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TABLE OF CONTENTS

TABLE OF CONTENTS

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Flavor in Cigarettes and E-cigarettes Contributes to Singapore Youths' Smoking Initiation

Anonymous

FULL TEXT

In Singapore, half of tobacco products contain added fl avors such as menthol. Van der Eijk et al. conducted 9 focus groups (n = 46) with individuals aged 20 to 25 years who currently smoked to understand the role of fl avors in smoking initiation. Flavored tobacco products seemed to trigger curiosity to experiment with e-cigarettes and cigarettes. Menthol-fl avored tobacco products were appealing because of their smoothness and cooling sensation, which is welcome in Singapore's hot, humid climate. Some participants believed that fl avored products were less harmful than regular tobacco products. Therefore, fl avors in tobacco products appear to play an important role in smoking initiation alongside the misperception of their safety.

Citation. van der Eijk Y, Lin L, Gan L, Teo O, Subramaniam M, Lee JK. "The menthol one is more friendly": young Singaporeans' perspectives on fl avored cigarettes. Asia Pac J Public Health. 2022;34(23):236-243. https://doi.org/10.1177/10105395211065307

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Copyright:	Copyright American Public Health Association Jul 2022
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Social Norms and Peers Infl uence E-cigarette Use and Cessation

Anonymous

FULL TEXT

Amin et al. conducted a qualitative study to explore factors that infl uence the use of e-cigarettes in Australia. Using responses from semistructured interviews with 14 past and current e-cigarette users, Amin et al. found 3 distinct themes: "social," "health," and "access and other personal" in the reasons for individuals to start, continue, or stop using e-cigarettes. The social reasons included issues of peer infl uence and social norms, the health reasons included the health effects from using e-cigarettes, and the other reasons included cost and access to e-cigarettes. Among previous cigarette smokers, health reasons infl uenced the decision to start using e-cigarettes, whereas nonsmokers cited social norms for both starting and stopping the use of e-cigarettes. These factors should be considered when creating interventions targeted at limiting e-cigarette uptake among nonsmokers.

Citation. Amin S, Dunn AG, Laranjo L. Why do people start or stop using e-cigarettes in Australia? A qualitative interview-based study. Health Promot JAustr. 2021;32(suppl 2):358-366. https://doi.org/10.1002/ hpja.442

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On Narratives, Nudges, and Opioid Use for Pain Management

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FULL TEXT

A recent article by Altshuler revealed findings on the use of narrative strategies to communicate with patients about the risk of opioid use for pain management.1 Patients presented with benefit-risk information through video narratives combined with personalized probabilistic risk tools (PRTs) were less likely to take opioids than those presented solely with PRTs or standard written instructions. Additionally, it was noted that the preference to avoid opioids did not last over time, but was a short-term preference.

The use of narratives in decision-making can have at least two types of effects on decision-makers. There might be a change of judgment caused by more awareness. Alternatively, there might be a nudge. In behavioral economics, a nudge alters people's behavior by reframing the choice, without changing underlying beliefs or preferences.2 For example, placing a photo of a decaying lung on a cigarette carton might cause smokers to avoid cigarettes in that moment. It does not mean that they have changed their beliefs or preferences about the value of cigarette smoking. A change of judgment, by contrast, can occur when that initial emotional response leads to a further reflection about whether an action is appropriate. One of the earliest proponents of narrative theory, Adam Smith, explained this in terms of "sympathy."3 Smith argued that sympathy has two cognitive functions: the imaginative element, which enables peopleto put themselves in the shoes of another, and a reflective element, which asks what an appropriate response to a situation is from that other position. The first element should be what raises awareness, the second what leads to a stable (long-term) change in beliefs and preferences.

It seems that hearing videos about others who have used opioids to manage pain does serve to reframe the decision for patients, but does it change beliefs and judgments? It is possible, for example, that beliefs do in fact change, but that over time the quality of life is so poor without opioids for pain management that those beliefs are overridden by other experiences. Alternatively, it might be that the reframing is merely a nudge. We might learn more by clarifying what it is that causes those who initially decided not to use opioids to manage pain, to subsequently change their decision. ÂfPU

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CONFLICTS OF INTEREST

The author has no known conflicts of interest to declare.

Sidebar

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3. SmithA. The Theory of Moral Sentiments. London,UK: Penguin; 2010. https://doi.org/10.1002/97811 1801 1690.ch10

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E-Cigarette Flavors, Devices, and Brands Used by Youths Before and After Partial Flavor Restrictions in the United States: Canada, England, and the United States, 2017–2020

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ABSTRACT (ENGLISH)

Objectives. To examine the impact of US restrictions implemented in February 2020 prohibiting flavors other than menthol and tobacco in cartridge-based e-cigarettes. Methods. We analyzed 5 cross-sectional waves of the International Tobacco Control Policy Evaluation Project Youth Tobacco and Vaping Surveys, conducted online with youths aged 16 to 19 years in the United States, Canada, and England, for differences in usual e-cigarette flavor, device, and brand reported by past-30-day vapers (n = 9512) before (2017, 2018, 2019), during (February 2020), and after (August 2020) implementation of US flavor restrictions. Results. In August 2020, 78.7% of vapers in the United States reported using a flavor prohibited in cartridges or pods, versus 86.3% in Canada (adjusted odds ratio [AOR] = 1.73; 95% CI = 1.25,1.40) and 79.8% in England (AOR = 1.10; 95% CI = 0.78,1.55). Disposable e-cigarettes (exempt from flavor restrictions) increased to a greater extent among vapers in the United States (13.2% to 36.8%) versus Canada (7.7% to 14.2%; AOR = 2.01; 95% CI = 1.33, 3.04) and England (10.8% to 16.4%; AOR = 2.33; 95% CI 5 1.52, 3.57). Puff Bar (disposable) emerged as the most popular brand in the United States. Conclusions. Usual flavors used by youth vapers in the United States were unchanged after 2020 restrictions on cartridge-based e-cigarettes. Youths used brands and devices exempt from the restrictions. (AmJ Public Health. 2022;112(7):1014-1024. https://doi.org/10.2105/AJPH.2022.306780)

FULL TEXT

Headnote

Objectives. To examine the impact of US restrictions implemented in February 2020 prohibiting flavors other than menthol and tobacco in cartridge-based e-cigarettes.

Methods. We analyzed 5 cross-sectional waves of the International Tobacco Control Policy Evaluation Project Youth Tobacco and Vaping Surveys, conducted online with youths aged 16 to 19 years in the United States, Canada, and England, for differences in usual e-cigarette flavor, device, and brand reported by past-30-day vapers (n = 9512) before (2017, 2018, 2019), during (February 2020), and after (August 2020) implementation of US flavor restrictions.

Results. In August 2020, 78.7% of vapers in the United States reported using a flavor prohibited in cartridges or pods, versus 86.3% in Canada (adjusted odds ratio [AOR] = 1.73; 95% CI = 1.25,1.40) and 79.8% in England (AOR

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Conclusions. Usual flavors used by youth vapers in the United States were unchanged after 2020 restrictions on cartridge-based e-cigarettes. Youths used brands and devices exempt from the restrictions. (AmJ Public Health. 2022;112(7):1014-1024. https://doi.org/10.2105/AJPH.2022.306780)

Flavors are a primary reason for tobacco initiation and continued use, particularly among youths and young adults.1,2 Flavors can increase the appeal oftobacco products through perceptions of improved taste and by decreasing the "harshness" of smoke inhalation.1,3-5

Flavors also play an important role in e-cigarette use.1,6,7 E-cigarettes come in an array of flavors, ranging from tobacco and menthol to exotic flavors numbering in the thousands.6,8,9 Fruit is the most popular flavor among younger vapers, followed by mint or menthol, and candy or dessert flavors.10-12 Fruit flavors are also popular among adult smokers who vape, although to a lesser extent than youths, with greater use oftobacco flavors as the age of adult vapers increases.13-15 The use of fruit and other nontraditional flavors has been associated with greater appeal and longer-term use of e-cigarettes among young people and greater satisfaction among adult smokers who vape.14,16,17

An increasing number of jurisdictions are implementing restrictions on e-cigarette flavors, with the goal of reducingthe appeal of vaping among young people. In February 2020, the US Food and Drug Administration implemented federal restrictions on the sale of flavors other than tobacco and menthol in cartridge- or pod-based products;18 the flavor restrictions do not apply to other types of e-cigarettes, such as e-liquids for refillable tank devices or disposable e-cigarettes. Cartridge-based products, such asJUUL, consist of a reusable device that is used with prefilled e-liquid cartridges or "pods." The popularity ofJUUL and other cartridge or pod brands among young people in the United States and Canada is welldocumented.19,20 In England, however, cartridge or pod e-cigarettes remain less prevalent than refillable tank devices among both youth and adult vapers.21-24 Disposable e-cigarettes were the least-popular device type in the United States, Canada, and England before 20 20.21,22,25

In this study, we examined trends in the use of flavored e-cigarettes among past-30-day vapers in the United States, Canada, and England. We examined whether the use of products with flavors other than tobacco or menthol decreased to a greater extent in the United States following implementation of the federal restrictions, compared with Canada and England, where there was no national policy change implemented for these products. We hypothesized that there would be only modest changes in the flavor profile of e-cigarettes among youth vapers in the United States, along with an increase in the use of product types and brands that were exempt from the flavor restrictions, including disposable e-cigarettes. These hypotheses were based on the partial nature of flavor restrictions that apply to only a subset of products, which have previously been shown to have limited impact.4

METHODS

The International Tobacco Control Policy Evaluation Project (ITC) Youth Tobacco and Vaping Survey is a self-completed online survey examining use of tobacco and vaping products among youths in Canada, England, and the United States. Repeat cross-sectional data are reported from the first 5 waves, conducted in July-August 2017, AugustSeptember 2018, August-September 2019, February-March 2020, and August 2020.

Protocol

Participants completed a 20-minute survey, available in English in all countries, as well as in French in Canada. On completion, respondents received remuneration in accordance with their panel's usual incentive structure, which could include points-based or monetary rewards (redeemed for catalog items, as cash, or donated), as well as chances to win monthly prizes.

Sample

The current study included a subsample of 9512 past-30-day vapers, aged 16 to 19 years, from the United States, Canada, and England, who were recruited as part of the ITC Youth Tobacco and Vaping Survey through Nielsen

Consumer Insights Global Panel and their partners' panels, either directly or through their parents. A full description of the study methods can be found in the Technical Reports.26

Sociodemographic variables included sex at birth, age, student status, and high-school grades. Race/ethnicity was assessed using country-specific questions with multiple categories, which were recoded to "White (only)" or "else" (including any other race/ethnicity and not stated) to allow for cross-country comparisons. Smoking behavior was also assessed, as reported elsewhere.27

Vapers were asked to indicate the flavors) of e-cigarettes or e-liquids they had ever used, and provided with a list: tobacco; mix of tobacco and menthol; menthol or mint; fruit; candy, chocolate, desserts, or sweets; clove or other spice; coffee; a nonalcoholic drink; an alcoholic drink; other flavor; or unflavored. Past-30-day vapers were asked, "In the LAST 30 DAYS, which of these flavours did you use MOST OFTEN?" with a list of the flavors they had selected in the previous question; respondents could select multiple options. In August 2020, menthol and mint were displayed as separate response options, and they have been combined for this analysis unless otherwise specified.

