiological studies,13 including those funded by industry,14 suggest there is a cardiovascular health benefit, whereas more rigorous Mendelian randomization studies and other studies adequately correcting for misclassification bias (including former drinkers with current abstainers) find less orno benefit.15 17 Resolving this uncertainty is a major scientific challenge, and the possible implications for public health, the alcohol industry, and society are quite profound. The MACH trial, the first investigator-randomized study on the topic, originated in these circumstances.

THE TRIAL TERMINATED

Concerns about industry involvement in the MACH trial were first raised in the New York Times in July 201711 and March 20183; the latter report drew from e-mails and travel vouchers obtained via freedom of information requests, as well as interviews with former federal officials. The reporting documented inappropriate interactions between the alcohol industry, researchers, and NIAAA officials. In response, congressional hearings were held,2 and the NIH director requested a review of the trial.1 Two reviews were undertaken: the Office of Management Assessment review, which has not been published, and the NIH Advisory Committee to the Director Working Group (ACD WG) review, which was published in June 2018.1

The main findings from the ACD WG report1 include that NIAAA officials sought funding from alcohol companies inappropriately, that NIAAA staff liaised with the principal investigator (PI) and "effectively steered funding to the PI ofthese staff members' choosing,"1(p8) and that collaborations between NIAAA officials and industry actors "appear to intentionally bias the framing of the scientific premise in the direction of demonstrating a beneficial health effect of moderate alcohol consumption. "1(p3) These findings draw in part on additional peer review of the trial design commissioned by the NIH. This raised concerns that there are insufficient patients and not enough follow-up time to allow meaningful assessment of cancer endpoints. It also found that the composite primary endpoint does not include heart failure. Thus, the trial could show benefits while missing harms.1(p3)

As a consequence, the ACD WG report recommended that the MACH trial be terminated, and the NIH announced the end of the trial in June 2018.2

AVAILABLE E-MAIL EVIDENCE

Central to the ACD WG's findings were a series of e-mail exchanges among alcohol industry executives, NIAAA officials, and alcohol researchers between June 2013 and February 2015. The report concluded that correspondence among the three parties demonstrated extensive discussions about the scientific planning of the study that went "beyond the norm"1(p10) and reflected an apparent attempt by NIAAA officials and the researchers "to persuade industry to support the project."1(p3) The focus of the ACD WG report is on the integrity of the process. We explored the role of the alcohol industry in this episode, asking which alcohol industry bodies were involved in discussions about the design and conduct of this trial, how these efforts were organized, and what they sought to influence.

The material we used is publicly available as an appendix in the ACD WG report.1 We first identified e-mail correspondence (including attached documents) in which alcohol industry executives were recipients, senders, or cc'd into e-mails, providing a core data set that we analyzed thematically. This included the creation of an initial coding framework, followed by the construction and revision of themes relevant to our aims.18 We reviewed and discussed the coding until we reached agreement on the main findings. Additionally, we examined references to the alcohol industry in both the broader e-mail correspondence and the rest of the NIH report to identify important contextual data. All direct quotations in this commentary are from the ACD WG report unless otherwise stated.

A TRIPARTITE STRUCTURE

The researchers, two established experts in the field working in prestigious universities, were the first to contact industry about a potential trial on the health benefits of moderate drinking. This occurred in 2013, when the researchers approached Diageo, one of the largest spirits producers in the world.4 Diageo later involved the Distilled Spirits Council ofthe United States and Spirits Europe, both trade associations in which it is a member. Subsequently, other global beer and spirits companies became involved, which the International Center for Alcohol Policies (ICAP)19 was key to arranging. ICAP also coordinated, collected, and synthesized scientific input from other producers. NIAAA documentation names the International Alliance for Responsible Drinking (IARD)- the successor organization formed following a merger ofICAP and the Global Alcohol Producers Group in late 2014-as having "coordinated commitments" from the alcohol industry.1(p137) The 11 member companies of IARD were all involved in the ICAP-led discussions of the MACH trial design and conduct.

Apart from the Wine Institute, the wine industry was not involved in these discussions. In comparison with beer and spirits, wine producers tend to be smaller20 and were less likely potential donors for this reason. A leak from a wine industry source early in the process suggested that the NIH was seeking funding from alcohol companies. This led to much discussion between NIAAA officials about how to manage this unwelcome public disclosure.

In addition to the correspondence itself, interactions took place via conference calls and in person (including drinks and meals and researchers making presentations to industry groups). From the outset, industry executives sought reassurance that the NIAAA had a central role in the study; this would increase the likelihood that the wider scientific community viewed the findings as legitimate. The nature of industry interest was clear: the study would be designed to "show the J curve [demonstrate the health benefits of low-level drinking] in all its glory. "1(p95) NIAAA staff and the researchers held a similar view of the expected outcomes. When alcohol industry executives made requests-to convene conference calls and to have methodological discussions-their requests were accepted, and the information provided. After initial contacts with Diageo, the Distilled Spirits Council of the United States, and Spirits Europe, ICAP became the preeminent voice of the alcohol industry in identifying questions, issues, or concerns about the study. NIAAA officials acknowledged that it was highly unlikely the study could proceed without industry funding. There was, therefore, clear power asymmetry in these interactions, in which NIAAA officials and researchers had to persuade large corporations that this project was in their interests.

ISSUES TARGETED BY ALCOHOL COMPANIES

Alcohol companies and trade associations coordinated by ICAP engaged with all the key scientific issues raised by the proposed trial design (see particularly ICAP call minutes1[p66 91] and e-mail cor1[p100-110,114-115]. respondence). They discussed the following:

1. Outcome measures, for example, whether breast cancer would be a secondary outcome;
2. Target population, for example, whether to exclude women with a family history of breast cancer in the selection criteria;
3. Sample size;
4. Compliance with randomized allocation of drinking only one drink per day or none;
5. Beverage variation: the decision to include different types ofalcohol as chosen by participant;
6. Incentives to individuals abstaining from alcohol in the trial;
7. Attrition;
8. Safety monitoring, including biomarker selection;
9. Feasibility and pilot issues;
10. Timing issues, including the availability of early data on safety outcomes;
11. Interpretation of negative outcomes: how any negative results would be communicated;
12. Trial sites chosen to include countries important to a particular company;
13. The adequacy of self-reported data; and
14. Project management issues.

Alcohol industry executives required access to a high level of scientific expertise to identify the likelihood of the trial

producing results that conflicted with commercial interests. Alcohol industry executives not only asked questions but also made several suggestions to alter the design, and by extension the results, of the study. For example, one asked whether there was an "upper age limit cutoff," stating "narrowing the age band would give a tighter cohort. Is this worth doing?"1(p105) Researcher responses to industry comments helped reassure industry executives that any commercial risks associated with funding the trial were mitigated because of the study's design. For example, one of the researchers stated "one of the important findings will be showing that moderate drinking is safe "1(p116, emphasis added)

WINDOWS OF OPPORTUNITY CREATED

Alcohol industry executives used the discussions with NIAAA officials and researchers to gain wider insights into alcohol research relevant to their interests. For example, ICAP requested (and received) a list of attendees at a Research Society on Alcoholism symposium.1(p102-103) According to an NIAAA official, there were also discussions "on some other issues like the Dietary Guidelines that [industry] keep bugging us (me) on."1(p54) Additionally, industry executives sought to advance their influence at the science- policy interface. For example, in November 2013, while the Organization for Economic Co-operation and Development were working on a major report on alcohol policy, a Spirits Europe representative shared a note relating to this meeting with an NIAAA official. This note indicated the Spirits Europe representative's "difficulties with their [Organization for Economic Co-operation and Development] apparent acceptance of the consumption = harm equation" and their "grave concerns about the general nature of that paper. "1(p95)

The e-mail correspondence revealed instances of industry executives discussing unrelated NIAAA-funded studies with NIAAA officials. For example, an NIAAA staff member reported that a Distilled Spirits Council of the United States executive " hit on me again on our grant studying the effect of privatization on spirits and overall alcohol consumption. "1(p47) There was also discussion of future projects, such as "the proposed work NIAAA plans on a conference on the benefits of alcohol (within the next year)."1(p95) The ACD WG report examined the NIAAA portfolio over time because of the obvious risks revealed about the integrity of its decisionmaking. A reduction in the funding of some categories of highly policy-relevant research was noted in the report; however, the conclusion reached was that "it is not unusual for Institute research portfolios to evolve over time."1(p12) The need to examine the robustness of this conclusion with further investigations of NIAAA decision-making should be clear from the foregoing.

SCIENTIFIC, HEALTH, AND POLICY IMPLICATIONS

We moved beyond the findings of the ACD WG report to provide detail on which alcohol industry actors became involved in the MACH trial, how they were organized, and which features of the trial design they sought to influence. This industry involvement, alongside NIAAA officials and researchers' efforts to secure industry funding, meant that all three parties coproduced the biased trial design. Despite the termination of the trial, however, the data analyzed suggests that alcohol industry actors benefited from their donations in other ways, including gaining insight into alcohol research and policy both at the US and global level. Concerns have been raised within the scientific community about ICAP and IARD's role in science21 and policy,12 and this particular case demonstrates the need for further study of IARD's ongoing activities, especially relationship building with researchers and officials. We encourage the NIAAA to recognize the need to strengthen the alcohol policy evidence base by funding research on industry's commercial, political, and scientific activities.

The researchers stand by the scientific integrity of their decision-making,2 and as far as we are aware, there has been no investigation of their conduct by their universities. The case for the MACH trial, published in Alcoholism: Clinical and Experimental Research,22 does not make any disclosures pertaining to the interactions with industry executives detailed in the NIH report and has not been withdrawn or corrected. We encourage the journal editors of Alcoholism: Clinical and Experimental Research to require that the authors add full disclosures regarding industry interactions and to withdraw the article if these are not forthcoming. Further investigation of this case may also aid scientific understanding of research norms and practices in interactions with corporate actors to support strengthening conflict of interest management procedures to secure the ethical conduct of research.

The Foundation for the National Institutes of Health provided the conduit through which large sums could be donated, and there is some evidence available that alcohol industry actors have previously used charities to advance their policy goals.23 The NIAAA director remains in position, and it will be interesting to see how far NIAAA learns the lessons available from this episode. We urge the NIH to make all documents associated with the MACH trial publicly available, including the Office of Management Assessment review. This could provide new insights to help manage corporate efforts to influence public research funding bodies and enable the scientific community to develop more robust firewalls between industry and publicly funded institutions.

The major scientific challenge involved in determining whether there are any cardioprotective effects of alcohol remains unresolved, and the MACH trial has involved much wasted effort. Our analysis gives further substance to the doubts associated with industry funding of older studies on the subject.14 Unlike the tobacco industry, there are few accessible internal alcohol company documents that permit direct insights into how strategies are developed and executed to bias science or influence policy.12,21 Further study of this episode could include broadening the data set to include related information in the public domain and identifying ICAP and IARD interactions with the NIAAA, other publicly funded bodies, and relationship building with researchers.

Alcohol companies were key actors in the MACH trial, and we know little about their involvement in science more generally.21 Further study is needed of how relationships between alcohol industry actors, researchers, research funding, and other publicly funded bodies develop over time as well as the governance issues raised to protect such bodies from inappropriate corporate influence. The consistency between alcohol industry involvement in this case and broader evidence on corporate activities to bias research agendas and distort the evidence base necessary for effective public policy7,10 shows that this work is urgently required to protect scientific integrity.

CONTRIBUTORS

G. Mitchell andJ. McCambridge wrote the first draft of the article, which M. Lesch revised with important intellectual content. J McCambridge is the guarantor. All authors worked on successive drafts together and approved the submitted version.

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CONFLICTS OF INTEREST

The authors have no conflicts of interests to declare.

Sidebar

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References

REFERENCES

1. National Institutes of Health Advisory Committee to the Director. ACD Working Group for review of the Moderate Alcohol and Cardiovascular Health Trial: June 2018 report. Available at: https://acd.od.nih.gov/documents/presentations/ 06152018Tabak-B.pdf. AccessedJanuary 9, 2020.

2. Dyer O. $100m alcohol study is cancelled amid pro-industry "bias." BMJ. 2018;361:k2689.

3. Rabin RC. Federal agency courted alcohol industry to fund study on benefits of moderate drinking. New York Times. March 17, 2018.

4. Jernigan DH. The global alcohol industry: an overview. Addiction. 2009; 104(suppl 1):6-12.

5. Mialon M, McCambridge J. Alcohol industry corporate social responsibility initiatives and harmful drinking: a systematic review. Eur J Public Health. 2018; 28(4):664-673.
6. Babor TF, Robaina K. Public health, academic medicine, and the alcohol industry's corporate social responsibility activities. Am J Public Health. 2013;103(2): 206-214.
7. White J, Bero L. Corporate manipulation of research: strategies are similar across five industries. Stan L &Pol'y Rev. 2010;21(1):105-134.
8. Nestle M. Unsavoury Truth: How Food Companies Skew the Science of What We Eat. New York, NY: Basic Books; 2018.
9. Aaltonen P. Science and industry: let's agree on goals and shared wins. Am JPublic Health. 2019;109(7):949.
10. Fabbri A, Lai A, Grundy Q, Bero LA. The influence of industry sponsorship on the research agenda: a scoping review. Am J Public Health. 2018;108(11):e9-e16.
11. Rabin RC. Is alcohol good for you? An industry-backed study seeks answers. New York Times. July 3, 2017.
12. McCambridge J, Mialon M, Hawkins B. Alcohol industry involvement in policymaking: a systematic review. Addiction. 2018;113(9):1571-1584.
13. Ronksley PE, Brien SE, Turner BJ, Mukamal KJ, Ghali WA. Association of alcohol consumption with selected cardiovascular disease outcomes: a systematic review and meta-analysis. BMJ. 2011;342: d671.
14. McCambridge J, Hartwell G. Has industry funding biased studies of the protective effects of alcohol on cardiovascular disease? A preliminary investigation of prospective cohort studies. Drug Alcohol Rev. 2015;34(1):58-66.
15. Holmes MV, Dale CE, Zuccolo L, et al. Association between alcohol and cardiovascular disease: Mendelian randomisation analysis based on individual participant data. BMJ. 2014;349:g4164.
16. Zhao J, Stockwell T, Roemer A, Naimi T, Chikritzhs T. Alcohol consumption and mortality from coronary heart disease: an updated meta-analysis of cohort studies. J Stud Alcohol Drugs. 2017; 78(3):375-386.
17. Millwood IY, Walters RG, Mei XW, et al. Conventional and genetic evidence on alcohol and vascular disease aetiology: a prospective study of 500 000 men and women in China. Lancet. 2019; 393(10183):1831-1842.
18. Joffe H. Thematic analysis. In: Harper D, Thompson AR, eds. Qualitative Research Methods in Mental Health and Psychotherapy. Hoboken, NJ: Wiley; 2012: 209-223.
19. Jernigan DH. Global alcohol producers, science, and policy: the case of the international center for alcohol policies. Am J Public Health. 2012;102(1):80-89.
20. Jernigan DH, Babor TF. The concentration of the global alcohol industry and its penetration in the African region. Addiction. 2015;110(4):551-560.
21. McCambridge J, Mialon M. Alcohol industry involvement in science: a systematic review of the perspectives of the alcohol research community. Drug Alcohol Rev. 2018;37(5):565-579.
22. Mukamal KJ, Clowry CM, Murray MM, et al. Moderate alcohol consumption and chronic disease: the case for a long-term trial. Alcohol Clin Exp Res. 2016;40(11):2283-2291.
23. Lyness SM, McCambridge J. The alcohol industry, charities and policy influence in the UK. Eur J Public Health. 2014;24(4):557-561.