Ever-vapers were asked to indicate the type(s) of e-cigarettes and vaping devices they had ever tried, using either a precoded checklist (in 2017) or "yes/ no" items with corresponding product images (from 2018 onward) for the following: disposable ("Disposable [not refillable or rechargeable] e-cigarette/ vaping device"), cartridge or pod ("E-cigarette/vaplng device with replaceable pre-filled cartridges [or pods]"), and tanks ("E-cigarette/vaping device with a tank that you fill with liquid"). Past-30day e-cigarette users who had used more than one type were asked which type they used most often, and could select multiple options, except in 2018.

Past-30-day vapers reported the specific brand of e-cigarette or vaping device they "currently use most often," using country-specific precoded brand lists; respondents could also select "other" and enter the brand name or select "I don't have a usual brand," "Don't know," or "Refused." Note that the Vype brand in Canada transitioned to Vuse in 2020; therefore, these brands are presented together. Although some vaping brands (e.g., Smok) are offered in a variety of device types, other leading brands are only offered as cartridge or pod products (e.g.,JUUL and Vuse) or disposable products (e.g., Puff Bar).

Analysis

Poststratification sample weights were calculated for each country, based on age, sex, geographic region, and race/ethnicity (United States only). In addition, subsequent survey waves were calibrated back to 2017 for student status (student vs not) and school grades, and used the National Youth Tobacco Survey (NYTS) in the United States and the Canadian Student Tobacco, Alcohol, and Drugs Survey in Canada to calibrate to the trend overtime for smoking in the past 30 days. We conducted all analyses on the subsample of respondents who reported vaping in the past 30 days (n 5 9512).

Weighted estimates are reported unless otherwise noted, and adjusted odds ratios (AORs) and 95% confidence intervals (95% CIs) are reported for models. Separate logistic regression models for each flavor (or device type) were used to test the effects of time and country, adjusting for sex, age (grouped as 16 to 17, or 18 to 19), and race/ethnicity (White [only] vs else); contrasts were used to group the waves as 2017, 2018, and 2019 (preimplementation), compared with August 2020 (postimplementation), as well as with February-March 2020 (during implementation); we estimated country-by-time interaction terms to compare changes overtime between countries (e.g., 2017-2019 vs August 2020: Canada vs England). The US flavor policy implementation deadline was February 1, 2020; although data collection for the February-March 2020 survey occurred after this date, questions asking about past-30-day use would include some time before the implementation deadline for most respondents. Therefore, only the August 2020 data collection was categorized as "post-" flavor restrictions in the United States. However, we conducted sensitivity analyses in which we compared February-March 2020 with the preimplementation period.

We used additional logistic regression models to test country differences within August 2020 for using at least 1 ofthe flavors prohibited in cartridges or pods (including those listed in Table A, available as a supplement to the online version of this article at https:// ajph.org) vs using only unrestricted flavors (tobacco, mix of tobacco and menthol, unflavored), adjusting for sex, age group, and race/ethnicity, as well as for mint and menthol separately.

RESULTS

The sample was limited to past-30-day vapers (n = 9512); characteristics are shown by country in Table 1. Table B (available as a supplement to the online version of this article at http://ajph.org) shows the characteristics by country at each survey wave.

Usual Flavors Used by Past-30-Day Vapers

Figure 1 shows the 4 most commonly used flavors among past-30-day vapers. (Table B shows full data for all flavor types, Including those not shown In Figure 1, all of which were reported by fewer than 10% of respondents.) As Figure 1 illustrates, in 2020, fruit flavors were the most commonly reported usual flavor in all 3 countries, followed by menthol or mint; candy, chocolate, desserts, or sweets; tobacco; and mix of tobacco and menthol (displayed in Figure A, available as a supplement to the online version ofthis article at http://ajph.org).

Use of flavors restricted in US cartridges and pods. In August 2020, 78.7% of youth vapers in the United States reported usually using at least 1 of the flavors prohibited in cartridges and pods (but allowed in other devices), compared with 86.3% in Canada (AOR 5 1.73; 95% CI = 1.25, 2.40) and 79.8% in England (AOR = 1.10; 95% CI 5 0.78,1.55).

Use of restricted flavors (fruit, candy or dessert). In the United States, no significant differences were observed in the proportion of youth vapers who usually used fruit flavors before (2017-2019) or after (August 2020) restrictions were implemented (61.8% to 63.5%; P 5 .49). Over the same time period, no significant changes were observed within Canada (66.4% to 68.1%; P 5 .35) or England (61.6% to 63.5%; P 5 .49), with no differences in the effect of time between countries (P 5 .74 for interaction effect). Sensitivity analyses found an increase between 2017-2019 and February-March 2020 in the proportion of youth vapers in the United States who usually used fruit flavors (61.8% to 66.4%; AOR = 1.23; 95% CI 5 1.01,1.51), and still no significant differences in Canada or England. Table C (available as a supplement to the online version of this article at http:// ajph.org) shows the usual use of restricted and unrestricted flavors among the subset of vapers who reported usually using cartridge or pod products.

The use of candy or dessert flavors decreased among vapers in the United States from before to after flavor restrictions (17.5% to 9.5%; AOR = 0.49; 95% CI 5 0.35,0.67), as was the case in Canada (16.0% to 8.2%; AOR 5 0.44; 95% CI 5 0.31,0.63), with no differences over time in England (13.1% to 11.7%; P 5 .54). Sensitivity analyses comparing February-March 2020 with 2017-2019 found the same pattern ofresults.

Use of mint or menthol flavors. Before the August 2020 survey, mint and menthol were asked as a single category and could not be separated. When analyzed as a combined category, usual use of menthol or mint flavors increased between 2017-2019 and August 2020 in the United States (25.8% to 32.4%; AOR 5 1.41; 95% CI 5 1.12,1.76), Canada (14.8% to 26.3%; AOR 5 2.21; 95% CI 5 1.71, 2.86), and England (17.2% to 22.3%; AOR 5 1.39; 95% CI 5 1.02,1.88). Sensitivity analyses found similar increases between 2017-2019 and FebruaryMarch 2020 in the United States and Canada, but no significant difference in England (17.2% to 19.7%; P 5 .24).

When analyzed separately using August 2020 data, mint (excluding menthol) was more prevalent in the United States (18.2%; AOR 5 1.85; 95% CI 5 1.24, 2.77) and Canada (17.9%; AOR 5 1.94; 95% CI 5 1.30, 2.91) compared with England (10.6%). In August 2020, 21.0% of vapers in the United States reported using menthol e-cigarettes most often, significantly greater than among vapers in Canada (12.3%; AOR 5 1.90; 95% CI 5 1.35, 2.67) and England (14.8%; AOR 5 1.56; 95% CI 5 1.07, 2.27).

Use of unrestricted flavors (tobacco, mix of tobacco and menthol). Among vapers in the United States, we observed no changes in the use of tobacco (11.1% to 10.9%; P 5 .94) or mix of tobacco and menthol flavors (6.4% to 6.9%; P 5 .49) before and after flavor restrictions, as was the case in Canada (8.4% to 7.1 %; P 5 .36, and 4.8% to 4.3%; P 5 .79, respectively) and England (10.8% to 13.7%; P 5 .10, and 5.8% to 7.7%; P 5 .17, respectively) between 2017-2019 and August 2020. Sensitivity analyses comparing 20172019 with February-March 2020 found a decrease in mix of tobacco and menthol flavors in the United States (6.4% to 4.2%; AOR 5 0.66; 95% CI 5 0.45, 0.97), and the increase in tobacco flavor in England reached significance (10.8% to 13.7%; AOR 5 1.44; 95% CI 5 1.02, 2.03; P 5 .04), with no changes in Canada.

Full estimates from the models for each flavor discussed previously are shown in Table D (available as a

supplement to the onlineversion of this article at http://ajph.org).

E-Cigarette Device Type Among Past-30-Day Vapers

Figure 2 shows the device types used most often by past-30-day vapers in each country. Full estimates for each country and year are shown in Table E (available as a supplement to the online version of this article at http://ajph.org). In 2020, US vapers were most likely to report cartridge or pod devices, followed by disposables and refillable tanks. In Canada, cartridge or pod devices were also the most prevalent, followed by refillable tanks and disposables. By contrast, vapers in England were most likely to report refillable tanks, followed by cartridge or pod devices and disposables.

Cartridge or pod devices were more prevalent in August 2020 than in 2017-2019 in Canada (60.3% vs 31.9%; AOR 5 4.56; 95% CI 5 3.62, 5.74) and the United States (50.5% vs 47.0%; AOR 5 1.26; 95% CI 5 1.02,1.55), but did not increase significantly in England (27.9% vs 24.9%; AOR 5 1.20; 95% CI 5 0.92,1.58). The increase in cartridge and pod devices between 2017-2019 and August 2020 was greater in Canada compared with England (AOR 5 3.79; 95% CI 5 2.65, 5.42) and the United States (AOR 5 3.63; 95% CI 5 2.66,4.95). Sensitivity analyses comparing the FebruaryMarch 2020 wave to 2017-2019 indicated similar patterns in Canada and the United States, but the increase in England reached significance (31.4% vs 24.9%; AOR 5 1.42; 95% CI 5 1.10,1.83; P5 .006).

Between 2017-2019 and August 2020, usual use of disposable e-cigarettes increased in all 3 countries (Canada: 7.7% to 14.2% [AOR 5 1.98; 95% CI 5 1.41,2.76]; England: 10.8% to 16.4% [AOR 5 1.70; 95% CI 5 1.20, 2.41]; United States: 13.2% to 36.8% [AOR 5 3.97; 95% CI 5 3.11, 5.06]), but to a greater extent among US vapers compared with those in Canada (AOR 5 2.01; 95% CI 5 1.33,3.04) and England (AOR 5 2.33; 95% CI 5 1.52, 3.57). Sensitivity analyses comparing February-March 2020 and 2017-2019 found similar patterns in the United States and England, although no difference overtime in Canada (7.7% to 7.9%; AOR = 1.03; 95% CI = 0.74,1.43).

Usual use of refillable tanks decreased between 2017-2019 and August 2020 in Canada (61.2% to 38.8%; AOR = 0.35; 95% CI 5 0.29, 0.44) and the United States (45.2% to 29.3%; AOR = 0.47; 95% CI 5 0.38, 0.60), but not in England (65.7% to 61.7%; AOR 5 0.84; 95% CI 5 0.65,1.08). The decline in tanks was greater in Canada (AOR 5 0.42; 95% CI 5 0.30,0.59) and the United States (AOR 5 0.56; 95% CI 5 0.40, 0.79) compared with England. Results were similar in sensitivity analyses comparing February-March 2020 with 2017-2019, except that the decrease in tanks was significant in England (65.7% to 59.6%; AOR 5 0.77; 95% CI 5 0.61,0.97; P 5 .02).

Finally, the use of multiple product types increased in all countries between 2017-2019 and August 2020 (Canada: 6.7% to 14.3% [AOR 5 3.65; 95% CI 5 2.19, 6.08]; England: 6.5% to 8.9% [AOR 5 1.77; 95% CI 5 1.05, 2.96]; United States: 9.4% to 16.9% [AOR 5 2.37; 95% CI 5 1.67,3.37]), with no significant differences in the effect of time between countries (P 5 .12 for interaction effect). Sensitivity analyses comparing FebruaryMarch 2020 and 2017-2019 found consistent results.

Full estimates from the models for each device type are shown in Table F (available as a supplement to the online version of this article at https://ajph.org).

E-Cigarette Brand

Figure 3 shows the 5 most common "usual" brands among past-30-day vapers in each country in August 2020, as well as trends in these brands over time. (The 10 most commonly selected usual brands in each country and survey wave are listed in Table G, available as a supplement to the online version of this article at http://ajph.org.) In 2020, Smok,JUUL, and Vype/Vuse were amongthe top brands in all 3 countries. In the United States, Puff Bar was the most popular brand among youth vapers in August 2020. The findings also indicate the decreasing proportion of past-30-day vapers who reported not having or not knowing their usual brand, in all 3 countries.

DISCUSSION

Few, if any, changes were observed in the flavors used most often by youth vapers in the United States following federal restrictions on nontobacco and nonmenthol flavors in cartridgebased e-cigarettes in early 2020. Fruit remained the most popular usual flavor among youth vapers in all 3 countries. Trends before and after the US flavor restrictions were implemented were no different in the United States compared with Canada and England, with the exception that the decrease in candy- or dessert-flavored products was marginally greater in Canada. In 2020, usual

use of menthol or mint flavors increased among youths in the United States; although the study did not distinguish between "mint" and "menthol" before the flavor restrictions, youth vapers in the United States were equally or more likely to report using "mint" products in August 2020 after they were partially restricted, compared with those in Canada and England.

The findings suggest that the main impact of the US flavor restrictions on cartridge-based e-cigarettes among youths was a shift to disposable products, which were not subject to flavor restrictions. Past-30-day vapers in the United States were considerably more likely to report using disposable devices in 2020, with smaller increases in the use of disposable products in Canada and England. US trends in usual e-cigarette brands were consistent with the shift in device types: Puff Bar, a disposable device that was not subject to the flavor restrictions, rose from 0% in 2019 to the leading brand among youth vapers in 2020. Puff Bar has a nicotine profile similar to JUUL28 and is notable for its claim that the product contains synthetic nicotine, raising questions about the applicability of regulatory standards to the growing number of such products.29,30 The data suggest that the rise of disposable products like Puff Bar came at the expense of JUUL, consistent with other youth surveys in the United States.31 AlthoughJUUL ceased selling flavors other than tobacco, menthol, or mint in US retail stores in November 2018, before the February 2020 federal regulation,JUUL continued to sell flavored pods online, and sales data indicate a major decline in JUUL after the February 2020 regulation.12 Notably, JUUL also ceased sales of flavors other than tobacco or mint in Canada in January 2020, which corresponded with the increase we observed in mint-flavored products among Canadian youths.

Although the primary effect of the US flavor restrictions was a shift toward disposable products, a substantial number of vapers continued to use cartridge or pod products with the restricted flavors. For example, in August 2020, 53% of cartridge or pod vapers in the United States reported usually using fruit flavors. Thus, noncompliance with the flavor restrictions appears to be widespread.

The current results are consistent with findings from US surveys,32 including the NYTS, in which the use of disposable products increased from 2% in 2019 to 27% in 2020 among US high-school students.33,34 Fruit remained the most commonly used flavor, followed by mint, menthol, and candy, desserts, or other sweets.35,36 Retail sales data between August 2019 and May 2020 also indicate a rise in disposable e-cigarettes, and a marked shift from mint to menthol flavors in cartridge and pod products.37 The distinction between "mint" and "menthol" warrants closer examination. Flavor restrictions in the United States are based upon brand descriptors, rather than the chemical constituents of the flavorants themselves, and menthol and mint are often used interchangeably in product names.35 For example, menthol is a primary flavoring ingredient in JUUL "mint" pods in Canada and the United States.36 Therefore, restricting "mint" but not "menthol" products may have limited impact on appeal to young people or on patterns of use.

The current findings from England are consistent with other national survey data showing increased use of fruit flavors between 2015 and 2021 among youths (from 42% to 52%), and substantial reductions in tobacco flavor (from 23% to 1%),24 with few changes among adult vapers in England since 2017.25 The findings provide additional evidence of differences between vaping markets in England and those in the United States and Canada: in England, youths and adults are considerably more likely to use refillable tanks than cartridge or pod devices, and less likely to use higher-nicotine, salt-based products.4,13,21,23-25 We are unaware of any recent Canadian evidence with which to compare the current results.

Limitations

The current study is subject to limitations common to survey research, including the potential for response bias. Participants were drawn from commercial panels and not recruited using probability-based sampling; therefore, the findings do not necessarily provide representative estimates within each country. However, the same methodology was used across countries and survey years and poststratification weights were used to weight the sample on sociodemographic factors.31 Recall of product data, including brand and flavor profile, is subject to recall error and potential bias: some degree of misclassification would be expected, particularly among infrequent vapers who may be less familiar with specific brands. To promote more accurate reporting, the study used precoded lists and allowed

open-ended "other" responses.

Finally, the current study did not assess changes in prevalence associated with the flavor restrictions. The flavor restrictions in the United States coincided with the onset of COVID-19 restrictions in the 3 countries. The pandemic had an important impact on both vaping and smoking behaviors among young people,32,38 such that changes in prevalence of use over this period cannot reliably be attributed to specific policy factors. Accordingly, we have focused on more "proximal" outcomes of the use of e-cigarette flavors, which are directly associated with the regulatory objective of flavor policies and less subject to general pandemic effects.

Public Health Implications

E-cigarette flavors reported by youth vapers in the United States, including fruit and candy, were largely unchanged after restrictions on cartridge-based e-cigarettes were implemented in 2020. Youth vapers in the United States appear to have circumvented the flavor restrictions by using device types exempt from the restrictions. The findings highlight the versatility of the e-cigarette market; accordingly, flavor restrictions and other product standards are likely to have greater impact if they are applied across all market segments.

As of 2021, a number of US states and Canadian provinces have implemented more comprehensive flavor restrictions. Future studies should examine the impact of such policies on youths and on e-cigarette use among adult smokers who vape as a method of quitting smoking. >·JPH

Sidebar

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D. Hammond conceptualized and designed the study, with assistance fromJ.L. Reid.J.L. Reid coordinated and supervised data collection. R. Burkhalter led the data analysis, with assistance from J. L. Reid. D. Hammond and J. L. Reid led the article preparation. All authors contributed to the article writing and interpretation of results, and reviewed and revised the article. All authors approved the final article as submitted and agree to be accountable for all aspects ofthe work.

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Note. The views expressed herein are solely the responsibility ofthe authors and do not necessarily represent the official views of Health Canada, the US National Institutes of Health, the US Food and Drug Administration, the NIHR, or the UK Department of Health and Social Care.

CONFLICTS OF INTEREST

D. Hammond has served as a paid expert witness on behalf of governments and public health authorities in legal challenges against tobacco and vaping companies. The other authors have no conflicts of interest relevant to this article to disclose.

HUMAN PARTICIPANT PROTECTION

This study was reviewed and received ethics clearance through a University of Waterloo Research Ethics Committee (ORE#21847/31017) and the King's College London Psychiatry, Nursing, and Midwifery Research Ethics Subcommittee.

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DETAILS

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E-Cigarette Flavors, Devices, and Brand Preferences Among Youths in Canada, England, and the United States: The Value and Challenges of Comparing International Survey Data

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ABSTRACT (ENGLISH)

In the past 10 to 15 years, e-cigarettes have grown in popularity as a means for smokers to quit. Their emergence has been associated with controversies about unknown effects on smoking and nonsmoking populations. Among adult smokers, e-cigarettes offer important harm reduction potential through supporting them in stopping smoking,1 and there is now growing international consensus that switching to e-cigarettes is likely to do smokers more good than harm. In regard to nonsmokers, particularly young people, concerns have included unknown physiological effects from exposure to e-cigarettes and perceptions that e-cigarettes may lead to more young people taking up smoking (as a new gateway to nicotine addiction or via renormalizing smoking).2
Changes in the nature of concerns reflect the technological developments of vape products over this time period. First-generation e-cigarettes were visually more like traditional tobacco cigarettes but lacked choice in flavors, whereas newer versions have evolved, looking less like their predecessors and gaining flavor alternatives. E-cigarette flavors have been demonstrated as a key attractive aspect of use among young people,3 raising questions as to whether flavors are a mechanism through which young people might become regular users of e-cigarettes and perhaps then regular smokers. Equally, however, choice of flavors plays an important role in potentially supporting adults who use e-cigarettes as a smoking cessation aid.4 It has therefore been a challenge for policymakers in different jurisdictions to balance actions that reduce pathways of harm for young people's health and actions that minimize disruption of smoking cessation efforts among adults, a choice often made within a limited supply of evidence.