DETAILS

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Hurricane Harvey Hospital Flood Impacts: Accuracy of Federal Emergency Management Agency Flood Hazard Areas in Harris County, Texas

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ABSTRACT (ENGLISH)

Objectives. To compare the flood impacts experienced by Harris County, Texas, hospitals with Federal Emergency Management Agency (FEMA) flood hazard areas and Hurricane Harvey's inundation boundary. Methods. One year following Hurricane Harvey, we created a novel data set of Hurricane Harvey's flood impacts in Harris County hospitals. We then mapped the hospital flood impact data in ArcGIS alongside FEMA flood hazard areas and Hurricane Harvey's inundation boundary to classify each hospital's location in high flood-risk areas and in areas purportedly affected by Hurricane Harvey. Results. Of the 66 hospitals for which flood impact information was ascertained, 16 (24%) hospitals experienced flood impacts during Hurricane Harvey. Of these 16 hospitals, 5 (31%) were located outside a FEMA flood hazard area and 8 (50%) were located outside Hurricane Harvey's inundation boundary. Conclusions. FEMA flood hazard areas did not accurately predict all areas of Harris County, Texas, that flooded during Hurricane Harvey or which hospitals experienced flood impacts. (Am J Public Health. 2020;1 10:574-579. doi:10.2105/AJPH.2019. 305520)

FULL TEXT

Headnote

Objectives. To compare the flood impacts experienced by Harris County, Texas, hospitals with Federal Emergency Management Agency (FEMA) flood hazard areas and Hurricane Harvey's inundation boundary.

Methods. One year following Hurricane Harvey, we created a novel data set of Hurricane Harvey's flood impacts in Harris County hospitals. We then mapped the hospital flood impact data in ArcGIS alongside FEMA flood hazard areas and Hurricane Harvey's inundation boundary to classify each hospital's location in high flood-risk areas and in areas purportedly affected by Hurricane Harvey.

Results. Of the 66 hospitals for which flood impact information was ascertained, 16 (24%) hospitals experienced flood impacts during Hurricane Harvey. Of these 16 hospitals, 5 (31%) were located outside a FEMA flood hazard area and 8 (50%) were located outside Hurricane Harvey's inundation boundary.

Conclusions. FEMA flood hazard areas did not accurately predict all areas of Harris County, Texas, that flooded during Hurricane Harvey or which hospitals experienced flood impacts. (Am J Public Health. 2020;1 10:574-579. doi:10.2105/AJPH.2019. 305520)

Hurricane Harvey made landfall in Texas as a Category 4 hurricane on August 26, 2017. Areas of Harris County, Texas, received between 40 and 60 inches of rain, surpassing the previous single-storm rainfall record in the continental United States.1 The ensuing flooding, influenced by a variety of factors, left an estimated 25% of Harris County underwater, with 50% of total flooding occurring outside Federal Emergency Management Agency (FEMA) flood hazard areas.2 4

Initial reports indicated that hospitals across Harris County scrambled to evacuate patients amid basement flooding

and damage to kitchens, pharmacies, and supplies.5 Although many of these hospitals had previous experience with flooding and recently fortified buildings to increase their preparedness, many also experienced difficulty withstanding Harvey's flood impacts: hospital access roads were blocked, winds prevented helicopter landings, and food supplies ran low.5,6

Hospitals are critical infrastructure that should be capable of delivering both dayto-day and emergency services at surge capacity during extreme weather events, such as flooding. Aside from providing care to currently admitted patients, hospitals must also manage new patients with flood-related health concerns; this necessitates efforts to minimize hospitals' flood-related complications related to power generation, clean water provision, patient safety, communication, and access.7-9

Planning for extreme flooding events and reducing hospital vulnerabilities require understanding where flood impacts are most likely. The FEMA National Flood Hazard Layer is a geospatial database used to map high flood-risk areas (100-year and 500-year flood hazard areas), but several recent studies have expressed concerns about its reliability for planning and policy purposes.10,11 For hospitals, decisions on matters such as evacuation procedures and flood insurance can be based primarily on FEMA flood hazard areas. Therefore, it is important to determine this data source's validity in predicting where water inundation and impacts occurred from an extreme flooding event.

Harris County is located in southeast Texas and is highly susceptible to heavy rainfall and storm surge events because ofits proximity to the Gulf of Mexico.12,13 Harris County's dams and bayous, which are intended to hold and channel water toward the Gulf, are at risk offailingandare often overwhelmedby flood waters.13 This physical vulnerability, paired with the explosive growth in Harris County from approximately 2 million to 6.5 million people since 1970, is putting an unprecedented number of people at risk during extreme flooding events.13 Unchecked urban sprawl since the 1990s has resulted in the loss of almost 30% of the county's wetlands, which were largely responsible for retaining stormwater.14,15 Although the Texas coast has experienced several extreme flooding events in the past 2 decades, including Tropical Storm Allison (2001), Hurricane Ike (2008), the Memorial Day Flood (2015), and the Tax Day Flood (2016), many questioned whether Harris County had adequately prepared for Hurricane Harvey's arrival in 2017.15 17

Hurricane Harvey provided an opportunity to use geospatial analysis to validate FEMA flood hazard area data against the flood impacts experienced in Harris County's hospitals and the hurricane's inundation boundary, demonstrating the reliability of these data for future extreme flood planning in coastal Texas and elsewhere.

METHODS

We focused on the 80 nonpsychiatric hospitals in Harris County, Texas. We excluded psychiatric hospitals from this analysis because they do not serve the general public or address physical health concerns during a hurricane.

Data Sources

Hospital flood impacts in Harris County, Texas. We first created a novel data set of Hurricane Harvey's flood impacts experienced in Harris County hospitals through secondary data searches and telephone calls with hospitals. The "flood impacts" definition we used encompassed any case of water entering a hospital building. We used 2 methods to obtain information for as many hospitals as possible while also cross-validating our findings.

First, we searched for secondary data from news reports and documents from government agencies and local organizations. We identified these secondary sources through Google searches using hospital names and keywords such as "Hurricane Harvey" and "flood." We categorized the secondary sources used in this analysis as follows: news reports (n = 31), peer-reviewed journal articles (n = 1), government agency documents (n = 2), local organization documents (n = 3), and hospital Web sites (n = 10).

Next, we called each of the 80 hospitals during business hours and asked to speak with staff from facilities or emergency management to determine whether the hospital experienced any flooding during Hurricane Harvey. Using the combined results of the secondary source search and telephone calls with hospitals, we were able to ascertain flood impacts for 66 of the 80 hospitals in Harris County, leaving 14 hospitals with no data on flood impacts. We did not find any disagreements between the 2 methods used for obtaining hospital flood impacts.

Geospatial data sets. The shapefiles we used for the geographic information system analysis of flood impacts from

Hurricane Harvey on hospital infrastructure are summarized here.

The Homeland Infrastructure Foundation-Level Data (HIFLD) hospitals shapefile contains all US hospitals' location information and descriptive characteristics acquired from various state or federal sources (https://hifldgeoplatform.opendata.arcgis.com/datasets/ hospitals). We extracted HIFLD information for all hospital types except for psychiatric hospitals in Harris County, Texas, from April 2017. To map the novel hospital flood impact data set described earlier, we spatially linked them to the HIFLD hospitals shapefile.

We acquired Harris County's FEMA flood hazard areas from the National Flood Hazard Layer database (https://msc.fema.gov/ portal/advanceSearch). This geospatial database contains polygons delineating high flood-risk areas (100- and 500-year flood hazard areas) that are based on current hydrology, infrastructure, and land use. The 100-year flood hazard areas delineate land with a 1% chance of flooding in any given year, whereas the 500-year flood hazard areas delineate land with a 0.2% chance of flooding in any given year. The FEMA National Flood Hazard Layer database is updated through several processes, including Letters of Map Revision, Letters of Map Amendment, and a cost-benefit approach, in which communities are chosen for updates based on criteria such as development levels and date of last update. Because the FEMA National Flood Hazard Layer database's historic versions are not archived online, we performed our analysis retrospectively using the January 2018 version.

We acquired 2 versions of Hurricane Harvey's inundation boundary, 1 from Harris County Flood Control District (HCFCD; https://www.hcfcd.org/hurricane-harvey/ countywide-impacts) and the other from FEMA's Natural Hazard Risk Assessment Program (https://data.femadata.com/FIMA/ NHRAP/Harvey). Both versions estimate the maximum area of water inundation during the hurricane. The HCFCD created an inundation boundary by assessing high-water marks using water-monitoring sites and manual surveying to identify where the bayous and tributaries overflowed their banks during Hurricane Harvey.18

The FEMA Natural Hazard Risk Assessment Program created another version ofthe inundation boundary by supplementing the initial HCFCD high-water marks with US Geological Survey high-water marks. For each data set, HCFCD and FEMA interpolated the high-water marks into a continuous water surface elevation using the inverse distance weighting method, and then they compared these with Harris County's digital elevation model to delineate the inundation's estimated boundary. Both versions of Hurricane Harvey's inundation boundary were created in 2017 following Hurricane Harvey.

To capture the full potential inundation extent of Hurricane Harvey, we merged the HCFCD and FEMA inundation extent shapefiles using a geometric union, which allowed all areas assessed as inundated in either data set to be considered inundated in the merged data. It is important to note that neither of these inundation boundary estimates necessarily shows all flood impacts throughout Harris County or necessarily indicates where structural flooding occurred, because water levels, as well as structure elevations and flood-resistant design, varied widely throughout the inundated areas.

Geographic Information System Analysis

Our first goal was to identify the areas of overlap and nonoverlap between Harris County's FEMA flood hazard areas and Hurricane Harvey's inundation boundary, allowing an assessment ofwhether the FEMA flood hazard areas accurately predicted the areas of Harris County that would flood during an extreme flooding event such as Hurricane Harvey.

Our second goal was to assess whether Harris County hospital flood impacts from Hurricane Harvey were accurately predicted (1) by the hospitals' flood risk because oftheir locations in FEMA flood hazard areas or (2) by their locations in Hurricane Harvey's inundation boundary. To do this, first we classified each hospital's location as either inside or outside a FEMA flood hazard area, because the likelihood of hospital flood impacts should be higher for hospitals located in a FEMA flood hazard area. Next, we classified each hospital's location as either inside or outside Hurricane Harvey's inundation boundary. We then compared these 2 flood-risk classifications with whether hospitals reported (either verbally in a telephone call or through secondary data) flood impacts during Hurricane Harvey based on the flood impacts data set we created as outlined.

We completed all geographic information system analyses in ArcMap version 10.6.1 (ESRI, Redlands, CA).19

RESULTS

Using both primary and secondary data sources, we ascertained information about Hurricane Harvey's flood impacts for 66 of the 80 nonpsychiatric hospitals in Harris County included in this study. Of the 66 hospitals for which we ascertained flood impact information, 16 hospitals (24% of those ascertained) experienced flood impacts during Hurricane Harvey and 50 hospitals (76% of those ascertained) did not experience flood impacts during Hurricane Harvey. Table A (available as a supplement to the online version of this article at http://www. ajph.org) presents the flood impacts by hospital, as well as their locations inside or outside the FEMA flood hazard areas and Hurricane Harvey's inundation boundary.

The geographic information system analyses revealed considerable disagreement between the FEMA flood hazard areas and Hurricane Harvey's inundation boundary. Totaling 382 square miles, the areas of overlap between the FEMA flood hazard areas and Hurricane Harvey's inundation boundary, such as in the Addicks and Barker reservoirs and around Lake Houston and other major waterways, are shown in beige in Figure 1. However, we observed 2 types of nonoverlap. Approximately 37% (227 mi2) ofthe FEMA flood hazard areas did not experience inundation from Hurricane Harvey according to Hurricane Harvey's inundation boundary (red represents both 100- and 500-year FEMA flood hazard areas in Figure 1). Approximately 18% (83 mi2) of the areas that experienced inundation were located outside FEMA flood hazard areas (blue in Figure 1).

The 80 nonpsychiatric hospitals in Harris County included in this study are also mapped in Figure 1. The 16 hospitals that experienced flood impacts during Hurricane Harvey are shown as green dots, and the 50 hospitals that did not experience flood impacts during Hurricane Harvey are shown as black dots. Hospitals for which Hurricane Harvey flood impacts were not ascertained (n = 14) are represented as black Xs.

Next, we sought to understand whether the hospital flood impacts were predicted well by the FEMA flood hazard areas and Hurricane Harvey's inundation boundary. From top to bottom, the flowchart in Figure 2 displays whether hospitals in Harris County were located inside or outside a FEMA flood hazard area, followed by whether they were located inside or outside Hurricane Harvey's inundation boundary, followed by whether they experienced flood impacts during Hurricane Harvey. The results presented in the bottom row are categorized into 3 themes: expected results, unpredicted results with potential explanations, and unexpected flooding.

Of the 66 hospitals whose flood impacts we ascertained, 40 (60%) fell into the "expected results" theme (shown with a solid outline in Figure 2). We largely expected these hospitals' flood impacts (or lack thereof) based on the hospitals' flood risk. For example, 6 hospitals in this category experienced flood impacts, but this should have been expected because they had a high flood risk owing to theirlocations in a FEMA flood hazard area and Hurricane Harvey's inundation boundary. Similarly, 34 hospitals did not experience flood impacts, but this was expected because their locations were outside FEMA flood hazard areas and Hurricane Harvey's inundation boundary.

Of the 66 hospitals whose flood impacts we ascertained, 21 (32%) fell into the "unpredicted results with potential explanations" theme (shown with a dotted outline in Figure 2). These hospitals' flood impacts were largely unpredicted but have potential explanations worth exploring. For example, 16 hospitals did not experience flood impacts despite high flood risk owing to theirlocations inside both the FEMA flood hazard area and Hurricane Harvey's inundation boundary (n = 3) or locations inside a FEMA flood hazard area only (n = 13). Five other hospitals in this category did experience flood impacts, but we did not predict this because they were located outside Hurricane Harvey's inundation boundary (despite being inside the FEMA flood hazard area). We explore the potential explanations for these unpredicted results in the Discussion.

Of the 66 hospitals whose flood impacts we ascertained, 5 (8%) fell into the "unexpected flooding" theme (shown with a dashed outline in Figure 2). These hospitals' flood impacts were unexpected based on the low flood risk as a result of theirlocations outside a FEMA flood hazard area (2 hospitals were located inside Hurricane Harvey's inundation boundary, and the remaining 3 were located outside the inundation boundary). Considering their lower flood risk, it is possible that these hospitals were perhaps less prepared for the flood impacts.

DISCUSSION

To our knowledge, our study is the first to document Hurricane Harvey's flood impacts on Harris County hospitals

and compare these impacts to FEMA flood hazard areas through geospatial analysis. FEMA flood hazard areas are heavily considered in hospital emergency preparedness planning; therefore, it is imperative to establish whether the FEMA flood hazard areas are reliable in predicting hospital flood impacts.