FULL TEXT

In the past 10 to 15 years, e-cigarettes have grown in popularity as a means for smokers to quit. Their emergence has been associated with controversies about unknown effects on smoking and nonsmoking populations. Among adult smokers, e-cigarettes offer important harm reduction potential through supporting them in stopping smoking,1 and there is now growing international consensus that switching to e-cigarettes is likely to do smokers more good than harm. In regard to nonsmokers, particularly young people, concerns have included unknown physiological effects from exposure to e-cigarettes and perceptions that e-cigarettes may lead to more young people taking up smoking (as a new gateway to nicotine addiction or via renormalizing smoking).2
Changes in the nature of concerns reflect the technological developments of vape products over this time period. First-generation e-cigarettes were visually more like traditional tobacco cigarettes but lacked choice in flavors, whereas newer versions have evolved, looking less like their predecessors and gaining flavor alternatives. E-cigarette flavors have been demonstrated as a key attractive aspect of use among young people,3 raising questions as to whether flavors are a mechanism through which young people might become regular users of e-cigarettes and perhaps then regular smokers. Equally, however, choice of flavors plays an important role in potentially supporting adults who use e-cigarettes as a smoking cessation aid.4 It has therefore been a challenge for policymakers in different jurisdictions to balance actions that reduce pathways of harm for young people's health and actions that minimize disruption of smoking cessation efforts among adults, a choice often made within a limited supply of evidence.
In the past 10 years, policies on e-cigarette products and their use have evolved differently across continents, presenting opportunities for international comparative research. Learning from different contexts is important in understanding how people might change their behavior, and manufacturers might adapt their products, in response to new regulations. Flavor bans are one approach being explored and implemented in different countries to prevent young people from initiating use of e-cigarettes. Although nations includingthe United Kingdom have recently banned menthol cigarettes,5 somewhat perversely, given the popularity of menthol cigarettes among young smokers, there has appeared to be more enthusiasm in many countries for limiting flavors in e-cigarettes than in

combustible tobacco.

The article by Hammond et al. in this issue of AJPH (https://bit.ly/3PEbxDp) is timely because it examines the impact of recent legislation implemented in the United States that bans cartridgebased electronic nicotine delivery system products with the exception of tobacco- or menthol-flavored products.6 Importantly, other types of vape products are exempt from the ban, including disposable e-cigarettes. This was a potential loophole highlighted by Hammond and colleagues. Indeed, the Hammond et al. results showed increases in disposable products after the ban and few changes among flavors used by youths, with fruit flavor remaining the most popular six months after the restrictions were initiated in the United States. Although cartridge use in August 2020 (50.5%) was higher than the 2017 to 2019 average (47%), it is worth noting that the prevalence was increasing during these first three years. When cartridge use prevalence in August 2019 (58%) is compared with that in August 2020, the prevalence appears to have decreased in the United States after implementation of the legislation.

In addition, changes in the prevalence of vaping among young people were not analyzed. If this remained unchanged, it would suggest that the legislation did not have an impact on young people's vaping rates. It remains unclear whether young people's use would be affected by a complete ban on flavors across devices and whether such a ban would simultaneously result in the unintended consequence of making e-cigarettes less effective with respect to smoking cessation.

Hammond et al. conducted the same analyses with comparable data from England and Canada, countries that had not implemented the ban. The International Tobacco Control Surveys, which aim to measure the impact of national tobacco control policies, have immense value in providing harmonized international data for conducting natural experiments across settings, which are often difficult owing to differences in survey methods. However, comparing findings from different countries can present challenges given the international divergence in e-cigarette use, which likely reflects differences in the regulatory landscape over the past decade.7

For example, Hammond et al. highlighted that, unlike in the United States and Canada, cartridge and pod e-cigarettes remain less prevalent than refillable tank devices among youth and adult vapers in the United Kingdom. Since 2016, there has been a plateauing of e-cigarette use in the United Kingdom, in contrast to the large growth seen in the United States during this period.8 European Union legislation such as the Tobacco Products Directive likely delayed the entry of products such asJUUL into UK markets as a result of the restrictions on e-liquids with a nicotine strength of more than 20 milligrams per milliliter.

The United Kingdom and United States have also differed in respect to the positioning of e-cigarettes in relation to other tobacco products. In England, switching to e-cigarettes is encouraged among smokers by health authorities (e.g., the National Health Service), and these products may be available in time in the form of prescribed medical products.9 How e-cigarettes and traditional forms of smoking are compared with one another can affect young people's attitudes and behaviors in relation to both. Our research showed that young people continued to distinguish between smoking and using e-cigarette products after implementation of the Tobacco Products Directive.3 We suggested that this differentiation between the two could support the denormalization of smoking via e-cigarette use being recognized as a nonsmoking behavior. Indeed, our later research showed that the proliferation of e-cigarette use in the United Kingdom likely contributed to hardening attitudes toward smoking amongyoung people.10

In contrast to the United States, the majority of users of nicotine-based vaping products in the United Kingdom are adults.11 After implementation of the Tobacco Products Directive, e-cigarette flavor remained an important reason for e-cigarette experimentation among young people in the United Kingdom.3 Attraction to flavors continues to be a strong reason in more recent Englandbased surveys.11 Efforts to address vaping flavor enticement among young people may thus take different forms moving forward, with North America highlighting the role of nicotine-based products and England focusing more attention on the role of non-nicotine products. In the most recent UK vaping evidence update, it was recommended that regulation of non-nicotine vaping products be reviewed because these products are not as stringently regulated as those containing nicotine.11

As with any repeated cross-sectional data, it can be difficult to attribute causality, particularly in such a dynamic and rapidly developing landscape. For instance, Hammond etal. highlight the role ofthe COVID-19 pandemic, but there

are also the unknown effects ofthe August 2019 EVALI (e-cigarette or vaping product use-associated lung injury) outbreak, which may have contributed to changes in perceptions, behaviors, and choices regarding vaping devices. Future research will need to continue to monitor trends, because it may take time for legislation to have an impact. A recent survey of current adult vapers of non-tobacco-flavored products (conducted by some ofthe same authors from the Hammond et al. study) showed that 53.6% of these individuals were opposed to flavor bans and that, if a flavor ban were implemented, 28.3% would find a way to obtain their banned flavor.12 Continued qualitative research and national surveys will therefore be important in providing a deeper understanding ofthe impact of e-cigarette legislation as well as any unanticipated outcomes.

Sidebar

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Is It Time to Restructure the National Institutes of Health?

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ABSTRACT (ENGLISH)

The mission of the National Institutes of Health (NIH) is "to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability," primarily via biomedical research.1 The current moment, including the COVID-19 pandemic, renewed reckoning with systemic racism, political division, massive wealth inequality, the opioid crisis, rising rates of mental illness, and climate change, highlights the importance of biomedical research and the need for other approaches also. Thus, we ask the question: is it time to restructure the NIH? We explore reasons for and against restructuring and offer next steps.

FULL TEXT

The mission ofthe National Institutes of Health (NIH) is "to seek fundamental knowledge about the nature and behavior of living systems and the application ofthat knowledge to enhance health, lengthen life, and reduce illness and disability," primarily via biomedical research.1 The current moment, including the COVID-19 pandemic, renewed reckoning with systemic racism, political division, massive wealth inequality, the opioid crisis, rising rates of mental illness, and climate change, highlights the importance of biomedical research and the need for other approaches also. Thus, we ask the question: is it time to restructure the NIH? We explore reasons for and against restructuring and offer next steps.

WHY RESTRUCTURE?

Beyond prior arguments (e.g., organizing around outcomes is problematic),2-6 a key reason to restructure NIH is to reduce epistemic exclusion. Epistemic exclusion involves the underrepresentation of people and research methods that are relevant to a topic.7 Guided by principles of trustworthy scientific consensus,8 epistemic exclusion involves scientific practices that reduce diversity of relevant perspectives and methods by systematically favoring some perspectives or methods over others through resource allocation or consensus generation practices. This favoring is based on unexamined historical precedents, not the merits of one perspective or method over another. Epistemic exclusion reduces the trustworthiness of scientific consensus; thus, reducing it is critical for science.

Evidence suggests epistemic exclusion occurs within the NIH related to race and discipline. Evidence suggests system biases in (1) scoring favoring White over Black researchers,9 (2) less funding for topics Black researchers focus on,10 and (3) underrepresentation of Black researchers in study sections.10 Hoppe et al. stated, "[T]he funding gap between African American/Black and White scientists may be driven by a vicious cycle, beginning with African American/Black investigators' preference ... for topics less likely to excite ... the scientific community, leading to a lower probability of award, which in turn limits resources and decreases ... funding in the future."10(p8) This vicious cycle is epistemic exclusion. Although evidence exists for Black researchers, epistemic exclusion likely occurs with other social and ethnic groups, though more research is needed.

With regard to disciplines, approximately 70% of variance in health is attributable to nonbiological determinants, such as behaviors, social circumstances, and environmental factors.11 Thus, producing trustworthy scientific knowledge relevant to the NIH mission requires a diversity of disciplines receiving equitable funding (e.g., biology, medicine, nursing, physiology, public health, psychology, history, sociology, law, ethnic studies, neuroscience, political science, economics, ecology, urban planning, engineering, systems science), but equitable funding is not occurring. In 2019,12 approximately 22% ofthe NIH's extramural budget ($6 billion out of $29 billion) went to social and behavioral research, and approximately 8% went toward environmental (e.g., impact of climate change) research; the rest was biomedical research. Although biomedical research acknowledges social, behavioral, and environmental determinants, it uses its methodological assumptions, which are not always appropriate for nonbiological phenomena.11 Thus, determinants explaining approximately 70% of health variance receive approximately 30% of funding within the NIH. Although equitable funding need not be equal funding, this mismatch suggests disciplinary epistemic exclusion within the NIH, as does NIH's selfidentification as the biomedical research enterprise.13

In line with the visions of the National Institutes for Minority Health and Health Disparities (NIMHD)14,15 and the NIH UNITE initiative,13 reducing epistemic exclusion is important for reducing health disparities, ending structural racism, and advancing a more equitable scientific workforce. Reducing epistemic exclusion, particularly disciplinary epistemic exclusion, would also increase the types of evidence-based approaches studied.11 From this evidence base, it is likely that a more diverse repertoire of evidence-based solutions across determinants would be produced, thus enabling NIH to better achieve its mission.11 NIH's practices are often used as a template for other funding agencies, such as when other funders (e.g., the California Initiative for the Advancement of Precision Medicine) use NIH review procedures. Therefore, NIH practices that propagate epistemic exclusion will likely permeate elsewhere. Thus, NIH needs to lead on reducing epistemic exclusion related to race, discipline, and beyond. This is true even if, after examination, NIH is not restructured.

Reducing epistemic exclusion, whether it occurs related to race, discipline, or something else, should be studied scientifically, such as the process in Figure 1. First, identify possible epistemic exclusion. Second, interrogate structures and practices for possible propagation of epistemic exclusion. For NIH, these structures include but are not limited to institutes, organizational charts, staffing, decision-making practices, and external institutions with a history of NIH funding; practices include methods for ruling out alternatives, strategies for cultivating synthesis or consensus, precedents, social norms, rules of engagement, and default actions. Third, propose new structure and practice options, which could be developed and vetted by diverse stakeholders. Last, implement and test new options to determine the impact on epistemic exclusion, improved health outcomes, and unintended consequences. Although more speculative, this approach could be useful for increasing public confidence in science. A 2019 Pew Research Center survey found a large minority, 35%, stating that science produces "any result a researcher wants."16 Although improving scientific rigor and communication are possible solutions, another involves including dissenting perspectives and methods in discourse. This will not work with everyone, particularly those incentivized to stoke dissent, but improving inclusiveness would likely increase understanding of science and thus trust.

REASONS NOT TO RESTRUCTURE

There are several reasons not to restructure. First, the NIH has a long track record of success in biomedical research (e.g., COVID-19 vaccinations and therapeutics). Although NIH structures and practices may produce epistemic exclusion, restructuring could have the unintended consequence of reducing biomedical research quality. Second, the NIH receives bipartisan support, which could be jeopardized if restructured. Third, the NIH already includes mechanisms of restructuring, as evidenced by (1) the formation of the NIMHD,14'15 which provides pathways for historically marginalized groups and methods to be incorporated within the NIH; (2) the UNITE initiative to end structural racism13; (3) study section composition changes that sought to expand disciplinary representation: and (4) 1!IH embracing open science pm/Tices, including citizen science. Foi irthi, it is plausible (though we think i mlil·ely) that epistemic exclusion does not happen across funders. Last, new structures and practices might shift but not reduce epistemic exclusion.

HOW TO PROCEED

There are good reasons for and against restructuring the NIH. We suggest two oemplementar· next steps. First, both NIMHD and UNITE should incorporate- or centim re its 1 !se if they are already doing so-the process shown in Figure 1. For example, they could monitor epistemic exclusion within NIH (e.g., study sections, reviese processes,/ and, when identified related to race, ethnicity, or otherwise, study solutions. Although this is an excellent start, this would not lee s ffident to address disciplinary epistemic exclusion. Furthermore, the complexities and likelihood of unintended negative consequences from both action and inaction suggest the need for a broader, thorough, inclusive, and ongoing effort.

A neu ḷtral forum is needed whereby active i NIH stakeholders and people with historic or current experiences of marginalization and/or discrimination can come together, like the South African Truth and Recēndliation Commission. An outside group could facilitate the process, with robust community organizing for (1) working through implicit and explicit power differentials and rules of engagement that favor one perspective or method over another based only on historical precedent and not well-articulated merit; (2) culmeTing trust through relationships and compassion, not merely reason and empiricism: and (3) creating an inclusive leadership model that includes (a/ active i NIH stakeholders: (b) people from historically marginalized groups, including Black, Indigenous, and People of Color, with expertise in advancing f roicc equ jity, diversity/, and inclusion (e.g., see Akom17); (c) historically underrepresented disciplines, such as sociology, ethnic studies, and others listed earlier: and (d) constituents who do not tr no science while also lacking a conflict of interest (e.g., people with well-intentioned antivaccination pertun this forum, the work wc uld need to progress at the parse of trust-meaning slow when trust is low and fast when it is present-with funding to support ongoing trust cultivation.

Guided by the NIH mission, the group could follow the process in Figure 1, inch rding identifying possible epistemic exclusion, interrogating NIH practices that may propagate epistemic exclusion, creating new possible practices that cm uld feasible redu ice epistemic exclusion, and then implementing and 'evaluating new options. For this last step,

it will brr important to differentiate uncontested from contested solutions, such that uncontested solutions can be implemented and contested ones can be tested in a way that diverse stakeholders agree is fair. For example, multiple options of new nueitute structures co uld be prod! reed by diverse workgnu ups (e.g., see Table A, available as a si upplement to the 'online version of this article at http://www.ajph.org, or Crow18), which could then be vetted. The i NIH could repeat the process every 5 to 10 years to further demonstrate its commitment to reducing epistemic exclusion and, feasibly, improve public scientific literacy.

CONCLUSION

Health research in the United States could benefit from, first, NIMHD and the UNITE initiative implementing an ongoing process for identifying and addressing epistemic exclusion, and, second, NIH engaging in an extensive, inclusive, deliberative:, on-going process focused on addressing epistemic exclusion. This process would be beneficial even if, after reflection, the NIH is not radically restructured. If the NIH meaningfully invests in such a process, it could model a process of respectful inclusion and healing that could redi roe structuralinequities and foster the type of deliberative process science and society desperately need to advance equity and justice for all. >4jpu

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E. Hekler led the conceptualization and writing, including copyediting. C.A. M. Anderson and L. A. Cooper contributed to the conceptualarguments in the piece, contributed to subsections, and contributed significant review and copyediting.

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Which Regulatory Framework Is Best for Nicotine Vaping?

Mendelsohn, Colin P, MBBS; Wodak, Alex, MBBS [1] [1] St Vincent's Hospital, Sydney

ABSTRACT (ENGLISH)

Since our commentary in 2020,1 vaping nicotine has contributed to an unprecedented decline in tobacco smoking rates in the United States in both youths and adults. The empirical evidence for vaping as a substitute for smoking and its positive impact on public health continues to strengthen. However, the recent decision to not authorize most vaping products for the US market seems destined to undermine this remarkable progress in reducing smoking. According to the National Health Interview Survey, the adult cigarette smoking rate in 2020 was 12.5%, an 11% decline since 20192 (Figure A, available as a supplement to the online version of this article at https://ajph. org) Youth cigarette smoking appears to have been almost eliminated. Past30-day cigarette smoking in high schoolers was 1.9% in 2021 according to the National Youth Tobacco Survey.3 Past-30-day vaping declined by 59%- from

27.5% in 2019 to 11.3% in 2021.
In spite of this progress, US government policy remains driven by exaggerated concerns about youth vaping, especially the role of flavored products. However, growing evidence supports the hypothesis that, rather than being a gateway to smoking, vaping is displacing young people from smoking.4
There is also mounting evidence that flavored vaping products help smokers transition away from cigarettes and that flavor bans inadvertently lead to increased smoking in both adults and youths.5

FULL TEXT

Since our commentary in 2020,1 vaping nicotine has contributed to an unprecedented decline in tobacco smoking rates in the United States in both youths and adults. The empirical evidence for vaping as a substitute for smoking and its positive impact on public health continues to strengthen. However, the recent decision to not authorize most vaping products for the US market seems destined to undermine this remarkable progress in reducing smoking.
According to the National Health Interview Survey, the adult cigarette smoking rate in 2020 was 12.5%, an 11% decline since 20192 (Figure A, available as a supplement to the online version of this article at https://ajph. org)
Youth cigarette smoking appears to have been almost eliminated. Past30-day cigarette smoking in high schoolers was 1.9% in 2021 according to the National Youth Tobacco Survey.3 Past-30-day vaping declined by 59%- from 27.5% in 2019 to 11.3% in 2021.
In spite of this progress, US government policy remains driven by exaggerated concerns about youth vaping, especially the role of flavored products. However, growing evidence supports the hypothesis that, rather than being a gateway to smoking, vaping is displacing young people from smoking.4
There is also mounting evidence that flavored vaping products help smokers transition away from cigarettes and that flavor bans inadvertently lead to increased smoking in both adults and youths.5
AUSTRALIA'S FLAWED PRESCRIPTION-ONLY MODEL
Different countries are responding to these data in a variety of ways. Like the United States, Australia remains focused on the potential risk to youths. On October 1,2021, the federal government tightened its prescription-only model. The importation and use of nicotine e-liquids without a prescription is a criminal offense with fines of up to US$165 000. Unlike cigarettes, nicotine e-liquids cannot be legally sold in Australia except from pharmacies on presentation of a prescription from a doctor.
As expected, this has intensified widespread noncompliance. Very few doctors are willing to write prescriptions for nicotine e-liquid, and patients find the process complex, onerous, and costly. Many vapers take the risk of importing nicotine without a prescription, a thriving black market sells unregulated products without consumer protection or age restrictions, and there are many reports of vapers returning to smoking. Smoking rates are declining slowly (Figure A).
PROMISING DEVELOPMENTS IN NEW ZEALAND
New Zealand has taken an altogether different approach. Legislation was introduced in November 2020 to provide a comprehensive, risk-proportionate framework for vaping products intended to maintain access for adult smokers while banning sale and marketing to youths. Education and enforcement are key components of the plan.
A wide range of flavored e-liquids can be purchased from specialist vape retailers. However, only tobacco, mint, and menthol flavors are available from nonspecialist outlets such as petrol stations and supermarkets. The New Zealand Ministry of Health encourages vaping as a quitting aid for adult smokers and has established the Vaping Facts and QuitStrong Web sites to support it.
The recent New Zealand Health Survey suggests that this more liberal and balanced approach to vaping is already working. In 2021,10.9% of adults aged 15 years and older were current smokers, an unprecedented 20% decline in the previous 12 months6 (Figure A). The fall in smoking rates coincided with a sharp rise in adult vaping from 3.5% in 2020 to 6.2% in 2021.6
A similar pattern was seen in young people in New Zealand. In 2021, only 1.1 % of youths aged 15 to 17 years were smoking daily (3.1 % in 2020), and 5.8% were vaping daily (2.3% in 2020).6

Duringthistime, New Zealand has not had other major smoking policy changes. It is likely that vaping is a key reason for the accelerated decline in smoking rates.

It remains to be seen which model will work best over time. The early signs suggest that the New Zealand model is likely to have the most positive impact on public health for both adults and youths. >4JPH

Sidebar

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C. P. Mendelsohn and A. Wodak have never received payments from e-cigarette or tobacco companies. C. P. Mendelsohn was a board member of the Australian Tobacco Harm Reduction Association (ATHRA) health-promotion charity untilJanuary 2021. ATHRA received unconditional funding for establishment costs from smallAustralian vape businesses but has not accepted vape industry funding since March 2019. He is the author of the book Stop Smoking Start Vaping. A. Wodak is currently a board member of ATHRA.

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Scientific Publishing and the Tobacco Industry

Morabia, Alfredo, MD, PhD

ABSTRACT (ENGLISH)

In January 2020 the US Food and Drug Administration (FDA) released a Guidance for the Industry about marketing flavors for e-cigarettes (https://am.ajph.link/fda_ guidance). The guidance was a retreat from previous commitments to ban all flavors except those that tasted like tobacco. Mitch Zeller, then director of the FDA Center for Tobacco Products, explained it as a middle ground that would limit the extent of underage tobacco use without jeopardizing the potential of e-cigarettes to substitute tobacco in adult high-risk smokers (https:// am.ajph.link/FDA_ECIG).
The journal invited scholars to give their opinion about the expected impact of the guidance on these two outcomes. All the contributions we received in 2020 were critical of the guidance, but they also gave the impression that the FDA had acted to conform to the industry's expectations. What were the industry's expectations specifically? We checked by asking Derek Yach, who was then the director of an organization funded by Philip Morris International, and Brad Radu, who declares receiving unrestricted grants from tobacco manufacturers, to comment. Their conflicts of interest were mentioned in their two comments and at the beginning of the themed section. Their comments were both critical of the guidance too, which was an important additional piece of information for our dossier.