Our analysis first revealed that the FEMA flood hazard areas did not accurately predict the areas of Harris County, Texas, that flooded during Hurricane Harvey in August 2017. The analysis also indicated that of the 16 hospitals that experienced Hurricane Harvey flood impacts, only 11 (69%) were located in a FEMA flood hazard area. Thus, the remaining 5 hospitals that experienced flood impacts were located outside a FEMA flood hazard area-a particularly concerning finding considering that these hospitals were likely less prepared because of their lower perceived risk. Despite being used by hospitals to identify flood risk, plan emergency procedures, and inform policy decisions, the FEMA flood hazard area data had not previously been validated against the impacts of flooding on Harris County's hospital infrastructure. Our study demonstrates that FEMA flood hazard areas did not fully capture hospital flood impacts, with severe implications for health care service continuity and patient safety. Our concerns about the data's validity support several other studies' findings documenting disagreement between FEMA's flood-risk estimates and actual flood losses, particularly in coastal Texas.10,11

Although our results primarily indicate reliability concerns with the FEMA flood hazard areas, 2 other potential explanations exist for the unpredicted flood impacts found. First, some hospitals (n = 8) located outside Hurricane Harvey's inundation boundary still experienced flood impacts, potentially implying problems with the inundation boundary's accuracy. Alternatively, because our "flood impacts" definition was broad (encompassing any case of water entering a hospital building), it is possible that the reported hospital flood impacts were not attributable to ground-level water inundation, but instead structural problems that led to falling water getting into the hospital. Our study, however, was not able to confirm each hospital's flooding source. Second, some hospitals (n = 3) located inside Hurricane Harvey's inundation boundary did not experience flood impacts, suggesting that these hospitals may have prevented flooding by implementing flood-adaptation strategies in advance. We were unable to confirm either of these potential explanations, but it is crucial that both be further explored in future studies to inform hospital preparations for future extreme flooding in Harris County and elsewhere.

Limitations and Future Directions

Some study limitations, as well as suggestions for forthcoming studies, are worth noting. First, because no historic versions of the FEMA flood hazard area data exist, we considered only the January 2018 version available during analysis. Considering that FEMA flood hazard area reevaluations take time, it is unlikely that the updated version already incorporated Hurricane Harvey's impact, and, therefore, we do not anticipate any drastic differences in the FEMA flood hazard area data between August 2017 and January 2018. Additionally, we considered only 2 versions of Hurricane Harvey's inundation boundary, those created by FEMA and HCFCD, neither of which considered floodwater depth. Future studies would benefit from comparing a larger number of inundation boundaries, including floodwater depth estimates, to understand the full extent of flooding related to a hurricane or other extreme rainfall event.

Second, our broad "flood impacts" definition may have unintentionally included impacts unrelated to ground-level water inundation, thus inflating the category of hospitals with unexpected flood impacts. However, these other flood impacts are important and should be further investigated. Additionally, hospitals with more severe flood impacts may be more likely to disclose their flood impacts, meaning our findings could underestimate Hurricane Harvey's true impacts on Harris County's hospitals. Future studies should use different flooding categories with specific definitions to separate out the causes of flooding and help inform how hospitals prepare for future flooding events.

Additionally, even though we used 2 methods to ascertain hospital flood impacts, we were unable to ascertain flood impacts for all 80 hospitals. We also limited our analysis to nonpsychiatric hospitals. Future studies on health care service flood impacts should include all facilities to determine if the impacts we uncovered apply more widely.

Recommendations

Based on our findings, we recommend the following for flood-prone hospitals and their partner organizations in academia, private industry, and government. First, because our study's results are only applicable to Harris County,

Texas, we advise that future studies validate FEMA flood hazard area data against flood extents and impacts in other US case studies. Second, because FEMA flood hazard areas are the traditional source of flood-risk estimates, we suggest exploring avenues to improve the FEMA flood hazard area data's reliability in predicting flood extents and impacts. Third, researchers should test whether alternative data sources could potentially complement, or even replace, FEMA flood hazard area data to inform emergency preparedness plans and policy decisions.

Public Health Implications

Hospitals are a critical component of our country's health care infrastructure and are tasked with delivering both day-to-day and emergency services at surge capacity during extreme flooding events. Our results document a concerning inconsistency between FEMA flood hazard areas and hospitals' flood impacts following Hurricane Harvey in Harris County, Texas, strengthening the evidence base that FEMA flood hazard areas deserve further scrutiny in informing hospital emergency preparedness plans and policy. In the interest of health care service continuity and patient safety during extreme flooding events, hospitals nationwide must be provided with reliable flood-risk estimates.

Overall, this study contributes to efforts aimed at improving US hospitals' ability to better prepare for, respond to, and recover from future catastrophic flooding events such as Hurricane Harvey. With extreme flooding events predicted to become more frequent and intense in many regions across the United States over the next decade,20 it is crucial to fully understand the risks and impacts of flooding on health care infrastructure to ensure health care availability and accessibility during future extreme flooding events.7,9 ÂfPU

CONTRIBUTORS

E. Hines conceptualized the study, collected and analyzed the data, and wrote the article. C. E. Reid supervised the study conceptualization and the data collection and analysis and critically revised the article. Both authors designed the research, discussed the results, and wrote the final version of the article.

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CONFLICTS OF INTEREST

Neither author has any conflicts of interest to declare.

HUMAN PARTICIPANT PROTECTION

The University of Colorado Boulder institutional review board deemed this study exempt from review because no human participants were involved in this study.

Sidebar

Correspondence should be sent to Emmanuelle Hines, University of Colorado Boulder, Department of Geography, Guggenheim 110, 260 UCB, Boulder, CO 80309 (e-mail: emmanuelle.hines@colorado.edu). Reprintscan beordered at http://www.ajph.org by clicking the "Reprints" link.

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References

REFERENCES

1. Resnick B. Harveybroke a national rainfall recordfora single tropical storm. Vox. 2017. Available at: https://www.vox.com/science-and-health/2017/8/29/16221542/ hurricane-harvey-rainfall-record-houston. Accessed September 11, 2017.

2. Dart T, Helmore E. Hurricane Harvey claims second victim in Texas as threat of flooding rises. The Guardian. 2017. Available at: http://www.theguardian.com/usnews/2017/aug/26/texas-cities-catastrophicflooding-hurricane-harvey. Accessed September 10, 2017.

3. Pinter N, Santon N, Hui R. Preliminary analysis of Hurricane Harvey flooding in Harris County, Texas. Calif WaterBlog. 2017. Available at: https://californiawaterblog. com/2017/09/01/preliminary-analysis-of-hurricaneharvey-

flooding-in-harris-county-texas. Accessed September 25, 2018.
4. Sullivan K, Hernandez AR, Fahrenthold DA. Harvey leaving record rainfall, at least 22 deaths behind in Houston. Chicago Tribune. 2017. Available at: http:// www.chicagotribune.com/news/nationworld/cthurricane-harvey-flooding-houston-20170829-story. html. Accessed September 10, 2017.
5. Goldstein A, McGinley L. Some hospitals evacuated, but Houston's medical world mostly withstands Harvey. Washington Post. 2017. Available at: https://www. washingtonpost.com/national/health-science/somehospitals-evacuated-but-houstons-vaunted-medicalworld-mostly-withstands-harvey/2017/08/30/ 2e9e5a2c-8d90-11e7-84c0-02cc069f2c37_story.html. Accessed September 10, 2017.
6. Fink S, Blinder A. Houston's hospitals treat storm victims and become victims themselves. New York Times. 2017. Available at: https://www.nytimes.com/2017/08/ 28/us/hurricane-harvey-houston-hospitals-rescue.html. Accessed September 10, 2017.
7. Few R, Ahern M, Matthies F, Kovats RS. Floods, Health, and Climate Change: A Strategic Review. Norwich, UK: Tyndall Centre for Climate Change Research; 2004.
8. Frumkin H, Hess J, Luber G, Malilay J, McGeehin M. Climate change: the public health response. Am J Public Health. 2008;98(3):435-445.
9. Keim ME. Building human resilience. Am J Prev Med. 2008;35(5):508-516.
10. HoustonD, CheungW,BasoloV, etal. The influence ofhazard maps and trust offlood controls on coastal flood spatial awareness and risk perception. Environ Behav. 2017; 51(4):347-375.
11. Blessing R, Sebastian A, Brody SD. Flood risk delineation in the United States: how much loss are we capturing? Nat Hazards Rev. 2017;18(3):04017002.
12. Mousavi ME, Irish JL, Frey AE, Olivera F, Edge BL. Global warming and hurricanes: the potential impact of hurricane intensification and sea level rise on coastal flooding. Clim Change. 2011;104(3-4):575-597.
13. Dart T. Houston fears climate change will cause catastrophic flooding: "It's not if, it's when." Guardian. 2017. Available at: https://www.theguardian.com/ environment/2017/jun/16/texas-flooding-houstonclimate-change-disaster. Accessed September 1, 2018.
14. Jacob JS, Pandian K, Lopez R, Biggs H. Houston-Area Freshwater Wetland Loss, 1992-2010. College Station, TX: Texas A&M University; 2015.
15. Satija N, Collier K, Shaw A, Larson J. Hell and high water. ProPublica. 2016. Available at: https://projects. propublica.org/houston. Accessed September 1, 2018.
16. Scranton R. Opinion: when the next hurricane hits Texas. New York Times. 2018. Available at: https://www. nytimes.com/2016/10/09/opinion/sunday/when-thehurricane-hits-texas.html. Accessed September 1, 2018.
17. Hunn D, Dempsey M, Zaveri M. In Harvey's deluge, most damaged homes were outside the flood plain, new data show. Houston Chronicle. 2018. Available at: https:// www.houstonchronicle.com/news/article/In-Harveys-deluge-most-damaged-homes-were-12794820.php. Accessed September 10, 2018.
18. Harris County Flood Control District. Countywide impacts. 2018. Available at: https://www.hcfcd.org/ hurricane-harvey/countywide-impacts. Accessed March 2, 2019.
19. Environmental Systems Research Institute. ArcGIS Desktop. Redlands, CA; 2018.
20. Bierbaum R, Lee A, Smith J, et al. Adaptation. In: Melillo JM; US Global Change Research Program, eds. Climate Change Impacts in the United States: The Third National Climate Assessment. Washington, DC: US Government Printing Office; 2014.

DETAILS

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Outreach and Inreach Strategies for Colorectal Cancer Screening Among Latinos at a Federally Qualified Health Center: A Randomized Controlled Trial, 2015–2018

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ABSTRACT (ENGLISH)

Objectives. To compare usual care, inreach consisting of one-on-one education, mailed outreach offering a fecal immunochemical test (FIT), and a combination of outreach and inreach for promoting colorectal cancer (CRC) screening. Methods. We conducted a 4-arm randomized controlled trial from 2015 to 2018 at a US federally qualified health centernearthe California-Mexico border primarily serving low-income Hispanics/Latinos. A total of 673 individuals aged 50 to 75 years not up to date with screening were assigned to 1 of the 4 intervention groups. The primary outcome was CRC screening through 6 months follow-up. Results. A total of 671 patients were included in intention-to-screen analyses. Their mean age was 59.9 years, 48.9% were male, and 86.3% were primarily Spanish-speaking. Screening was 27.5% for usual care (95% confidence interval [CI] = 0.21,0.34), 52.7% for inreach (95% CI = 0.45, 0.60), 77.2% for outreach (95% CI = 0.71, 0.83), and 78.9% for combination of inreach and outreach (95% CI = 0.73, 0.85;P< .001 for all comparisons except P =.793 for outreach vs combination). Conclusions. Among individuals at high risk for noncompletion, inreach with one-onone education nearly doubled, and outreach offering mailed FIT alone or in combination with inreach nearly tripled screening compared with usual care. Mailed FIT outreach was superior to inreach for promoting screening. (Am JPublic Health. 2020;110:587-594. doi:10.2105/AJPH.2019.305524)

FULL TEXT

Headnote

Objectives. To compare usual care, inreach consisting of one-on-one education, mailed outreach offering a fecal immunochemical test (FIT), and a combination of outreach and inreach for promoting colorectal cancer (CRC) screening.

Methods. We conducted a 4-arm randomized controlled trial from 2015 to 2018 at a US federally qualified health centernearthe California-Mexico border primarily serving low-income Hispanics/Latinos. A total of 673 individuals aged 50 to 75 years not up to date with screening were assigned to 1 of the 4 intervention groups. The primary outcome was CRC screening through 6 months follow-up.

Results. A total of 671 patients were included in intention-to-screen analyses. Their mean age was 59.9 years, 48.9% were male, and 86.3% were primarily Spanish-speaking. Screening was 27.5% for usual care (95%

confidence interval [CI] = 0.21,0.34), 52.7% for inreach (95% CI = 0.45, 0.60), 77.2% for outreach (95% CI = 0.71, 0.83), and 78.9% for combination of inreach and outreach (95% CI = 0.73, 0.85;P< .001 for all comparisons except P =.793 for outreach vs combination).

Conclusions. Among individuals at high risk for noncompletion, inreach with one-onone education nearly doubled, and outreach offering mailed FIT alone or in combination with inreach nearly tripled screening compared with usual care. Mailed FIT outreach was superior to inreach for promoting screening. (Am JPublic Health. 2020;110:587-594. doi:10.2105/AJPH.2019.305524)

Colorectal cancer (CRC) is the second leading cause of cancer death in the United States. CRC accounts for more than 145 000 new cancer diagnoses and more than 51 000 deaths annually.1 Screening can reduce CRC incidence and mortality,2 4 but it is underutilized in the United States. The overall screening rate is 62%, and it is even lower among underserved populations such as racial/ethnic minorities, those with low income and education, or those who are underinsured or uninsured.5 At 47%, Hispanics/ Latinos (hereafter referred to as Latinos) have among the lowest screening rates and are at increased risk for higher stage at diagnosis.5,6 Because Latinos are the largest and one ofthe fastest-growing ethnic populations in the United States,7 strategies for increasing CRC screening in this group are needed.

Evidence-based strategies for promoting CRC screening include one-on-one education, patient reminders, provider education, provider reminders, offering screening at time of annual influenza vaccination, patient navigation addressing barriers to screening, and mailed outreach offering screening.8-17 Multicomponent interventions including more than 1 of these strategies appear to be superior to single-component interventions. Interventions including mailed outreach or patient navigation appear to be associated with the highest absolute increases in screening rates compared with usual care, with absolute increases in screening estimated to be 22% and 18% for outreach and navigation, respectively.16 Overall, it appears that multiple strategies, in particular those including mailed outreach with or without navigation, are ripe for implementation in 18 primary care settings.

Despite availability of evidence-based strategies, a key challenge for health care organizations is selecting what strategies to implement, a choice that should be informed by available resources for delivery. Strategyspecific resources required may vary widely. For example, resources required for an inreach intervention consisting of one-onone education and navigation include space to deliver education, trained personnel to deliver education and navigation for each patient not up to date with screening, and time to track and follow up with each patient. By contrast, resources required for a mailed outreach intervention with offers to complete screening include a system for identifying individuals not up to date across the health care population such as a comprehensive data query of electronic medical records (EMRs), generating and tracking screening offers, and personnel to deliver invitations, provide telephone reminders, and navigation. Most strategies have not been compared head to head with other strategies with respect to effectiveness for promoting screening, making selection of strategies based on comparative effectiveness a challenge. To our knowledge, head-to-head effectiveness trials in federally qualified health centers (FQHCs) of strategies requiring distinctly different resources for implementation have not been completed.

Our aim was to conduct a 4-arm pragmatic randomized trial to compare usual care, inreach consisting of one-on-one screening education, mailed outreach offering a fecal immunochemical test (FIT), and combination of outreach and inreach for promoting CRC screening completion. Our primary outcome was screening completion within 6 months; we examined screening completion by gender and primary language in stratified analyses. To focus on a population at highest risk for adverse CRC outcomes that has been traditionally understudied, the study was set at an FQHC serving low-income Latinos near the US- Mexico border. As such, the study serves to fill evidence gaps on optimal strategies to promote screening among populations with low rates of screening, as well as on how in-clinic inreach interventions directly compare with system-level outreach interventions.

METHODS

This randomized trial was conducted at an FQHC in the southern region of San Diego, California, from 2015 to 2018. Within this region, Latinos experience cancer disparities in terms of poor access to care, screening,19 time to

treatment, and survival.20 The FQHC has 14 primary care clinic sites and serves more than 97 000 registered patients annually, most of whom are low-income and Spanishspeaking Latinos. In 2015, the CRC screening rate at this FQHC for patients aged 51 through 74 years was 42.9%.21

Study Sample and Description

To identify the study sample, we queried the FQHC's EMRs to identify individuals aged 50 to 75 years, not up to date with CRC screening, who had self-identified as Latino, and had at least 1 primary care visit in the preceding year, served by a single primary care clinic. Medical charts were reviewed to confirm CRC screening status. Not up to date was defined based on absence offecal occult blood test (FOBT) or FIT in the past 12 months, flexible sigmoidoscopy in the past 5 years, or colonoscopy in the past 10 years.2 Those with a family history of CRC, personal history of inflammatory bowel disease, or personal history of CRC or colorectal polyps; who were under active treatment of cancer; or who were without a scheduled primary care visit within 2 months of eligibility assessment documented within the EMR were also excluded.

For individuals meeting inclusion criteria after EMR review, the study biostatistician generated a randomization schedule for group assignment by using online computer software. Randomization was stratified by gender, and men were oversampled with goal of achieving a 50:50 ratio of men to women. Researchers were blinded to study assignment until data collection was complete. To study the intervention effects in a "real-world" unbiased context, we obtained a waiver of consent. In lieu of a written informed consent, we provided a 1-page bilingual informational "research fact sheet" that outlined the goals of the study, potential loss of confidentiality associated with research, and an option to "opt out" of the research study.

For the primary outcome of screening completion within 6 months, we estimated the sample size by considering 5 statistical comparisons: usual care (UC) versus inreach, UC versus outreach, UC versus inreach plus outreach, inreach plus outreach versus outreach alone, and inreach plus outreach versus inreach alone, with a type I error a = 0.01 for each comparison (Bonferroni correction for 5 comparisons) and power of greater than or equal to 0.8.

In planning the study, we assumed the following rates of screening on follow-up among individuals not up to date at baseline: 10% for UC, 25% for inreach and outreach, and 45% for inreach plus outreach combined. The 10% rate for UC and 25% estimate for outreach were conservative assumptions based on our previous work.22 The 25% rate for inreach was a conservative estimate based on observations that inreach interventions have boosted screening completion (among patients referred for colonoscopy) by 41% to 78%. The 45% rate for both interventions combined was considered the minimal clinically significant difference that would justify implementing 2 different interventions for increasing screening. Based on these assumptions, we a priori planned to assign 162 individuals to each intervention group (n = 648). We chose 6 months as the followup time because of practical constraints regarding the time available for the research project; adjudicating at 6 months has been used in multiple other studies of CRC - . .• 23-26 screening interventions.

Interventions

We randomly assigned eligible participants to (1) UC opportunistic offers for screening (n = 167), (2) inreach with in-clinic education including an offer to complete screening with FIT or colonoscopy (n = 168), (3) outreach with invitation to complete an enclosed FIT (n = 171), or (4) combination ofoutreach and inreach (n = 167).

During the study period, UC at the study site did not include clinical reminders, incentives, or other triggers promoting CRC screening. UC recommendations were at the discretion of the providers and included offering FIT, sigmoidoscopy, and colonoscopy; colonoscopy and sigmoidoscopy required separate clinic visits for completion outside the FQHC. Inreach consisted of a 10-minute scripted session with a bilingual "flipchart" and an offer to complete screening at the time of a UC visit. Mailed outreach components included a culturally tailored postcard primer 2 weeks after randomization and 2 weeks before a subsequent mailed package, which contained a cover letter from a primary care doctor, low-literacy instructions, and a self-addressed stamped envelope with the enclosed FIT to do at home. Outreach and inreach were delivered by bilingual, bicultural trained patient navigators and included telephone reminders for FIT completion. Intervention materials were developed based on the chronic care model relevant for cancer prevention in primary care settings (e.g., use of care teams, decision support, proactive

care coordination, promotion of community resources, and clinical information services)27 and were developed and pretested through formative work before implementation in this trial, as previously reported.28

Measures

Following UC protocols, all normal FIT results were communicated to patients via mail, and shared with the primary care provider; abnormal FIT results were communicated to the patient one on one in a primary care provider visit. After the abnormal result was shared with the patient, a referral for colonoscopy was provided. The study team followed up with the participant to ensure that the colonoscopy was completed.

The primary outcome was screening completion within 6 months of randomization, defined as completion of a FIT, colonoscopy, or sigmoidoscopy, ascertained through manual review of EMRs. In secondary analyses, we examined completion stratified by gender and by preferred primary language. We conducted stratification by gender because previous work has suggested that Latino men have lower screening rates than women,29 and impact of interventions for promoting screening has been understudied among Latino men.30 Stratification by primary language was conducted because we postulated that primary language could serve as a proxy for acculturation and other factors that might have an impact on responsiveness to the interventions under 31-33 study.

Additional outcomes of interest included intervention group-specific number with abnormal FIT and proportion with abnormal FIT who had colonoscopy. Assessment of receipt of allocated intervention was based on absence of returned mail for outreach, receipt of in-clinic education for inreach, and completion of a clinic visit for UC, assessed through intervention tracking notes and EMR review for intervention groups and UC, respectively.

Analysis

We used descriptive statistics to assess differences in baseline characteristics across groups. We estimated CRC screening rates for each intervention, and 95% confidence intervals (CIs) based on normal approximation or binomial exact test, as appropriate, were provided. For our primary intentionto-screen analysis, we used the Fisher exact test for an overall comparison of the CRC screening rates across groups as well as 5 pairwise comparisons of interest listed previously, using a P level of less than .05 for overall test and a P level of .01 for each pairwise comparison with delineate statistical significance. In the secondary analyses, we conducted an overall comparison of CRC screening rate across groups stratified by gender and language. We computed the number needed to achieve 1 additional screening completion by taking the inverse of the absolute difference in screening completion percentage between each active intervention group and UC. Formal statistical comparisons of number with abnormal FIT and diagnosis of adenoma and CRC were not planned or performed because of the expected and observed small number of these outcomes.

RESULTS

The study flow is depicted in Figure 1. Among 3183 individuals assessed for study eligibility, 2510 were excluded resulting in 673 participants who were randomized to 1 of the 4 intervention groups. Reasons for exclusion included being up to date with screening (colonoscopy in past 10 years n = 1749; sigmoidoscopy in past 5 years n = 5; FIT or FOBT in past year n = 201), absence of upcoming clinic visit within 2 months of eligibility (n = 553), and active treatment of cancer (n = 2). Two individuals opted out of study data collection after randomization, making the final intention-to-screen analytic sample 671 (UC n = 167; inreach n = 167; outreach n = 171; combination n = 166). The mean age was 59.9 years, 48.9% were male, 86.3% were primarily Spanishspeaking, 66.9% were insured by Medicaid, and 7.6% were uninsured. We observed no statistically significant differences in baseline characteristics across groups (Table 1).

Primary Results

On intention-to-screen analysis, CRC screening completion was 27.5% for UC (95% CI = 0.21, 0.34), 52.7% for inreach (95% CI = 0.45, 0.60), 77.2% for outreach (95% CI = 0.71, 0.83), and 78.9% for combination (95% CI = 0.73,0.85; P< .001 for all 5 between-group pairwise comparisons except P = .793 for outreach vs combination; Figure 2). The number needed to achieve 1 additional screen compared with UC was 1.9 for inreach, 1.3 for outreach, and 1.3 for combination; number needed to screen was 4 for outreach compared with inreach.

Screening by Gender and Language

Among men, CRC screening completion was 25.9% for UC (95% CI = 0.16, 0.35), 53.7% for inreach (95% CI = 0.43, 0.64), 67.1% for outreach (95% CI = 0.57, 0.77), and 72.5% for combination (95% CI = 0.63, 0.82; P< .001 for overall comparison). Among women, CRC screening completion was 29.1% for UC (95% CI = 0.19, 0.39), 51.8% for inreach (95% CI = 0.41, 0.62), 87.2% for outreach (95% CI = 0.80,0.94), and 84.9% for combination (95% CI = 0.77, 0.92; P< .001 for overall comparisons; Figure 3).

Among those identifying English as their primary language, CRC screening completion was 27.8% for UC (95% CI = 0.10, 0.53), 38.5% for inreach (95% CI = 0.20, 0.59), 69.6% for outreach (95% CI = 0.47, 0.87), and 65.2% for combination (95% CI = 0.43, 0.84; P = .014 for overall comparisons). Among those identifying Spanish as their primary language, CRC screening completion was 27.5% for UC (95% CI = 0.20, 0.35), 56.1% for inreach (95% CI = 0.48, 0.64), 78.4% for outreach (95% CI = 0.72, 0.85), and 81.1% for combination (95% CI = 0.75, 0.88; P< .001 for overall comparisons; Figure 3).

Screening Follow-Up

Among 671 individuals who were randomized, 397 completed a screening test: 312 with FIT, 1 with sigmoidoscopy, and 84 with colonoscopy. Distribution of test type by each group is depicted in Appendix A (available as a supplement to the online version of this article at http://www.ajph.org). For UC, 13.2% completed FIT, 13.8% completed colonoscopy, and 0.6% completed sigmoidoscopy. For inreach, 34.7% completed FIT, 18.0% completed colonoscopy, and 0% completed sigmoidoscopy. For outreach, 66.7% completed FIT, 10.5% completed colonoscopy, and 0% completed sigmoidoscopy, and for combination of outreach and inreach, 71.1% completed FIT, 7.8% completed colonoscopy, and 0% completed sigmoidoscopy. Of the 312 patients who returned a FIT test, 21 patients had an abnormal FIT (5 from UC, 0 from inreach, 6 from outreach, and 10 from combination), and 14 (66.7%) completed a colonoscopy (4 from UC, 2 from outreach, and 8 from combination). Reasons for colonoscopy noncompletion were medical comorbidities precluding colonoscopy for 2 individuals (1 UC, 1 combination), and unknown for 5 individuals (0 UC, 4 outreach, 1 combination).

DISCUSSION

In a 4-arm pragmatic randomized trial for increasing CRC screening in a FQHC clinic system serving low-income Latinos, we found inreach with one-on-one education nearly doubled (53%), and outreach offering mailed FIT alone (77%) or in combination with inreach (79%) nearly tripled, screening compared with UC (28%). Mailed outreach was superior to inreach with one-on-one education for promoting screening completion. Results were qualitatively similar among men and women, but screening participation across each intervention group was higher among individuals who preferred Spanish versus English as their primary language.

Superiority of mailed outreach and of inreach compared with UC offers for CRC screening has been consistently demonstrated through randomized controlled trials.8,16 Randomized controlled trials of mailed outreach and patient education have often included additional components such as reminders16 to complete screening, components that were included in both of our outreach and inreach strategies, confirming that our strategies were generally similar to those used in previous work. Both mailed outreach and patient education have been shown to specifically increase screening among underserved populations, including Latinos. Thus, our results showing superiority of mailed outreach compared with UC and superiority of inreach including patient education compared with UC among Latinos confirm previous findings and extend current knowledge by demonstrating that mailed outreach (including a mailed primer, invitation to complete screening, and a live telephone reminder) is superior to another established strategy, one-on-one education (with a live telephone reminder).

Our results fill a major gap in current literature because we conducted the first headto-head trial comparing inreach and outreach -2 logistically very different screening promotion strategies-and found that mailed outreach was substantially superior to inreach. Furthermore, we found that the combination of both, while superior to UC, was not superior to mailed outreach alone for screening completion. For leaders in cancer control, public health, and health care organizations such as FQHCs, these results suggest that a mailed outreach strategy, because ofits ability to reach patients outside ofUC visits, may be a first-line choice for screening promotion over implementation of one-on-one education as a strategy, particularly in resource-strapped settings. The choice between implementing mailed

outreach versus one-on-one education has significant implications, as the resources required to implement mailed outreach are distinct from resources required to deliver one-on-one education.

The results also emphasize the need for future additional studies comparing proven CRC screening strategies head to head, rather than only against UC, given that there are now multiple strategies that have been confirmed to work in multiple trials. Primary care CRC screening strategies previously shown superior to UC that could be considered for head-to-head comparison include offering FIT at the time of annual influenza vaccination,14 patient navigation,9 and provider reminders.17 Choice of whether to compare these strategies individually or to include easier-to-implement strategies (such as provider reminders through EMRs) as a baseline strategy for both comparison groups must be based on assessments of costs and feasibility.

Our results also highlight several additional opportunities for promoting screening. Latino men have among the lowest rates of screening compared with other groups nationally (50% vs 63%)6 and have generally been understudied. We purposely oversampled Latino men and found that mailed outreach and inreach with education can substantially increase screening completion for this group, suggesting that either intervention should be considered for implementation in settings with substantial male Latino populations. We also found our interventions were more effective among individuals identifying Spanish as their primary language. Some research has shown that Spanish-speaking Latinos are more likely to receive cancer screenings than Englishspeaking Latinos,32 while other studies have shown that English-speaking Latinos are more likely to screen.31,33 Future research is needed to understand the role that language and acculturation play in intervention effectiveness in FQHC settings.

Limitations

The study setting was a clinic in the southernmost region of California, adjacent to the Mexico border, and is 60% Latino (as compared with 34% for San Diego County).41 Cultural beliefs and practices of this population may limit generalizability of these study results to some other health settings.

We did not study implementation of interventions across multiple clinics. Coronado and colleagues conducted a large cluster randomized trial comparing intent to implement mailed outreach versus UC across 26 FQHCs in Oregon and California.39,42 While their results showed that intervention clinics had higher rates of screening completion compared with UC clinics (14% vs 10%), the absolute difference was much smaller than the average 28% absolute difference observed by a meta-analysis of multiple mailed outreach randomized controlled trials.36 Coronado's study underscores that success of mailed outreach may differ when implemented widely and may depend heavily on the approach to implementation taken. Implementation challenges may also apply to patient education and were not a focus of this work.

We assessed a package of interventions for mailed outreach (mailed primer, invitation with included FIT kit, and live telephone reminders) and inreach (one-on-one education using a flip chart, FIT distribution or referral to colonoscopy, and live telephone reminders). As such, our study was not designed to address questions such as whether mailed FIT could have been equally effective with use of text messages or automated phone primers or reminders, or in absence of such primers or reminders. Outreach was shown to be superior to inreach, but many individuals assigned inreach alone or in combination did not receive in-clinic education. Indeed, in per-protocol analyses, screening completion was 88.4% (76 of 86) for the patients assigned inreach who completed a clinic visit and the allocated education and 78.9% (131 of 166) for patients assigned combination who both received mailed outreach and completed a clinic visit and in-clinic education.