FULL TEXT

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We also told our invited commentators in 2020 that we would ask them to comment on their predictions in a follow-up issue. We are publishing this follow-upthis month with the pieces that met our request. Two groups of authors who had contributed to the first round refused to contribute because the journal had published these two industry-funded opinions. I therefore repeat here the policy of the journal.
AJPH does not publish research that is totally or in part funded by the tobacco industry. AJPH also has stringent criteria for letters to the editors and bars any research results from being published through this back door. The reason is simple (https:// am.ajph.link/bero_datamanip): if the data cannot be trusted, peer review will not help. Along these lines, we published an editorial condemningthe publication in a scientific journal of a series of research articles funded byJUUL (https://am.ajph. link/briggs). But we refused to publish a letter to the editor sent by a lawyer representing JUUL responding to this article. The letter argued that the situation has changed since the 2009 passage of the Family Smoking Prevention and Tobacco Control Act gave the FDA jurisdiction over tobacco products. Its premarket tobacco product application process says that manufacturers "must provide scientific data that demonstrates a [tobacco] product is appropriate for the protection of public health" (https://am.ajph.link/pmta). The tobacco industry needs to convince the scientific community that the situation has changed, and AJPH will not unilaterally break the current ban on industry-funded "research." However, AJPH may publish opinions in the rare situations in which it is deemed necessary to provide an accurate assessment of a specific situation. Our publication of the industry-related scientists' opinions about the potential impact of governmental guidance addressed to the industry is a case in point.

The Journal will be happy to discuss further the access to scientific publications of the tobacco and other industries that economic interests have proved to conflict with the public's health. Millions of lives are at stake.

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Flavors Remain a Major Driver of Youth E-Cigarette Use

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ABSTRACT (ENGLISH)

Over the past decade, the landscape of youth e-cigarette use has been dynamic.1,2 E-cigarettes have been the most commonly used tobacco product among US youths since 2014,1 and in 2019, current (past30-day) e-cigarette use prevalence reached a peak among middle-school (10.5%) and high-school (27.5%) students.3 During 2020 to 2021, the COVID-19 pandemic resulted in virtual learning for students, which impacted youth access to e-cigarettes, including from social sources; in 2020, before COVID-19 was declared a pandemic, more than half of youths who currently used e-cigarettes reported getting their e-cigarettes from a friend.3 Nonetheless, in 2021, more than 2 million US middle- and high-school students used e-cigarettes.

FULL TEXT

Over the past decade, the landscape ofyouth e-cigarette use has been dynamic.1,2 E-cigarettes have been the most commonly used tobacco product among US youths since 2014,1 and in 2019, current (past30-day) e-cigarette use prevalence reached a peak among middle-school (10.5%) and high-school (27.5%) students.3 During 2020 to 2021, the COVID-19 pandemic resulted in virtual learning for students, which impacted youth access to e-cigarettes, including from social sources; in 2020, before COVID-19 was declared a pandemic, more than half of youths who currently used e-cigarettes reported getting their e-cigarettes from a friend.3 Nonetheless, in 2021, more than 2 million US middle- and high-school students used e-cigarettes.2

POLICIES TO REDUCE YOUTH E-CIGARETTE USE

Flavors remain a major driver ofyouth e-cigarette use.2 A majority of youths who currently use e-cigarettes report flavors are a reason they used the products, and, in 2021,84.7% of youths who used e-cigarettes reported using a flavored product2; the most commonly used flavor types among youths were fruit (71.6%), followed by candy, desserts, or other sweets (34.1 %); mint (30.2%); and menthol (28.8%).2

Public health concerns over youth e-cigarette use have fueled the adoption of policies focused on flavored e-cigarettes. The US Food and Drug Administration (FDA) issued a policy in January 2020 that prioritized enforcement

against certain unauthorized cartridge-based flavored e-cigarettes thatappeal to youths, includingfruitand mint. In addition, as of February 2022, seven statesand more than 300communities have enacted restrictions on the sale of at least some flavored e-cigarettes; many of these laws include mentholflavored products.4 Research suggests these local laws are associated with reduced availability, marketing, and sales of restricted products.5 However, there is variation inthe specificproducts, flavors, and store types covered by these laws.4

FACTORS THAT DIMINISH POLICY IMPACT

Noncomprehensive policies, such as those that exempt certain flavors, can lead to shifts in behaviors by consumers that might diminish the policy's intended effects.5 For example, following the January 2020 national restriction on the sale of certain flavored cartridge-based e-cigarettes (excluding menthol and tobacco), increases occurred in US sales of mentholflavored e-cigarettes and disposable e-cigarettes, the latter of which were still available for sale with fruit, candy, mint, and other flavors.6 Disposable e-cigarette use increased among US youths during 2019 to 2020, and in 2020, among youths who used flavored e-cigarettes, menthol use was 34.3% among those who used disposable e-cigarettes and 48.4% among those who used prefilled cartridges or pods.3

Actions by manufacturers can diminish the impact of flavored e-cigarette restrictions. To evade regulations that define tobacco products as those containing nicotine derived from tobacco, some manufacturers have used synthetic nicotine created in laboratories; in March 2022, Congress passed a bill, subsequently signed into law, that brought tobacco products containing synthetic nicotine under FDA authority. In addition, flavor restrictions typically apply to "characterizing flavors," which are flavors with a distinguishable taste or aroma (e.g., chocolate, fruit), excluding tobacco flavor. However, policies based on characterizing flavor might not cover constituents added by the manufacturer that provide a cooling sensory experience (e.g., similar to menthol) that can increase appeal, but are not the characterizing flavor. A 2019 study of Connecticut youths found that half of those who used e-cigarettes reported using cooling flavored products, including many nonmenthol flavors.7

IMPORTANCE OF A COMPREHENSIVE APPROACH

Efforts at the national, state, and local levels remain critical to make flavored e-cigarettes less acceptable, accessible, and appealing to youths. These efforts include restrictions on the sale of flavored e-cigarettes that appeal to youths, without exemptions that diminish policy impact. Such strategies are important-as part of a comprehensive approach alongside other evidencebased population-level actions-to address youth e-cigarette use. Importantly, actions to reduce e-cigarette use among youths are not mutually exclusive from actions to maximize the potential benefits of e-cigarettes for increasing smoking cessation among adults. Â1PU

Sidebar

Note. The findings and conclusions in this report are those of the author and do not necessarily represent the official position of the US Centers for Disease Control and Prevention.

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CONFLICTS OF INTEREST

The author has no conflicts of interest to report.

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Geographic Differences in Reaching Selected National HIV Strategic Targets Among People With Diagnosed HIV: 16 US States and Puerto Rico, 2017–2020

Dasgupta, Sharoda, PhD, MPH; Tie, Yunfeng, PhD; Beer, Linda, PhD; Lyons, Shacara Johnson, MSPH; Shouse, R Luke, MD, MPH; Harris, Norma, PhD

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ABSTRACT (ENGLISH)

Objectives. To assess geographic differences in reaching national targets for viral suppression, homelessness, and HIV-related stigma among people with HIV and key factors associated with these targets. Methods. We used data from the Medical Monitoring Project (2017-2020) and the National HIV Surveillance System (2019) to report estimates nationally and for 17 US jurisdictions. Results. Viral suppression (range = 55.3%-74.7%) and estimates for homelessness (range = 3.6%-11.9%) and HIV-related stigma (range for median score = 27.5-34.4) varied widely by

jurisdiction. No jurisdiction met any of the national 2025 targets, except for Puerto Rico, which exceeded the target for homelessness (3.6% vs 4.6%). Viral suppression and antiretroviral therapy dose adherence were lowest, and certain social determinants of health (i.e., housing instability, HIV-related stigma, and HIV health care discrimination) were highest in Midwestern states. Conclusions. Jurisdictions have room for improvement in reaching the national 2025 targets for ending the HIV epidemic and in addressing other measures associated with adverse HIV outcomes-especially in the Midwest. Working with local partners will help jurisdictions determine a tailored approach for addressing barriers to meeting national targets.

FULL TEXT

Headnote

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Conclusions. Jurisdictions have room for improvement in reaching the national 2025 targets for ending the HIV epidemic and in addressing other measures associated with adverse HIV outcomes-especially in the Midwest. Working with local partners will help jurisdictions determine a tailored approach for addressing barriers to meeting national targets. (AmJ Public Health. 2022;112(7):1059-1067. https:// doi.org/10.2105/AJPH.2022.306843)

Released in December 2021, the "National HIV/AIDS Strategy" (NHAS) outlines the plan for ending the HIV epidemic in the United States. The vision of NHAS is for the United States to

be a place where new HIV infections are prevented, every person knows their status, and every person with HIV has high-quality care and ment, lives from stigma and discrimination, and can achieve their full potential for health and wellbeing across the life span.1

NHAS sets out to accomplish this vision through 4 key goals. Progress toward these goals is assessed through 9 national targets, 4 of which are used to assess progress in HIV care and treatment outcomes among people with diagnosed HIV, as well as known barriers to care and viral suppression- including stigma and homelessness. Using NHAS as a roadmap, the Ending the HIV Epidemic in the U.S. initiative focuses its efforts in 57 of the jurisdictions with the highest burden of HIV.1,2

Viral suppression is critical for the health and well-being of people with HIV(PWH) and for reducing HIV incidence, which is the overarching goal of NHAS.1,3,4 However, several social determinants of health, including HIV-related stigma, discrimination, and housing instability, have been shown to affect outcomes across the HIV care continuum.5-7 These social determinants of health could deter PWH from even engaging in medical care in the first place.8 Social determinants of health are also associated with antiretroviral therapy (ART) adherence and, thus, maintaining viral suppression.5-7 A large percentage of PWH experience multiple co-occurring social and medical conditions that could complicate HIV care and treatment.9 For instance, a large percentage of people who experience housing instability also report issues with depression and anxiety or substance use.67 NHAS recognizes the role of these social determinants of health in achieving HIV care continuum outcomes and prioritizes reducing HIV-related stigma and discrimination and health inequities that might drive disparities in HIV outcomes.1

Establishing baseline assessments of viral suppression, HIV stigma, and homelessness among PWH, as well as other measures associated with these national indicators, is vital to understanding potential gaps in local HIV prevention programs and could inform interventions for improving progress in meeting national targets. Although national baseline estimates have previously been established, estimates at the jurisdictional level have not

previously been described to our knowledge. Also, baseline estimates have not been established for factors associated with these national indicators, including ART adherence, a strong determinant of viral suppression10; other forms of housing stability, often a precursor to homelessness7; and HIV health care discrimination, a form of enacted stigma that is associated with lower levels of HIV care engagement.11 Using national HIV surveillance data, we assessed geographic differences in reaching selected national HIV prevention targets related to viral suppression, homelessness, and HIV-related stigma among PWH, as well as key factors associated with these outcomes.