Our intent-to-screen analysis excluded 2 individuals who opted out of the study, including further interventions and data collection regarding screening completion. In a posthoc analysis, inclusion of these individuals in the intent-to-screen analysis, assuming both as non-screening completers, resulted in qualitatively similar results for screening completion: 27.5% for UC, 52.4% for inreach, 77.2% for outreach, 78.4% for combination ($P < .001$ for all 5 pairwise comparisons except for combination vs outreach). Costeffectiveness analysis was not conducted, though previous work has suggested that mailed outreach can be highly cost-effective.43-45 Imbalance in randomization across providers could have led to differences in screening completion, as UC was a component of all intervention arms. Provider characteristics were not collected to allow for assessment of such imbalance, though randomization

procedures should have prevented imbalance in provider characteristics and other unmeasured potential confounders.

Strengths of this study included its focus on Latinos (including men) who have been traditionally understudied, head-to-head comparison of 2 proven strategies for screening completion, and use ofa waiver of written informed consent to maximize participation by the target population selected for interventions.

Public Health Implications

In the first head-to-head comparison of previously proven strategies for CRC screening, we found inreach with one-on-one education nearly doubled, and outreach offering mailed FIT alone or in combination with inreach nearly tripled, screening compared with UC. Mailed outreach was superior to inreach for promoting screening completion, making it potentially ripe for widespread implementation. Studies ofimplementation strategies to optimize the impact of mailed outreach in UC practice, as well as of head-to-head comparisons of other strategies for promoting CRC screening, are needed to help further optimize uptake and impact of CRC screening. Â1P4

CONTRIBUTORS

S.F. Castañeda, S. Gupta, and G.A. Talavera conceptualized and designed the study. G.A. Talavera, F. Muñoz, A.M. Bearse, M.S. Lopez, M. Rojas, S. Mercado, andJ. Camacho acquired the data. S. F. Castañeda, S. Gupta, B. Bharti, and L. Liu analyzed and interpreted the data. S. F. Castañeda and S. Gupta drafted the article and obtained funding. S.F. Castañeda, S. Gupta, G. A. Talavera, F. Muñoz, A. M. Bearse, M. S. Lopez, and L. Liu critically revised the article for important intellectual content. M. S. Lopez, M. Rojas, S. Mercado, and J. Camacho provided administrative, technical, or material support. F. Muñoz, A.M. Bearse, S. O'Connell, andJ. Camacho supervised the study.

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Note. The contents are solely the responsibility of the authors and do not necessarily represent the official views of the National Institutes of Health.

CONFLICTS OF INTEREST

The authors declare that there is no conflict of interest.

HUMAN PARTICIPANT PROTECTION

The study was approved by the institutional review boards at San Diego State University; University of California, San Diego; and San Ysidro Health.

Sidebar

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References

REFERENCES

1. Siegel RL, Miller KD, Jemal A. Cancer statistics, 2019. CA Cancer JClin. 2019;69(1):7-34.

2. US Preventive Services Task Force, BibbinsDomingo K, Grossman DC, et al. Screening for colorectal cancer: US Preventive Services Task Force recommendation statement. JAMA. 2016;315(23): 2564-2575.
3. Knudsen AB, Zauber AG, Rutter CM, et al. Estimation of benefits, burden, and harms of colorectal cancer screening strategies: modeling study for the US Preventive Services Task Force. JAMA. 2016;315(23): 2595-2609.
4. Lin JS, Piper MA, Perdue LA, et al. Screening for colorectal cancer: updated evidence report and systematic review for the US Preventive Services Task Force. JAMA. 2016;315(23):2576-2594.
5. White A, Thompson TD, White MC, et al. Cancer screening test use-United States, 2015. MMWR Morb Mortal Wkly Rep. 2017;66(8):201-206.
6. American Cancer Society. Colorectal cancer facts &figures, 2017-2019. Atlanta, GA: American Cancer Society; 2017.
7. Vespa J, Armstrong DM, Medina L. Demographic turning points for the United States: population projections for 2020 to 2060. Washington, DC: US Census Bureau; 2018.
8. Sabatino SA, Lawrence B, Elder R, et al. Effectiveness of interventions to increase screening for breast, cervical, and colorectal cancers: nine updated systematic reviews for the guide to community preventive services. AmJPrev Med. 2012;43(1):97-118.
9. Jandorf L, Gutierrez Y, Lopez J, Christie J, Itzkowitz SH. Use of a patient navigator to increase colorectal cancer screening in an urban neighborhood health clinic. JUrban Health. 2005;82(2):216-224.
10. Christie J, Itzkowitz S, Lihau-Nkanza I, Castillo A, Redd W, Jandorf L. A randomized controlled trial using patient navigation to increase colonoscopy screening among low-income minorities. J Natl Med Assoc. 2008; 100(3):278-284.
11. Potter MB, Phengrasamy L, Hudes ES, McPhee SJ, Walsh JM. Offering annual fecal occult blood tests at annual flu shot clinics increases colorectal cancer screening rates. Ann Fam Med. 2009;7(1):17-23.
12. Walsh JM, Gildengorin G, Green LW, Jenkins J, Potter MB. The FLU-FOBT Program in community clinics: durable benefits of a randomized controlled trial. Health Educ Res. 2012;27(5):886-894.
13. Potter MB, Somkin CP, Ackerson LM, et al. The FLU-FIT program: an effective colorectal cancer screening program for high volume flu shot clinics. Am J Manag Care. 2011;17(8):577-583.
14. Potter MB, Walsh JM, Yu TM, Gildengorin G, Green LW, McPhee SJ. The effectiveness of the FLU-FOBT program in primary care a randomized trial. Am J Prev Med. 2011;41(1):9-16.
15. Aragones A, Schwartz MD, Shah NR, Gany FM. A randomized controlled trial ofa multilevel intervention to increase colorectal cancer screening among Latino immigrants in a primary care facility. J Gen Intern Med. 2010; 25(6):564-567.
16. Dougherty MK, Brenner AT, Crockett SD, et al. Evaluation of interventions intended to increase colorectal cancer screening rates in the United States: a systematic review and meta-analysis. JAMA Intern Med. 2018;178(12):1645-1658.
17. Issaka RB, Avila P, WhitakerE, Bent S, Somsouk M. Population health interventions to improve colorectal cancer screening by fecal immunochemical tests: a systematic review. Prev Med. 2019;118:113-121.
18. Green BB. Colorectal cancer control: where have we been and where should we go next? JAMA Intern Med. 2018;178(12):1658-1660.
19. Community profile report. San Diego, CA: Susan G. Komen for the Cure San Diego Affiliate; 2011.
20. California Cancer Registry. Age-adjusted cancer mortality rates in California, all sites (2012-2016) by county 2019. Available at: https://www.cancer-rates. info/ca. Accessed January 17, 2020.
21. 2015 Health Center Profile: Centro de Salud de la Comunidad San Ysidro Inc, San Ysidro, California. Rockville, MD: Health Resources and Service Administration; 2016.
22. Gupta S, Halm EA, Rockey DC, et al. Comparative effectiveness of fecal immunochemical test outreach, colonoscopy outreach, and usual care for boosting colorectal cancer screening among the underserved: a randomizedclinicaltrial.JAMAInternMed.2013;173(18): 1725-1732.
23. Green BB, Anderson ML, Cook AJ, et al. Financial incentives to increase colorectal cancer screening uptake and

decrease disparities: a randomized clinical trial. JAMA Netw Open. 2019;2(7):e196570.
24. Mehta SJ, Induru V, Santos D, et al. Effect of sequential or active choice for colorectal cancer screening outreach: a randomized clinical trial. JAMA Netw Open. 2019;2(8):e1910305.
25. Mehta SJ, Pepe RS, Gabler NB, et al. Effect of financial incentives on patient use ofmailed colorectal cancer screening tests: a randomized clinical trial. JAMA Netw Open. 2019;2(3):e191156.
26. Mosen DM, Feldstein AC, Perrin N, et al. Automated telephone calls improved completion of fecal occult blood testing. Med Care. 2010;48(7):604-610.
27. Bodenheimer T, Wagner EH, Grumbach K. Improving primary care for patients with chronic illness. JAMA. 2002;288(14):1775-1779.
28. Castañeda SF, Bharti B, Espinoza-Giacinto RA, et al. Evaluating two evidence-based intervention strategies to promote CRC screening among Latino adults in a primary care setting. J Racial Ethn Health Disparities. 2018; 5(3):530-535.
29. Cancer facts &figures for Hispanics/Latinos 20152017. Atlanta, GA: American Cancer Society; 2015.
30. Mojica CM, Parra-Medina D, Vernon S. Interventions promoting colorectal cancer screening among Latino men: a systematic review. Prev Chronic Dis. 2018;15:E31.
31. Castañeda SF, Gallo LC, Nodora J, et al. Colorectal cancer screening among Hispanics/Latinos in the HCHS/ SOL sociocultural ancillary study. PrevMed Rep. 2019;15: 100947.
32. Castañeda SF, Malcarne VL, Foster-Fishman PG, et al. Health care access and breast cancer screening among Latinas along the California-Mexican border. J Immigr Minor Health. 2014;16(4):670-681.
33. Castañeda SF, Rosenbaum RP, Gonzalez P, Holscher JT. Breast and cervical cancer screening among rural Midwestern Latina migrant and seasonal farmworkers. J Prim Care Community Health. 2012;3(2):104-110.
34. Singal AG, Gupta S, Skinner CS, et al. Effect of colonoscopy outreach vs fecal immunochemical test outreach on colorectal cancer screening completion: a randomized clinical trial. JAMA. 2017;318(9):806815.
35. Jean-Jacques M, Kaleba EO, Gatta JL, Gracia G, Ryan ER, Choucair BN. Program to improve colorectal cancer screening in a low-income, racially diverse population: a randomized controlled trial. Ann Fam Med. 2012;10(5): 412-417.
36. Jager M, Demb J, Asghar A, et al. Mailed outreach is superior to usual care alone for colorectal cancer screening in the USA: a systematic review and meta-analysis. Dig Dis Sci. 2019;64(9):2489-2496.
37. Goldman SN, Liss DT, Brown T, et al. Comparative effectiveness ofmultifaceted outreach to initiate colorectal cancer screening in community health centers: a randomized controlled trial. J Gen Intern Med. 2015;30(8): 1178-1184.
38. Thompson JH, Davis MM, Leo MC, et al. Participatory Research to Advance Colon Cancer Prevention (PROMPT): study protocol for a pragmatic trial. Contemp Clin Trials. 2018;67:11-15.
39. Coronado GD, Golovaty I, Longton G, Levy L, Jimenez R. Effectiveness ofa clinic-based colorectal cancer screening promotion program for underserved Hispanics. Cancer. 2011;117(8):1745-1754.
40. Goldberg D, Schiff GD, McNutt R, FurumotoDawson A, Hammerman M, Hoffman A. Mailings timed to patients' appointments: a controlled trial of fecal occult blood test cards. Am J Prev Med. 2004;26(5): 431 -435.
41. QuickFacts: National City California; Chula Vista, California; San Diego County, California; California. Washington, DC: US Census Bureau; 2019.
42. Tuzzio L, Larson EB, Chambers DA, et al. Pragmatic clinical trials offer unique opportunities for disseminating, implementing, and sustaining evidence-based practices into clinical care: proceedings ofa workshop. Healthc (Amst). 2018;7(1):51-57.
43. Kemper KE, Glaze BL, Eastman CL, et al. Effectiveness and cost of multilayered colorectal cancer screening promotion interventions at federally qualified health centers in Washington State. Cancer. 2018;124(21): 4121-4129.
44. Somsouk M, Rachocki C, Mannalithara A, et al. Effectiveness and cost of organized outreach for colorectal cancer screening: a randomized controlled trial. J Natl Cancer Inst. 2019; epub ahead of print June 12, 2019.
45. Guy GP Jr, Richardson LC, Pignone MP, Plescia M. Costs and benefits ofan organized fecal immunochemical

test-based colorectal cancer screening program in the United States. Cancer. 2014;120(15):2308-2315.

DETAILS

Subject:	Health care access; Intervention; Cancer; Colorectal cancer; Patients; Hispanic Americans; Colonoscopy; Confidence intervals; Education; Low income groups; Clinical trials; Primary care; Colorectal carcinoma; Randomization; Latin American cultural groups; Medical screening; Bilingualism; Health care facilities; Cancer screening; Public health
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Bibliography

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Farley, S. M., DrP.H., Sisti, J., ScD., Jasek, J., M.P.A., & Schroth, K. R. J., J.D. (2020). Flavored tobacco sales prohibition (2009) and noncigarette tobacco products in retail stores (2017), new york city. American Journal of Public Health, 110(5), 725-730. doi:https://doi.org/10.2105/AJPH.2019.305561

Objectives. To assess explicit- (products clearly labeled flavored) and emergent concept- (products implying flavoring but not clearly labeled) flavored tobacco product availability following New York City's flavor restriction. Methods. We examined explicit- and concept-flavored tobacco product availability, with 2017 New York City Retailer Advertising of Tobacco Survey data (n = 1557 retailers). We assessed associations between block group-level demographic characteristics and product availability by using logistic regression. Results. Most retailers sold explicit-flavored (70.9%) or concept-flavored (69.3%) products. The proportion of non-Hispanic Black neighborhood residents predicted explicit- and concept-flavored product availability, as did having a high school within a retailer's block group for concept-flavored products. Conclusions. Explicit- and concept-flavored other tobacco products persisted throughout New York City, despite 2009 legislation restricting sales. Public Health Implications. Making local sales restrictions or federal production bans inclusive of all explicit and concept flavors would reduce retailer and industry evasion opportunities and protect the health of youths and others.

Seminario, M. M., M.S. (2020). The occupational safety and health act at 50-A labor perspective. American Journal of Public Health, 110(5), 642-643. doi:https://doi.org/10.2105/AJPH.2019.305541

In 1970, Congress passed the Occupational Safety and Health Act (OSH Act), with the goal of providing workers a safe and healthful place to work. The law did not just happen-it took decades of struggles by unions and workers and only came following workplace and environmental tragedies, part of a wave of federal legislation to protect workers, the public, and the environment from harm. And like many of the laws enacted at the time, it was based upon a foundation of setting and enforcing protective standards, with the federal government-in this case the Department of Labor-given the responsibility to carry out the law in collaboration with the states. In addition, the OSH Act gave workers and their representatives important new rights, including filing complaints, requesting onsite inspections, accessing information, and seeking new protective standards.The law has been described as radical and revolutionary, fundamentally changing the balance of power between the government and employers and between workers and employers on a central workplace issue. While the law established a framework and structure for the government to exercise authority and power to advance new protections and oversee compliance, it did not establish a framework and structure for safety and health in the workplace. There were no requirements for the establishment of workplace safety and health programs, safety and health committees, worker safety and health representatives, or basic core safety and health training for workers. That was left to collective bargaining between unions and employers and future regulatory efforts.

Greenfield, D., J.D. (2020). Safety and health at the heart of the past, present, and future of work: A perspective from the international labour organization. American Journal of Public Health, 110(5), 646-647. doi:https://doi.org/10.2105/AJPH.2020.305633

Every year, 2.78 million workers die from occupational accidents and work-related diseases, and an additional 374 million workers suffer from nonfatal occupational accidents.1 Lost workdays represent almost 4% of the world's gross domestic product, rising to 6% in some countries.2For centuries, the workplace has posed risks and hazards for workers. In emphasizing the essential role of social justice in achieving lasting peace, the International Labour Organization (ILO) constitution calls on member states to improve working conditions, including "the protection of the worker against sickness, disease and injury arising out of his employment."3Although workers continued to experience risks to their safety and health, heightened global knowledge had a significant impact on how organizations such as the ILO tackled these challenges globally.4 Scientific and professional understanding ofthe nature of work and its relationship to the safety, health, and well-being of workers opened a venue for progress in industrialized nations. Occupational hygiene, along with occupational medicine, toxicology, and epidemiology, continued to grow rapidly, as did disciplines associated with safety design and engineering.

Learner, E. R., PhD., Kreisel, K., PhD., Kirkcaldy, Robert D,M.D., M.P.H., Schlanger, Karen,PhD., M.P.H., & Torrone, E. A., PhD. (2020). Gonorrhea prevalence among young women and men entering the national job training program, 2000–2017. American Journal of Public Health, 110(5), 710-717. doi:https://doi.org/10.2105/AJPH.2019.305559

Objectives. To examine long-term gonorrhea prevalence trends from a sentinel surveillance population of young people at elevated risk for gonorrhea. Methods. We analyzed annual cross-sectional urogenital gonorrhea screening data from 191 991 women (2000-2017) and 224 348 men (2003-2017) 16 to 24 years of age entering the National Job Training Program, a US vocational training program. We estimated prevalence among women using an expectation-maximization algorithm incorporated into a logistic regression to account for increases in screening test sensitivity; log-binomial regression was used to estimate prevalence among men. Results. The adjusted gonorrhea prevalence among women followed a U-shaped curve, falling from 2.9% to 1.6% from 2000 through 2011 before rising to 2.7% in 2017. The prevalence among men declined from 1.4% to 0.8% from 2003 through 2017. In the case of both women and men, the prevalence was highest across all study years among those who were Black or American Indian/Alaska Native and those who resided in the South or Midwest. Conclusions. Trends among National Job Training Program enrollees suggest that gonorrhea prevalence is rising among young women while remaining low and steady among young men. (Am J Public Health. 2020;110:710-717. doi:10.2105/AJPH.2019. 305559)

Boden, L. I. (2020). The occupational safety and health administration at 50-the failure to improve workers' compensation. American Journal of Public Health, 110(5), 638-639. doi:https://doi.org/10.2105/AJPH.2019.305549

In the 1950s and 1960s, it was widely recognized that workers’ compensation was failing in its mission to provide economic security for injured workers. After decades of concern, Congress called for a formal review of these state-based programs in the Occupational Safety and Health Act of 1970. Congress gave this responsibility to the National Commission on State Workmen’s Compensation Laws (“National Commission”). In 1970, 19 states did not require any employers to provide workers’ compensation coverage. Other states mandated coverage for only a fraction of workers. Only about half the states provided benefits to cover two thirds of lost wages, and in most states the maximum weekly benefit was less than the national poverty level for a family of four. In addition, programs frequently did not cover all injuries and provided even less comprehensive coverage for occupational diseases.

Weil, D. (2020). The future of occupational safety and health protection in a fissured economy. American Journal of Public Health, 110(5), 640-641. doi:https://doi.org/10.2W5/AJPH.2019.305550

There have been innumerable recent conferences, workshops, and convenings on the "future of work." These seances typically focus on issues such as robotics, artificial intelligence, and platform business models like Uber and Lyft. But these topics regarding the future of work affect a relatively small part of the workforce, and speculations on the impacts oftechnology usually prove wildly off the mark.A focus on changes that have an impact on the present workplace and that will continue to do so is far more useful. Millions of workers in the United States have jobs that do not pay enough, provide few-if any-benefits, and lack opportunities for economic advancement. Germane to this Special Section, those jobs also expose workers to a wide variety of significant health and safety risks-often falling outside the boundaries of Occupational Safety and Health (OSH) Act protections.These conditions arise in part because businesses have found myriad ways to maintain control over (and capture economic benefit from) services and products while shedding the messy role of employing workers to others. This change in both the present and future structure of work is what I have termed the "fissured workplace," a phrase that is meant to encompass outsourcing, contracting, and subcontracting; franchising in its many forms; and, most recently, platform business models.1 The fissured workplace model has allowed businesses to shift risks and responsibilities onto workers and incentivize the misclassification of employees as independent contractors.

Jester, Barbara J,R.N., M.S.N., Uyeki, Timothy M, MD,M.P.H., M.P.P., & Jernigan, Daniel B,M.D., M.P.H. (2020). Fifty years of influenza A(H3N2) following the pandemic of 1968. American Journal of Public Health, 110(5), 669-676. doi:https://doi.org/10.2105/AJPH.2019.305557

In 2018, the world commemorated the centennial of the 1918 influenza A(H1N1) pandemic, the deadliest pandemic in recorded history; however, little mention was made of the 50th anniversary of the 1968 A(H3N2) pandemic. Although pandemic morbidity and mortality were much lower in 1968 than in 1918, influenza A(H3N2) virus infections have become the leading cause of seasonal influenza illness and death over the last 50 years, with more than twice the number of hospitalizations from A(H3N2) as from A(H1N1) during the past six seasons. We review the emergence, progression, clinical course, etiology, epidemiology, and treatment of the 1968 pandemic and highlight the short- and long-term impact associated with A(H3N2) viruses. The 1968 H3N2 pandemic and its ongoing sequelae underscore the need for improved seasonal and pandemic influenza prevention, control, preparedness, and response efforts. (Am J Public Health. 2020;110:669-676. doi: 10.2105/ AJPH.2019.305557)

Rothstein, M. A., J.D. (2020). The occupational safety and health act at 50: Introduction to the special section. American Journal of Public Health, 110(5), 613-614. doi:https://doi.org/10.2105/AJPH.2020.305623

This special section of AJPH commemorates the 50th anniversary of the OSH Act by reviewing the past, assessing the present, and proposing the future direction of occupational safety and health regulation. It features an incomparable group of experts presenting their views on a range of important issues. The OSH Act is a public health law, an employment law, and an environmental law. It has unprecedented scope by setting minimum safety and health standards for substantially all private sector workplaces. The OSH Act prescribes notice and comment rulemaking for new standards, requires preinspection compliance by employers, authorizes the secretary of labor to assess civil monetary penalties and impose abatement orders for noncompliance, and establishes administrative adjudications of contested enforcement proceedings by an independent agency of commissioners and administrative law judges.

Kamoli, Talar, RN, MSN,P.H.N., C.I.C., Foo, Chelsea,M.P.H., C.I.C., Oyong, Kelsey,M.P.H., C.I.C., & Terashita, Dawn,M.D., M.P.H. (2020). Influenza vaccination coverage of health care personnel in los angeles county hospitals, 2016–2017. American Journal of Public Health, 110(5), 693-695. doi:https://doi.org/10.2105/AJPH.2019.305555

The objective of the Los Angeles County, California (LAC), health care personnel (HCP) influenza vaccination improvement intervention was to increase HCP influenza vaccination coverage during the 2016-2017 influenza season via targeted outreach to LAC acute care hospitals. We selected 13 facilities for intervention and received tailored recommendations from a menu of evidence-based practices. Following the season, each hospital in the intervention group experienced a significant increase in vaccination coverage, which increased the LAC countywide average for all hospitals by 5%, from 74% to 79%. (Am J Public Health. 2020;110:693-695. doi:10.2105/ AJPH.2019.305555)

Fiala, S. C., M.P.H. (2020). My year with AJPH: Insights from a student editor. American Journal of Public Health, 110(5), 606. doi:https://doi.org/10.2105/AJPH.2019.305553

Yi, Y., M.A., Edwards, F. R., PhD., & Wildeman, C., PhD. (2020). Cumulative prevalence of confirmed maltreatment and foster care placement for US children by Race/Ethnicity, 2011–2016. American Journal of Public Health, 110(5), 704-709. doi:https://doi.org/10.2105/AJPH.2019.305554s

Objectives. To estimate the cumulative prevalence of confirmed child maltreatment and foster care placement for US children and changes in prevalence between 2011 and 2016. Methods. We used synthetic cohort life tables and data from the Adoption and Foster Care Analysis and Reporting System and the National Child Abuse and Neglect Data System and population counts from the Centers for Disease Control and Prevention. Results. US children's cumulative prevalence of confirmed maltreatment remained stable between 2011 and 2016 at about 11.7% (95% confidence interval CI] = 11.6%, 11.7%) of the population and increased by roughly 11% for foster care placement from 4.8% (95% CI = 4.8%, 4.8%) to 5.3% (95% CI = 5.3%, 5.4%). American Indian/Alaska Native children experienced the largest change, an 18.0% increase in confirmed maltreatment risk from 13.4% (95% CI = 13.1%, 13.6%) to 15.8% (95% CI = 15.6%, 16.1%) and a 21% increase in foster care placement risk from 9.4% (95% CI = 9.2%, 9.6%) to 11.4% (95% CI = 11.2%, 11.6%). Conclusions. Confirmed child maltreatment and foster care placement continued to be experienced at high rates in the United States in 2012 through 2016, with especially high

risks for American Indian/Alaska Native children. Rates of foster care have increased, whereas rates of confirmed maltreatment have remained stable. (Am J Public Health. 2020;110:704-709. doi:10.2105/AJPH.2019.305554)

Hess, L. H., PhD., Winfree, K. B., PhD., Muehlenbein, C. E., M.P.H., Zhu, Yajun E,M.S., M.B.A., Oton, A. B., M.D., Princic, N., M.S., & Aggarwal, H., PhD. (2020). DEBUNKING MYTHS WHILE UNDERSTANDING LIMITATIONS. American Journal of Public Health, 110(5), 1. doi:https://doi.org/10.2105/AJPH.2020.305603

Ledesma, E., M.P.H., & Ford, Chandra L, PhD,M.P.H., M.L.I.S. (2020). Health implications of housing assignments for incarcerated transgender women. American Journal of Public Health, 110(5), 650-654. doi:https://doi.org/10.2105/AJPH.2020.305565

Transgender women (i.e., persons who were assigned male sex at birth but who live and identify as female) experience forms of discrimination that limit their access to stable housing and contribute to high rates of incarceration; once incarcerated, the approaches used to assign them housing within the jail or prison place them at risk for abuse, rape, and other outcomes. Yet, a paucity of studies explores the implications of carceral housing assignments for transgender women. Whether the approaches used to assign housing in jails and prisons violate the rights of incarcerated transgender persons has been argued before the US federal courts under Section 1983 of the US Constitution, which allows persons who were raped while incarcerated to claim a violation of their Eighth Amendment rights. Reforms and policy recommendations have been attempted; however, the results have been mixed and the public health implications have received limited attention.

Barna, M. (2020). US hospitals stepping up to end youth violence. American Journal of Public Health, 110(5), 608. doi:https://doi.org/10.2105/AJPH.2020.305617

Baker, Beth,M.D., M.P.H., Kesler, Denece,M.D., M.P.H., & Guidotti, Tee, MD,M.P.H., D.A.B.T. (2020). Occupational and environmental medicine: Public health and medicine in the workplace. American Journal of Public Health, 110(5), 636-637. doi:https://doi.org/10.2105/AJPH.2020.305625

Occupational medicine is unique in medicine because it focuses on the interface of the workplace and health. Occupational medicine physicians combine individual patient care with prevention and a population-based health approach and may be engaged in all aspects of workers' health and the workplace. They may spend more time addressing issues in healthy workers, workers' groups, employers, or companies because only 45% of their time is used to address injured or ill patient issues.1 Important occupational health issues that need to be addressed worldwide include working conditions; the built environment; and chemical, biological, physical, and psychosocial hazards.2 Today, the specialty encompasses workers' wellness, disease prevention, and environmental issues in addition to occupational injury and illness care.

Berk-Krauss, J., Stein, Jennifer A,M.D., PhD., Weber, Jeffrey,M.D., PhD., Polsky, David,M.D., PhD., & Geller, Alan C,R.N., M.P.H. (2020). New systematic therapies and trends in cutaneous melanoma deaths among US whites, 1986–2016. American Journal of Public Health, 110(5), 731-733. doi:https://doi.org/10.2105/AJPH.2020.305567

Objectives. To determine the effect of new therapies and trends toward reduced mortality rates of melanoma. Methods. We reviewed melanoma incidence and mortality among Whites (the group most affected by melanoma) in 9 US Surveillance, Epidemiology, and End Results registry areas that recorded data between 1986 and 2016. Results. From 1986 to 2013, overall mortality rates increased by 7.5%. Beginning in 2011, the US Food and Drug Administration approved 10 new treatments for metastatic melanoma. From 2013 to 2016, overall mortality decreased by 17.9% (annual percent change APC]= -6.2%; 95% confidence interval CI]= -8.7%, -3.7%) with sharp declines among men aged 50 years or older (APC = -8.3%; 95% CI= -12.2%, -4.1%) starting in 2014. This recent, multiyear decline is the largest and most sustained improvement in melanoma mortality ever observed and is unprecedented in cancer medicine. Conclusions. The introduction of new therapies for metastatic melanoma was associated with a significant reduction in population-level mortality. Future research should focus on developing even more effective treatments, identifying biomarkers to select patients most likely to benefit, and renewing emphasis on public health approaches to reduce the number of patients with advanced disease. (Am J Public

Health. 2020;110: 731-733. doi:10.2105/AJPH.2020.305567)

Kingsbury, D., Puac-Polanco, V., & Dávila, M. G. (2020). Global news. American Journal of Public Health, 110(5), 607. doi:https://doi.org/10.2105/AJPH.2020.305629

Krisberg, K. (2020). Census count implications for public health. American Journal of Public Health, 110(5), 608. Retrieved from https://www.proquest.com/scholarly-journals/census-count-implications-public-health/docview/2392008267/se-2?accountid=211160

Freeman, Amy L,PhD., M.P.H., Li, T., M.S., Kaplan, S. A., J.D., Ellen, I. G., PhD., Gourevitch, Marc,M.D., M.P.H., Young, A., L.C.S.W., & Doran, Kelly M,M.D., M.H.S. (2020). Community health worker intervention in subsidized housing: New york city, 2016–2017. American Journal of Public Health, 110(5), 689-692. doi:https://doi.org/10.2105/AJPH.2019.305544

From April 2016 to June 2017, the Health + Housing Project employed four community health workers who engaged residents of two subsidized housing buildings in New York City to address individuals' broadly defined health needs, including social and economic risk factors. Following the intervention, we observed significant improvements in residents' food security, ability to pay rent, and connection to primary care. No immediate change was seen in acute health care use or more narrowly defined health outcomes. (Am J Public Health. 2020; 110: 689-692. doi:10.2105/AJPH. 2019.305544)

Löwy, I., PhD, & Corrêa, Marilena Cordeiro Dias Villela, MD, PhD. (2020). The "abortion pill" misoprostol in brazil: Women's empowerment in a conservative and repressive political environment. American Journal of Public Health, 110(5), 677-684. doi:https://doi.org/10.2105/AJPH.2019.305562

In the aftermath of the introduction of severe restrictions on abortion in several US states, some activists have argued that providing widespread access to an abortive drug, misoprostol, will transform an induced abortion into a fully private act and therefore will empower women. In Brazil, where abortion is criminalized, the majority of women who wish to terminate an unwanted pregnancy already use the illegal, but easily accessible, misoprostol. We examine the history of misoprostol as an abortifacient in Brazil from the late 1980s until today and the professional debates on the teratogenicity of this drug. The effects of a given pharmaceutical compound, we argue, are always articulated, elicited, and informed within dense networks of sociocultural, economic, legal, and political settings. In a conservative and repressive environment, the use of misoprostol for selfinduced abortions, even when supported by formal or informal solidarity networks, is far from being a satisfactory solution to the curbing of women's reproductive rights.