METHODS

We included data from 2 large national surveillance systems in our analysis: the National HIV Surveillance System (NHSS) and the Medical Monitoring Project (MMP). NHSS and MMP are conducted as a part of routine public health surveillance and are considered nonresearch.

NHSS collects demographic, clinical, and risk information on all adults and adolescents with diagnosed HIV infection in the United States. Data from NHSS are used to monitor national progress of several key national targets among persons with diagnosed HIV, including viral suppression1,12; for this study, we analyzed NHSS data reported for 2019.

MMP is a national surveillance system that collects annual, cross-sectional data to produce nationally and locally representative estimates of characteristics among adults with diagnosed HIV. Data from MMP are used to assess progress toward national targets for HIVrelated stigma and homelessness. MMP also collects data on ART adherence, other forms of housing instability, and HIV health care discrimination.

MMP uses a 2-stage methodology to obtain a national probability sample of adults with diagnosed HIV. Duringthe first stage, 16 US states and Puerto Rico were sampled from all US states, the District of Columbia, and Puerto Rico with probabilities proportional to size based on AIDS prevalence at the end of 2002. These jurisdictions represented more than 70% of people with diagnosed HIV in the United States by the end of2019,12,13 and 13 ofthe 16 states (81%) that report to MMP include high-burden jurisdictions that have been prioritized for intervention through the Ending the HIV Epidemic in the United States initiative.2,14 Duringthe second MMP samplingstage, simple random samples of adults with diagnosed HIV were selected annually from each sampled jurisdiction from NHSS, a national census of all adults and adolescents with diagnosed HIV.

The sampled areas were California (including the separately funded jurisdictions of Los Angeles County and San Francisco), Delaware, Florida, Georgia, Illinois (including Chicago), Indiana, Michigan, Mississippi, NewJersey, New York (including New York City), North Carolina, Oregon, Pennsylvania (including Philadelphia), Puerto Rico, Texas (including Houston), Virginia, and Washington State. The response rate was 100% at the first stage and ranged from 45% to 46% for the cycle years included in the analysis. More details on sampling methodology are described elsewhere.13

MMP data for the 2017-2019 cycles were collected during June of each cycle year through May ofthe following year. MMP staff conducted interviews of sampled participants to collect data on social determinants of health- including measures of housing instability, such as homelessness; HIVrelated stigma; and discrimination experienced in the HIV care setting- and ART dose adherence. For this analysis, we report measures of homelessness and ART dose adherence based on 2017-2019 data cycles. Because of changes made to the MMP questionnaire after 2017, forms of unstable housing other than homelessness, HIV-related stigma, and HIV health care discrimination could be reported using only the 2018-2019 data cycles.

Measures

For this analysis, viral suppression data reported to NHSS in 2019 were reported nationally (i.e., among all states with complete laboratory reporting) and for the 16 states and 1 territory participating in MMP. We do not report data for jurisdictions with incomplete laboratory reporting, including Pennsylvania, NewJersey, and Puerto Rico. For measures obtained from MMP data, we report weighted percentages and 95% confidence intervals. We report all measures nationally and by the 17 MMP reportingjurisdictions. We weighted MMP data to adjust for nonresponse and poststratified the data to known population totals by age, race/ ethnicity, and sex at birth from NHSS.

Regarding NHSS measures, for all PWH who received an HIV diagnosis by the end of 2018 and were alive at the end of 2019, we defined viral suppression as the most recent viral load test during 2019 being less than 200 copies per milliliter or undetectable.

Regarding MMP measures, participants reported the number of missed ART doses during the 30 days before the interview, and we categorized ART dose adherence as missing 1 or more doses versus none.

We defined homelessness as living on the street, in a shelter, in a singleroom-occupancy hotel, or in a car during the past 12 months. We defined other forms of unstable housing as being evicted, moving 2 or more times, or "doubling up" (defined as moving in with other people because of financial problems) in the past 12 months.

We assessed HIV-related stigma using a modified version of a 10-item Likert scale that Wright et al. developed and validated.15 We created a composite score ranging from 0 to 100, with 0 indicating no stigma and 100 indicating the highest stigma.5,15 The scale encompassed 4 domains, including personalized stigma during the past 12 months, current disclosure concerns, current negative self-image, and current perceived public attitudes about PWH. We captured HIV health care discrimination experienced during the past 12 months through 7 Likert scale questions that we adapted based on a previously validated scale, in which participants were asked how often a health care provider discriminated against the patient through the health care provider's actions in the HIV care setting.16 We categorized participants as experiencing HIV health care discrimination during the past 12 months if they answered rarely, about half the time, most of the time, or always (vs never) to any of the 7 health care discrimination questions.

Analytic Methods

For all measures included in the study, national and jurisdiction-level estimates were calculated. Of the measures included in this study, viral suppression at last test, homelessness, and HIVrelated stigma are indicators assessed for progress toward meeting national targets in NHAS. For these measures, we compared national and jurisdictionlevel estimates with the national targets to be achieved by 2025. In addition, we compared jurisdiction-level point estimates with the national estimate. The national target for viral suppression is 95%. For stigma, the national target is a 50% reduction in the 2018 national median score of 31.2 (15.6), and for homelessness, the national target is a 50% reduction in the 2017 national estimate of 9.1 % (4.6%).1

We compared jurisdiction-level point estimates with the national estimate for ART dose adherence, other forms of unstable housing, and HIV health care discrimination; these are not national indicators but have been shown to be associated with the target outcomes.

We conducted all analyses using SAS version 9.4 (SAS Institute, Cary, NC).

RESULTS

Nationally, 65.5% of people with diagnosed HIV were virally suppressed at last test (Figure 1). Viral suppression ranged from 53.9% (Mississippi) to 80.5% (Oregon); none of the reporting jurisdictions had reached the national target of 95% for 2025. Viral suppression was lowest in the Southern states Mississippi (53.9%) and Georgia (61.6%) and the Midwestern states Illinois (55.3%) and Indiana (60.2%).

Nationally, 56.2% of adults with diagnosed HIV were ART adherent over the last 30 days-a critical step for viral suppression. Point estimates for ART dose adherence ranged from 48.4% (Michigan) to 67.7% (Delaware; Figure 2).

Nationally, 9.3% of adults with diagnosed HIV experienced homelessness in the past 12 months; point estimates for homelessness ranged from 3.6% (Puerto Rico) to 12.4% (Michigan; Figure 3). Puerto Rico was the only jurisdiction for which the point estimate for homelessness reached the national target for homelessness of 4.6% among PWH in 2025.

Overall, 17.5% experienced other forms of unstable housing during the past 12 months; point estimates of unstable housing ranged from 8.6% (Puerto Rico) to 25.2% (Indiana; Figure A, available as a supplement to the online version of this article at http:// www.ajph.org). All 3 reportingjurisdictions in the Midwest (Illinois: 21.9%; Indiana: 25.2%; Michigan: 20.1%) had point estimates for other forms of unstable housing that were higher than the national estimate.

The national median score for HIVrelated stigma was 30.9, and ranged from 27.5 (Washington State) to 34.4

(Michigan; Figure 4). None of the reportingjurisdictions reached the national target of 15.6 for HIV-related stigma. Several jurisdictions had median point estimates for stigma that were higher than the national estimate, including Texas (33.8) and Virginia (33.4) from the reporting jurisdictions in the South, all 3 reporting jurisdictions in the Midwest (Illinois: 33.1; Indiana: 32.3; Michigan: 34.4), Pennsylvania (31.9), and Puerto Rico (34.0).
Nearly 1 in 4 (23.1 %) adults with diagnosed HIV experienced HIV health care discrimination; point estimates ranged from 7.1 % (Mississippi) to 29.8% (California; Figure B [available as a supplement to the online version ofthis article at http://www.ajph.org]). Point estimates for HIV health care discrimination were generally higher among reportingjurisdictions in the Midwest (Illinois: 28.1%; Indiana: 26.7%; Michigan: 29.6%).

DISCUSSION

To our knowledge, this is the first study to use representative data to assess geographic differences in reaching national targets related to viral suppression, homelessness, and HIVrelated stigma-and factors associated with these outcomes-used to assess progress toward reaching national HIV prevention and care goals. We demonstrated that HIV clinical outcomes and social determinants of health associated with adverse HIV clinical outcomes varied byjurisdiction. None ofthe reportingjurisdictions had achieved national 2025 targets for viral suppression or HIV stigma, and only 1 had achieved the national target for homelessness. Compared with national estimates, viral suppression was particularly low in manyjurisdictions in the Midwest and the South.
In addition, ART dose adherence point estimates were low in all 3 jurisdictions included in the Midwest. Known barriers to ART adherence and viral suppression (e.g., housing instability, HIV-related stigma, and HIV health care discrimination) were most highly prevalent among reportingjurisdictions in the Midwest. The estimate for HIVrelated stigma was high in Puerto Rico, and the estimate for HIV health care discrimination was high in California.
Patterns in national targets and factors associated with these targets, including HIV clinical outcomes and social determinants of health, varied substantially by state. Specifically, the percentage of PWH who were virally suppressed was lower than the national estimate (65.5%) in 4 of the 7 Southern states included in the analysis. Estimates of HIV stigma in all jurisdictions exceeded the national target, and estimates of homelessness in all but 1 jurisdiction exceeded the national target. Although levels of HIV-related stigma and homelessness were not above the national estimates for a majority of the Southern states included in the analysis, they were far above what is needed to meet the national targets for 2025. The included Midwestern states had low levels of viral suppression and high levels of other forms of unstable housing, HIV-related stigma, and HIV health care discrimination. Also, all 3 states included from the West had higher levels ofviral suppression and lower levels of HIV-related stigma than the national estimates. However, levels of homelessness and HIV health care discrimination were higher than national estimates, particularly in California. Given that HIV stigma and homelessness are strongly associated with negative HIV outcomes,5,6 these findings underscore the importance of addressing these social determinants of health among PWH across the nation, including in areas disproportionately affected by HIV.
Even within states, progress in meeting targets for national indicators-and important factors associated with these indicators-could vary locally based on HIV burden, availability of HIV care resources, and HIV care and treatment funding allocation. Furthermore, barriers to HIV care and treatment are highly localized and depend on one's environment and individual circumstances.17-19 Thus, each jurisdiction should work with its state and local partners to develop an approach that effectively addresses its own barriers to meeting the national targets.
There has been substantial progress in improving viral suppression among PWH nationwide, increasing from 43.4% in 2010 to 65.5% in 2019; however, there is much work to do to meet the national target of 95% by 20 25.20'21 Ensuring that PWH are ART adherent and have their care needs met, regardless of their individual circumstances, is important for meeting the national target for viral suppression. ART adherence is a primary predictor of viral suppression, yet national estimates for ART adherence are suboptimal; moreover, social determinants of health affect ART adherence.10 Health is a universal basic need for all humans, but health inequities related to a variety of outcomes persist.22 Given that disparities in HIV care and treatment outcomes by social determinants of health exist, addressing needs of disproportionately affected populations is critical for meeting national targets related to HIV outcomes and is a national priority.1