Fleegler, Eric W,M.D., M.P.H., & Madeira, Jody Lynee, PhD,J.D., M.S. (2020). First, prevent harm: Eliminate firearm transfer liability as a lethal means reduction strategy. American Journal of Public Health, 110(5), 619-620. doi:https://doi.org/10.2105/AJPH.2020.305635

The US suicide rate is at its highest since World War II1; suicides are the second leading cause of death among persons aged 10 to 34 years and the 10th leading cause in the United States overall. By 2017, the number of suicide deaths had risen to 47 173 and, when combined with opioid overdoses, produced a three-year decline in US life expectancy for the first time in 50 years.2In the United States, firearms are used in less than 6% of suicide attempts but are the mechanism of death in more than 50% of completed suicides.3 State suicide rates vary more than threefold, with the majority of the difference accounted for by firearm suicides. Although the preponderance of suicide attempts involve intentional overdoses, firearms have a 55-fold higher lethality rate,4 making it imperative to understand mechanisms for preventing firearm suicide attempts.The commentary by Gibbons et al. (p. 685), in this issue of AJPH, speaks to the challenges of one key mechanism of firearm suicide reduction, namely the temporary surrender of firearms. Extreme risk protective order legislation has become the de jour mechanism, with 18 states enacting such laws as of February 2020. These laws remove firearms from owners via an involuntary mechanism and necessitate families' engagement with a complicated court system. The use of these laws has been highly variable. In a period of a year and a half, Florida had more than 2000 "red-flag" orders, whereas over a similar

period California had less than 200-but each state has roughly 2.5 million firearm-owning households.5,6

Greenberg, M., PhD. (2020). Being an environmental health officer. American Journal of Public Health, 110(5), 611-612. doi:https://doi.org/10.2105/AJPH.2020.305626

Being an Environmental Health Officer Environmental Public Health: The Practitioner's Guide Paul L. Knechtges, Gregory D. Kearney, and Beth A. Resnick, Eds. Washington, DC: APHA Press; 2018 740 pp; $90 ISBN: 978-0-87553-293-6 eISBN: 978-0-87553-294-3

Tajeu, G. S., DrP.H., Safford, M. M., M.D., Howard, G., DrP.H., Howard, V. J., PhD., Chen, L., PhD., Long, L., PhD., . . . Muntner, P., PhD. (2020). Black–White differences in cardiovascular disease mortality: A prospective US study, 2003–2017. American Journal of Public Health, 110(5), 696-703. doi:https://doi.org/10.2105/AJPH.2019.305543

Objectives. To determine factors that explain the higher Black:White cardiovascular disease (CVD) mortality rates among US adults. Methods. We analyzed data from the Reasons for Geographic and Racial Differences in Stroke study from 2003 to 2017 to estimate Black:White hazard ratios (HRs) for CVD mortality within subgroups younger than 65 years and aged 65 years or older. Results. Among 29 054 participants, 41.0% who were Black and 54.9% who were women, 1549 CVD deaths occurred. Among participants younger than 65 years, the demographic-adjusted Black:White CVD mortality HR was 2.23 (95% confidence interval CI] = 1.87, 2.65) and 1.21 (95% CI = 1.00,1.47) after full adjustment. Among participants aged 65 years or older, the demographic-adjusted Black:White CVD mortality HR was 1.58 (95% CI = 1.39, 1.79) and 1.12 (95% CI = 0.97, 1.29) after full adjustment. When we used mediation analysis, socioeconomic status explained 21.2% (95% CI = 13.6%, 31.4%) and 38.0% (95% CI = 20.9%, 61.7%) of the Black:White CVD mortality risk difference among participants younger than 65 years and aged 65 years or older, respectively. CVD risk factors explained 56.6% (95% CI = 42.0%, 77.2%) and 41.3% (95% CI = 22.9%, 65.3%) of the Black:White CVD mortality difference for participants younger than 65 years and aged 65 years or older, respectively. Conclusions. The higher Black:White CVD mortality risk is primarily explained by racial differences in socioeconomic status and CVD risk factors. (Am J Public Health. 2020;110: 696-703. doi:10.2105/AJPH.2019.305543)

Walter, D., PhD., Ophir, Y., PhD., & Jamieson, K. H., PhD. (2020). Russian twitter accounts and the partisan polarization of vaccine discourse, 2015–2017. American Journal of Public Health, 110(5), 718-724. doi:https://doi.org/10.2105/AJPH.2019.305564

Objectives. To understand how Twitter accounts operated by the Russian Internet Research Agency (IRA) discussed vaccines to increase the credibility of their manufactured personas. Methods. We analyzed 2.82 million tweets published by 2689 IRA accounts between 2015 and 2017. Combining unsupervised machine learning and network analysis to identify "thematic personas" (i.e., accounts that consistently share the same topics), we analyzed the ways in which each discussed vaccines. Results. We found differences in volume and valence of vaccine-related tweets among 9 thematic personas. Pro-Trump personas were more likely to express antivaccine sentiment. Anti-Trump personas expressed support for vaccination. Others offered a balanced valence, talked about vaccines neutrally, or did not tweet about vaccines. Conclusions. IRA-operated accounts discussed vaccines in manners consistent with fabricated US identities. Public Health Implications. IRA accounts discussed vaccines online in ways that evoked political identities. This could exacerbate recently emerging partisan gaps relating to vaccine misinformation, as differently valenced messages were targeted at different segments of the US public. These sophisticated targeting efforts, if repeated and increased in reach, could reduce vaccination rates and magnify health disparities.

Richmond-Bryant, J., Mikati, I., B.S., Benson, A. F., M.P.H., Luben, T. J., PhD., & Sacks, J. D., M.P.H. (2020). Disparities in distribution of particulate matter emissions from US coal-fired power plants by race and poverty status after accounting for reductions in operations between 2015 and 2017. American Journal of Public Health, 110(5), 655-661. doi:https://doi.org/10.2105/AJPH.2019.305558

Objectives. To investigate potential changes in burdens from coal-fired electricitygenerating units (EGUcfs) that emit fine particulate matter (PM2.5,defined as matter with a nominal mean aerodynamic diameter of< 2.5 mm) among racial/ethnic and economic groups after reduction of operations in 92 US EGUcfs. Methods. PM2.5 burdens calculated for EGUs listed in the 2008, 201 1, and 2014 National Emissions Inventory were recalculated for 2017 after omitting emissions from 92 EGUcfs. The combined influence of race/ethnicity and poverty on burden estimates was characterized. Results. Omission of 92 EGUcfs decreased PM2.5 burdens attributable to EGUs by 8.6% for the entire population and to varying degrees for every population subgroup. Although the burden decreased across all subgroups, the decline was not equitable. After omission of the 92 EGUcfs, burdens were highest for the below-poverty and non-White subgroups. Proportional disparities between White and non-White subgroups increased. In our combined analysis, the burden was highest for the non-White-high-poverty subgroup. Conclusions. Our results indicate that subgroups living in poverty experience the greatest absolute burdens from EGUcfs. Changes as a result of EGUcf closures suggest a shift in burden from White to non-White subgroups. Policymakers could use burden analyses to jointly promote equity and reduce emissions. (Am J Public Health. 2020;110: 655-661. doi:10.2105/AJPH.2019.305558)

Fairfax, Richard E,M.A., B.S. (2020). The occupational safety and health administration's impact on employers: What worked and where to go from here. American Journal of Public Health, 110(5), 644-645. doi:https://doi.org/10.2105/AJPH.2020.305624

When the OSH Act of 1970 was passed, Congress created the Occupational Safety and Health Administration (OSHA) to ensure safe and healthful working conditions for employees. OSHA did so by setting and enforcing standards and by providing training, outreach, and education.Early standard setting was aggressive and ambitious, with the incorporation of industry consensus standards and the promulgation of new standards. OSHA's standard setting and enforcement sparked increased membership in safety and health professional organizations, which in turn led to strong demand for obtaining safety or health certification. Additionally, this growth drove the development of a wide variety of safety and health products, in effect creating a new market. Vendors used OSHA standards and enforcement to motivate sales.

Rosner, D., PhD., & Markowitz, G., PhD. (2020). A short history of occupational safety and health in the united states. American Journal of Public Health, 110(5), 622-628. doi:https://doi.org/10.2105/AJPH.2020.305581

As this short history of occupational safety and health before and after establishment of the Occupational Safety and Health Administration (OSHA) clearly demonstrates, labor has always recognized perils in the workplace, and as a result, workers' safety and health have played an essential part of the battles for shorter hours, higher wages, and better working conditions. OSHA's history is an intimate part of a long struggle over the rights of working people to a safe and healthy workplace. In the early decades, strikes over working conditions multiplied. The New Deal profoundly increased the role of the federal government in the field of occupational safety and health. In the 1960s, unions helped mobilize hundreds of thousands of workers and their unions to push for federal legislation that ultimately resulted in the passage of the Mine Safety and Health Act of 1969 and the Occupational Safety and Health Act of 1970. From the 1970s onward, industry developed a variety of tactics to undercut OSHA. Industry argued over what constituted good science, shifted the debate from health to economic costs, and challenged all statements considered damaging. (Am J Public Health. 2020;1 10:622-628. doi:10.2105/AJPH.2020.305581)

Gao, Xiang,M.D., M.P.H., Deming, N. J., D.P.T., Moore, K., B.S., & Alam, T., P.T. (2020). CARDIORESPIRATORY FITNESS DECLINE IN AGING FIREFIGHTERS. American Journal of Public Health, 110(5) doi:https://doi.org/10.2105/AJPH.2020.305599

Levy, J. I. (2020). A breath of fresh air. American Journal of Public Health, 110(5), 609-610. doi:https://doi.org/10.2105/AJPH.2020.305604

A Breath of Fresh Air Choked: Life and Breath in the Age of Air Pollution, First Edition By Beth Gardiner Hardcover: 312 pages; $27.50 Chicago, IL: University of Chicago Press; First edition (April 19, 2019) ISBN-13: 978-0226495859

Williams, Augusta A,D.Sc, M.P.H., Allen, Joseph G,D.Sc, M.P.H., Catalano, P. J., D.Sc, Buonocore, J. J., D.Sc, & Spengler, J. D., PhD. (2020). The influence of heat on daily police, medical, and fire dispatches in boston, massachusetts: Relative risk and time-series analyses. American Journal of Public Health, 110(5), 662-668. doi:https://doi.org/10.2105/AJPH.2019.305563

Objectives. To examine the impact of extreme heat on emergency services in Boston, MA. Methods. We conducted relative risk and time series analyses of 911 dispatches of the Boston Police Department (BPD), Boston Emergency Medical Services (BEMS), and Boston Fire Department (BFD) from November 2010 toApril 2014 to assess the impactof extreme heat on emergency services. Results. During the warm season, there were 2% (95% confidence interval CI] = 0%, 5%) more BPD dispatches, 9% (95% CI = 7%, 12%) more BEMS dispatches, and 10% (95% CI = 5%, 15%) more BFD dispatches on days when the maximum temperature was 90°F or higher, which remained consistent when we considered multiple days of heat. A 10°F increase in daily maximum temperature, from 80° to 90°F, resulted in 1.016,1.017, and 1.002 times the expected number of dailyBPD, BEMS, and BFD dispatch calls, on average, after adjustment for other predictors. Conclusions. The burden of extreme heat on local emergency medical and police services may be agency-wide, and impacts on fire departments have not been previously documented. Public Health Implications. It is important to account for the societal burden of extreme heat impacts to most effectively inform climate change adaptation strategies and planning.

Broniatowski, D. A., PhD., Quinn, S. C., PhD., Dredze, M., PhD., & Jamison, A. M.,M.A.A.M.P.H. (2020). Vaccine communication as weaponized identity politics. American Journal of Public Health, 110(5), 617-618. doi:https://doi.org/10.2105/AJPH.2020.305616

The World Health Organization declared vaccine misinformation-and consequent declines in vaccination rates-as a top health threat of2019 (http:// bit.ly/37G2NWP). In 2018, there have been measles outbreaks in 98 countries worldwide (including 1717 cases in Russia from January to June 2018-a 13-fold increase from the previous year; http://bit.ly/2S1upit), resulting in more than 140 000 deaths (http://bit.ly/2S0Pbin). Deaths from vaccine-preventable illnesses may be attributed primarily to the spreading phenomenon of vaccine refusal.

Howard, J., M.D. (2020). NIOSH: A short history. American Journal of Public Health, 110(5), 629-630. doi:https://doi.org/10.2105/AJPH.2019.305478

The National Institute for Occupational Safety and Health (NIOSH) was established in Section 22 of the Occupational Safety and Health (OSH) Act of 1970 and placed in the Department of Health and Human Services (HHS).1 Introduced by Senator Jacob Javits as an amendment to the OSH Act, the idea was that a research program, separate and independent from the regulatory agency, would be able to generate objective scientific research findings in the field of occupational safety and health.2 The Act gave NIOSH authority to conduct research in a broad range of occupational safety and health topics.3 Among the research responsibilities are conducting studies of psychological factors and industrywide exposures, developing exposure criteria for toxic materials and harmful physical agents, and responding to a request from an employer or employee to perform a health hazard evaluation. The Act also provided NIOSH with "right-of-entry" authority to make inspections and question employers and employees.4 Finally, the Act makes clear that NIOSH is to produce research that can enable the Occupational Safety and Health Administration (OSHA) to mulate and health standards. NIOSH was also directed to conduct education programs, directly or through grants, to provide an adequate supply of safety and health specialists to carry out the purposes of the OSH Act and on the proper use of safety and health equipment.5

Howard, J. T., PhD. (2020). US Black–White mortality disparities: Still unequal, still unjust. American Journal of Public Health, 110(5), 615-616. doi:https://doi.org/10.2105/AJPH.2020.305634

Cardiovascular disease (CVD) has been the number one cause of death in the United States for at least the past four decades, killing a total of 647 457 people in 2017 alone.1 Although the overall rates of CVD mortality have been in decline for the total US population since 1980, differences between Black and White American rates have remained.2 For example, crude rates for all CVD mortality were approximately 30% higher for non-Hispanic Black persons compared with non-Hispanic White persons as recently as 2014 and have been consistent since at least

2000.2In 2003, the US National Academies of Sciences, Engineering, and Medicine published the groundbreaking Institute of Medicine study on racial/ethnic health disparities in the United States, Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care,3 which detailed racial/ethnic health disparities across a wide spectrum of morbidities, mortality, and health care services. This report helped shine a bright light on the pervasiveness of the health disadvantages faced by racial/ethnic minorities in the United States and served to promote increased focus and funding on research efforts as well as policy solutions at the national and state levels to address these inequalities. Seven years after the Institute of Medicine report, in 2010 the US Congress passed the Patient Protection and Affordable Care Act, which, in part, aimed to reduce morbidity and mortality by expanding access to health care. Within this context, questions remain about the relative contribution ofvarious risk factors in explaining the observed Black- White CVD mortality difference, such as socioeconomic characteristics, health behaviors, and access to health care.

Gibbons, M. J., B.S., Fan, Mary D,J.D., M.Phil, Rowhani-Rahbar, A., & Rivara, Frederick P,M.D., M.P.H. (2020). Legal liability for returning firearms to suicidal persons who voluntarily surrender them in 50 US states. American Journal of Public Health, 110(5), 685-688. doi:https://doi.org/10.2105/AJPH.2019.305545

Temporary transfers of firearms from suicidal persons is a strategy to reduce the incidence of suicide deaths. We discuss a barrier to the effective operation of voluntary temporary firearm transfer laws: the dearth of guidance on the liability for returning firearms to persons who voluntarily surrender them. We examine the laws of all 50 US states that regulate temporary surrenders of firearms and evaluate whether any provisions govern liability for returning temporarily surrendered firearms. Although 14 states create background check exceptions to permit temporary transfers of firearms from an owner to family, friends, retailers, or law enforcement, no states prescribe procedures for returning those firearms.ability for returning the firearms to people who voluntarily surrendered them. We recommend amending state laws to clarify the process and liability for returning temporarily surrendered firearms to the original owner. Such amendments would be intended to mitigate the potential chilling effect that lack of clarity and presumption of liability may impose on efficiently reducing firearm access to protect firearm owners at risk for suicide. (Am J Public Health. 2020;110: 685-688. doi:10.2105/AJPH. 2019.305545)

Abbasi, Ali,M.Sci, M.Phil, Pals, B., B.A., & Gazze, L., PhD. (2020). Policy changes and child blood lead levels by age 2 years for children born in illinois, 2001–2014. American Journal of Public Health, 110(5), 734-740. doi:https://doi.org/10.2105/AJPH.2020.305566

Objectives. To evaluate how lowering the blood lead level (BLL) intervention threshold affects childhood lead testing policy. Methods. We geocoded 4.19 million Illinois lead testing records (2001-2016) and linked to 2.37 million birth records (2001-2014), data on housing age, industrial emissions, and roads. We used multinomial logistic regression to determine predictors of BLLs of 10 micrograms per deciliter (μg/dL) or greater, 5 to 9 μg/dL, and 4 μg/dL. Results. We found that 2.2% of children had BLLs of 10 μg/dL or greater, 8.9% had BLLs of 5 to 9 μg/dL, and 5.7% had BLLs of 4 μg/dL. Pre-1930 housing was associated with more than 2- to 4-fold increased relative risk of BLLs above all thresholds. Housing built in 1951 to 1978 was associated with increased relative risk of BLLs of 5 to 9 μg/dL (relative risk ratio RRR] = 1.14;95% confidence interval CI] = 1.06, 1.21) but not with increased relative risk of BLLs of 10 μg/dL or greater (RRR = 0.99;95% CI = 0.84,1.16). At a given address, previous BLLs of 5 to 9 μg/dL or BLLs of 10 μg/dL or greater were associated with increased risk of BLLs of 5 to 9 μg/dL or BLLs of 10 μg/dL or greater among current occupants by 2.37- (95% CI = 2.20, 2.54) fold and 4.08- (95% CI = 3.69, 4.52) fold, respectively. Conclusions. The relative importance of determinants of above-threshold BLLs changes with decreasing intervention thresholds. Public Health Implications. States may need to update lead screening guidelines when decreasing the intervention threshold. (Am J Public Health. 2020;110:734-740. doi: 10.2105/AJPH.2020.305566)

Michaels, David,PhD., M.P.H., & Barab, J., M.A. (2020). The occupational safety and health administration at 50: Protecting workers in a changing economy. American Journal of Public Health, 110(5), 631-635. doi:https://doi.org/10.2105/AJPH.2020.305597

The passage of the Occupational Safety and Health Act of 1970 brought unprecedented changes in US workplaces, and the activities of the Occupational Safety and Health Administration (OSHA) have contributed to a significant reduction in work-related deaths, injuries, and illnesses. Despite this, millions of workers are injured annually, and thousands killed. To reduce the toll, OSHA needs greater resources, a new standardsetting process, increased civil and criminal penalties, full coverage for all workers, and stronger whistleblower protections. Workers should not be injured or made sick by their jobs. To eliminate work injuries and illnesses, we must remake and modernize OSHA and restructure the relationship of employers and workers with the agency and each other. This includes changing the expectation of what employers must do to protect workers and implementing a requirement that firms have a "duty of care" to protect all people who may be harmed by their activities. Only by making major changes can we ensure that every worker leaves work as healthy as they were when their work shift began. (Am J Public Health. 2020;110:631-635. doi: 10.2105/AJPH.2020.305597)

Smith, Nathaniel,M.D., M.P.H., & Fraser, Michael,PhD., M.S. (2020). Straining the system: Novel coronavirus (COVID-19) and preparedness for concomitant disasters. American Journal of Public Health, 110(5), 648-649. doi:https://doi.org/10.2105/AJPH.2020.305618

Just a few weeks before the first confirmed case of novel coronavirus (COVID-19) was reported in the United States, the US Centers for Disease Control and Prevention (CDC) issued a bold promise to the nation: the agency will use its scientific expertise to bring a new level of preparedness in the United States and global health security against current and growing threats, finally eliminate certain diseases, and bring an end to the devastation of epidemics.1 The current outbreak of COVID-19 reminds us how urgent this promise is and just how critical it is to continue to sustain and strengthen our nation's public health infrastructure. The unprecedented pace of the public health response to COVID-19 has only been possible because of prior investments in public health preparedness. To accelerate our pace and meet the challenges of current and future health threats, we must advance our world-class data and analytics capabilities; maintain and expand our state-of-the-art public health laboratory capacity; continue building a workforce of trusted, expert, public health professionals; sustain our capacity to rapidly respond to outbreaks at their source; and assure a strong global and domestic preparedness capacity.

Visionary leadership, visionary goals: NPHW@25. (2020). American Journal of Public Health, 110(4), 427-428. doi:https://doi.org/10.2105/AJPH.2019.305501

On May 25, 1961, President John F. Kennedy announced before a special session of Congress that it was the goal of the United States of America to land a man on the moon and bring him safely home within the decade. At the time, many felt this was an unrealistic goal because much of the technical science and math were unknown. But we were in a space race and the Soviet Union was way ahead of the United States in both experience and space science, having been successful in both sending up the first space satellites and the first man and woman to orbit the earth. There were numerous challenges that the United States needed to overcome beyond the science if we were going to achieve this: the extraordinary cost ($25 billion, or $125 billion in today's costs) and the need to marshal and focus public support and political will. It was indeed an ambitious goal, some might even say unrealistic. But what it really was, was visionary-leadership at its best.Kennedy believed strongly in the capacity of the US science community, in particular the newly created National Aeronautics and Space Administration, which already had this idea but as a longer term goal. The president trusted that his scientists could accomplish this if he championed the effort, convincing Congress to provide the funding and the political support. He understood that essential to this was having focus and building public support. So Kennedy set a visionary goal, got the money, and rallied the public. In one of his most famous speeches, at Rice University, he stated, "We choose to go to the moon.... We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard." On July 20, 1969, the United States successfully landed humans on the moon and returned the astronauts safely to earth.

Fine, M., & Gabow, P. A. (2020). The public health value of Hospitals/Comments. American Journal of Public Health, 110(4), 453-455. doi:https://doi.org/10.2105/AJPH.2020.305583

Simply put, the public health value-or risk-of hospitals is unknown. It is too late to invoke the precautionary principle in public policy decisions about the number and location of hospital beds, as hospitals have acquired a public policy and political life of their own. Butitisthe time to subjectthe public health impact ofhospitals to the same scrutiny that has been used to assess and then champion the public health value ofprimary care.

Chilton, M., Jones, S., & Ishay, M. (2020). The rights of nature and the future of public Health/Comments. American Journal of Public Health, 110(4), 459-461. doi:https://doi.org/10.2105/AJPH.2020.305582

We are in the midst of a worldwide public health emergency. In October 2019, 11000 scientists from more than 150 countries declared that human consumption and corporate overreach were degrading ecosystems and driving more than a million species to extinction, including humans.1 The collective impact ofdysregulated climate; disruption of the water, phosphorous, and nitrogen cycles; and the collapse of food chains causes widespread trauma, which fosters social and ecological violence. The World Health Organization estimates that avoidable environmental risk factors cause 12.6 million deaths each year around the globe.2 Our current crisis is undoing 50 years of gains in public health.3 Such ecological devastation is associated with increased suicide, depression, isolation, and addiction.4 Those who suffer most from these ecological threats are least responsible: indigenous peoples, people who are poor, and communities of color.Public health is faced with a choice at this critical moment. Do we continue with business as usual, addressing the diseases of modernity, such as heart disease, without questioning the values underlying modernity? Or do we do what we in public health are best suited to do: transform the paradigm of health to be more inclusive and better encompass our current challenges?

Kranz, A. M., PhD., Mahmud, A., M.P.H., Agniel, D., PhD., Damberg, C., PhD., & Timbie, J. W., PhD. (2020). Provision of social services and health care quality in US community health centers, 2017. American Journal of Public Health, 110(4), 567-573. doi:https://doi.org/10.2105/AJPH.2019.305519

Objectives. To describe the types of social services provided at community health centers (CHCs), characteristics of CHCs providing these services, and the association between on-site provision and health care quality. Methods. We surveyed CHCs in 12 US states and the District of Columbia during summer 2017 (n = 208) to identify referral to and provision of services to address 8 social needs. Regression models estimated factors associated with the provision of social services by CHCs and the association between providing services and health care quality (an 8-item composite). Results. CHCs most often offered on-site assistance for needs related to food or nutrition (43%), interpersonal violence (32%), and housing (30%). Participation in projects with community-based organizations was associated with providing services on-site (odds ratio =2.48; P =.018). On-site provision was associated with better performance on measures of health care quality (e.g., each additional social service was associated with a 4.3 percentage point increase in colorectal cancer screenings). Conclusions. Some CHCs provide social services on-site, and this was associated with better performance on measures of health care quality. Public Health Implications. Health care providers are increasingly seeking to identify and address patients' unmet social needs, and on-site provision of services is 1 strategy to consider. (Am J Public Health. 2020;110:567-573. doi:10.2105/AJPH.2019.305519)

Des Jaríais, Don C, PhD, Feelemyer, J., M.S., LaKosky, P., PhD., Szymanowski, K., B.A., & Arasteh, K., PhD. (2020). Expansion of syringe service programs in the united states, 2015–2018. American Journal of Public Health, 110(4), 517-519. doi:https://doi.org/10.2105/AJPH.2019.305515

Objectives. To report on the expansion of syringe service programs (SSPs) in the United States from 2015 to 2018. Methods. We obtained data from records of the Buyers' Club of the Dave Purchase Project/North American Syringe Exchange Network (NASEN), including the number of US SSPs and the numbers of sterile syringes purchased by programs. We conducted a subset analysis of states with high numbers of counties defined as "vulnerable" by the Centers for Disease Control and Prevention. Results. SSP participation in the Buyers' Club increased from 141 in 2015 to 292 in 2018, with an increase in syringes purchased from 42 million to 88 million. In addition to these large increases in numbers of programs and in syringes purchased, there were also indications of instability among new programs in vulnerable states. Conclusions. There have been substantial increases in the number of programs

established and the number of syringes distributed in response to the opioid epidemic. Ensuring high-quality services in these new programs will be critical to successfully addressing the current epidemic. (Am J Public Health. 2020;110:517-519. doi:10.2105/AJPH.2019.305515)

Influenza vaccination and migration at the US southern border. (2020). American Journal of Public Health, 110(4), 466-467. doi:https://doi.org/10.2105/AJPH.2019.305547

n the past year, at least three children who migrated across the US southern border in the custody of Customs and Border Protection (CBP) died with laboratory-confirmed influenza infection as a contributing factor.1 The first was Felipe, an eight-year-old boy from Guatemala who died in December 2018 upon arrival to the hospital after being diagnosed with influenza B earlier in the day. The second was Wilmer, a two-year-old boy who died in May 2019 after an eightday admission to the pediatric intensive care unit, where he had tested positive for influenza A. The third was Carlos, a 16-yearold boy who was diagnosed with influenza A in May 2019 at a CBP Centralized Processing Center. He was given oseltamivir and transferred to another detention facility in isolation, where he was found dead in his cell less than 24 hours later.After inquiries from members of Congress, CBP disclosed that border facilities neither require influenza vaccination for staffnor offer influenza vaccine to migrants. Examining the agency's decision provides a window into US immigration policy and priorities at the southern border.Influenza and other infectious diseases are serious risks in every congregate living facility, but detention poses special additional risks. Introducing cohorts of susceptible detainees into a closed community creates a "revolving door effect," in which newly arriving people are quickly exposed to each other and to those already in the facility.2 Documentation of overcrowding, lack of access to soap and water, and inadequate infrastructure to isolate sick people in US detention facilities indicate that living conditions may be contributing to the spread ofinfectious diseases in detention centers. In addition to the deaths from influenza, there have been reported outbreaks of other infectious diseases, most notably mumps, with almost 900 confirmed and probable cases across 57 facilities run by Immigration and Customs Enforcement from September 2018 to August 2019.3A range of actions would reduce these risks substantially. Basic steps would include surveillance for infectious diseases, prompt triage, early treatment, isolation, and improved medical monitoring of sick people. Vaccination of staff would reduce their risk as well as the risks to the detained population. In the case of influenza, vaccination of migrants themselves would reduce the incidence of disease and its severity.

Kassler, W., & Greenberg, S. J. (2020). Turning barriers into benefits to facilitate public health and business Partnership/Comments. American Journal of Public Health, 110(4), 443-446. doi:https://doi.org/10.2105/AJPH.2019.305551

On first impression, the business sector and public health in the United States may appear to be unlikely collaborators. The predominant view of business organizations reflects a doctrine articulated by economist Milton Friedman that the only social responsibility of a corporation is to increase its profits,1 and most companies have limited interactions with public health. Thus, public health practitioners tend to see their relationships with corporations through a regulatory lens. A lot of time and effort has been spent enforcing laws and regulations that protect health and ensure safety, and less in collaborating with the private sector in mobilizing community partnerships to solve health problems. This is not without good reason; history is strewn with examples of corporations causing widespread harm from the products they have sold and environmental degradation from their operations. Business is seen as being indifferent at best, and hostile at worst to larger health concerns. Yet, whether they realize it or not, every business is in the health business. Table 1 provides examples ofsuccessful corporation public health interventions.

Erwin, P. C., Linares-Perez, N., & Verez-Bencomo, V. (2020). Vaccination achievements of cuba versus the united states exposed by the 2019 measles epidemic. American Journal of Public Health, 110(4), 467-469. doi:https://doi.org/10.2105/AJPH.2020.305580

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