Factors such as HIV-related stigma and discrimination are substantial barriers to health care quality and access, particularly among younger persons, women, transgender persons, and racial/ethnic minorities.5,23-26 In addition, PWH who experience HIV-related stigma and HIV health care discrimination may be more likely to experience symptoms of depression or anxiety.5,27 A multipronged, status-neutral approach that includes patient-, provider-, and community-level interventions could be useful in addressing stigma experienced among PWH, not just related to people's HIV status but other factors as well, including racial/ethnic and gender identity. At the patient level, peer support groups that focus on discussing the negative effects of stigma and related coping mechanisms and that provide psychosocial support could be helpful. Social support is associated with positive mental health outcomes and ART adherence and may be particularly beneficial for those experiencing high levels of HIVrelated stigma.28-30 Other interventions, such as cognitive behavioral therapy, could help those with symptoms of depression or anxiety.31

At the provider level, provider training could focus on cultural and sexual health competency and include content on howto ascertain information on experienced stigma. This could be helpful in identifying and addressing stigma, as well as in understanding and addressing other challenges patients may be experiencing related to social determinants of health, such as unstable housing. Incorporating antistigmatizing, antidiscriminatory policies in health care settings can provide a safe space for HIV patients to seek care. However, such policy changes are only a first step in the needed shift in the cultural paradigm of embracing diversity and eradicating systemic racism and other forms of discrimination, such as that based on HIV status or gender identity. Finally, at the community level, the Centers for Disease Control and Prevention's Let's Stop HIV Together campaign could help increase awareness of HIV-related stigma and the role of all people in our community in stopping HIV-related stigma.32

PWH face a number of challenges related to difficult life circumstances, including housing instability. Nationally, almost 1 in 10 adults with diagnosed HIV have experienced homelessness,14 compared with less than 1% of all people in the United States,3,4 and nearly 1 in 5 experienced other forms of unstable housing overthe past year.14 In addition, numerous HIV outbreaks across the United States have involved vulnerable populations, including unstably housed persons.33-36 Among adults with diagnosed HIV, homelessness disproportionately affects transgender persons, racial and ethnic minorities, people living at or below the poverty line, and people with a history of substance use, and homelessness is associated with adverse HIV clinical outcomes.6 Ryan White HIV/AIDS program-funded facilities offer critically important support services for PWH, such as housing assistance.37

The Housing Opportunities for Persons With AIDS program also offers critical housing assistance services to those in need. However, beneficiaries of Housing Opportunities for Persons With AIDS funds must be persons living at or below 80% of their area's median income,38 potentially excluding some persons in need of services who are unstably housed. In fact, more than 1 in 6 adults with diagnosed HIV received housing assistance during the past year, but more than 1 in 10 people reported having an unmet need for these services.14 Given that other forms of housing instability could be a precursor to becoming homeless and are also associated with negative HIV clinical outcomes,7,39 expanding Housing Opportunities for Persons With AIDS funds and eligibility criteria could help address unmet needs related to housing assistance.

Housing status should also be assessed routinely at HIV care visits and through case managers and patient navigators so that referrals for housing assistance can be provided on the spot as needed. Expanding components ofthe Ryan White HIV/AIDS program's comprehensive care model to other, non-Ryan White HIV/AIDS program-funded care settings, especially with regard to increasing access to patient navigation and case management services, could help in ensuring that all needs of PWH are met.

Limitations

This analysis has several limitations. First, we could not assess viral suppression using NHSS data for New Jersey, Pennsylvania, or Puerto Rico because of incomplete laboratory reporting. Also, data on viral suppression for Mississippi should be interpreted with caution because of incomplete ascertainment of deaths that occurred during 2019.

Second, ART dose adherence and social determinants of health assessed through MMP were based on selfreport

and are subject to misclassification. Although MMP response rates were suboptimal, we adjusted results for nonresponse and poststratified estimates to known population totals by age, race/ethnicity, and sex at birth from the NHSS using established, standard methodology.13 Assessment of state-level estimates in specific regions using MMP data should be interpreted with caution, as MMP data are not designed to provide regionally representative estimates. Because we included jurisdictional estimates for all measures in the calculation of the national estimates, we could not make statistical comparisons.

Finally, data from 2020 to 2021 were not included in this analysis, which could have influenced our findings because of worsening socioeconomic conditions and challenges in seeking HIV care during the COVID-19 pandemic.39-41 However, these results still underscore the importance of monitoring national and local status in meeting national targets over time.

Public Health Implications

Our findings demonstrate that jurisdictions across the country have room for improvement in reaching the 2025 national targets for viral suppression and social determinants of health that are critical for achieving the goals of NHAS, including homelessness and HIV stigma. In addition, improving other factors associated with these national indicators-including ART adherence, other forms of housing instability, and HIV health care discrimination-could help in achieving these targets and meeting national prevention and care goals. Jurisdictions should work with their state and local partners to identify the distribution of social determinants of health among PWH, including the overlap of cooccurring social and medical conditions, in their local service areas. Doing so will help in developing a tailored approach that effectively addresses local barriers to meeting national targets that are vital for ending the HIV epidemic in the United States. ÂfPU

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S.Dasgupta conceptualized and designed the study and analysis and led the writing. Y. Tie led data analysis. Y. Tie, L. Beer, S.J. Lyons, R. L. Shouse, and N. Harris critically reviewed the article. L. Beer, R. L. Shouse, and N. Harris contributed to study design.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

HUMAN PARTICIPANT PROTECTION

The NationalHIV Surveillance System and MMP are conducted as part of routine public health surveillance and are considered nonresearch. For MMP, participating jurisdictions obtained institutional review board approval as

needed; verbal or written informed consent was obtained from all participants.

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Killing Vaping and Americans

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ABSTRACT (ENGLISH)

In this follow-up to our 2020 article,1 we find our predictions that the US Food and Drug Administration (FDA) approval standards for vaping products would decimate the market for a safer alternative to combustible tobacco cigarettes and hand control of what remains to Big Tobacco have come true, to the detriment of public health.

FULL TEXT

In this follow-up to our 2020 article,1 we find our predictions that the US Food and Drug Administration (FDA) approval standards for vaping products would decimate the market for a safer alternative to combustible tobacco cigarettes and hand control of what remains to Big Tobacco have come true, to the detriment of public health.

In our solicited earlier article "Placing the Legal Vape Market in the Hands of Big Tobacco," we stated:

Given the lack of clear FDA standards for approval, it is possible that no e-cigarette or vapor product will ultimately survive the "vapocalypse." Alternatively, the legal vape market will be left overwhelmingly in the hands of Big Tobacco companies that can afford to undertake the costly and uncertain FDA premarket application process yet paradoxically have the least interest in reducing cigarette smoking.1(p781)

What we predicted and feared is now coming to pass. This is an enormous public health catastrophe brought on by flawed legislation put in the hands of people evidently unable to implement risk-proportionate regulation, leaving lethal cigarettes, and their producers, protected from low-risk disruptive technology. This has sacrificed public health principles of risk reduction and citizen empowerment and perpetuates not only the deadly epidemic of cigarettes but the very Big Tobacco companies that many proponents of this approach profess to oppose.

As of late March 2022, the FDA had issued marketing denial orders for more than 1 million e-cigarettes, vapes, and other electronic nicotine delivery system products.2 These products represented a viable approach to the safer supply of nicotine, consistent with public health efforts to promote safer supply of both licit and illicit products. Their rejection was not premised on a finding that any of them were something other than a massively less hazardous alternative to cigarette smoking. Rather, it was simply that they could not surmount the byzantine and cripplingly expensive barriers the FDA put between them and the millions of Americans who will otherwise continue to inhale toxic smoke to get nicotine, and continue to die therefrom at a rate of 1300 per day.3

Thus far, the rate of FDA denial of marketing authorization for e-cigarettes that had been on the market is more than 99.9%. The handful of e-cigarettes approved by the FDA to date are tobacco flavored (which are anathema to most people who have substituted vaping for cigarettes) and among the least popular devices on the market. They are also owned by Big Tobacco companies R.J. Reynolds and Japan Tobacco.

The FDA has a history of facilitating market transitions to less hazardous options for foods and drugs. Health at the national, and indeed global, level is much the better for this. There were efforts for decades to get FDA oversight of the cigarette industry in the hope that the agency could be the adversary needed to force fundamental changes, much as it has historically done with everything from the makers of unsanitary food to the peddlers of snake oil patent medicines.4 To have the same agency instead grandfather the lethal incumbent products-combustible tobacco cigarettes-and place insurmountable barriers in the way of the safer products that could displace them stands that history on its head.

All is not lost. There are now numerous lawsuits against the FDA from vape makers that will otherwise be put out of business, as they do not have deadly cigarettes to fall back on. There are also efforts by consumers to find workarounds, including possibly illicit supplies of consumer-acceptable products. But we are in the disorienting position of purveyors of safer alternatives to lethal cigarettes, and Americans simply seeking agency over their own health, battling the FDA rather than being protected by it. Indeed, we seem thus far to have seen the agency's approach to the cigarette companies confirm a well-known aphorism ofthe late historian Robert Conquest: "The simplest way to explain the behaviour of any bureaucratic organisation isto assume that it is controlled by a cabal of its enemies."5

Sidebar

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D. Sweanor wrote the initial draft of the article. A. R. Houston revised the draft. Both authors conceptualized and finalized the article.
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Rapid Uptake of Testing for Chlamydia, Gonorrhea, and HIV From an Online Platform, April–October 2020

Melendez, Johan H, PhD; Gilliams, Elizabeth A, MD MSc; Yu, Tong, ScM; Williford, Sarah L, MPH; Armington, Gretchen S, MA; Silver, Barbara, MBA; Huebner, Adam, MPH; Gaydos, Charlotte A, DrPH MPH MS; Manabe, Yukari C, MD; Hamill, Matthew M, MBChB PhD

ABSTRACT (ENGLISH)

The Baltimore City Health Department (Baltimore, MD) promoted IWantTheKIt for chlamydia, gonorrhea, and HIV testing to city residents and clinic patients when COVID-19 restricted in-person clinic services. From April to October 2020, monthly online IWantTheKit orders increased by 645%. A high prevalence of chlamydia and gonorrhea was detected, and 96% of users who tested positive for chlamydia and gonorrhea were successfully contacted for

treatment. Uptake by Baltimore City Health Department priority populations and excellent treatment linkage demonstrated how a public health-academic partnership successfully addressed a service gap during the pandemic. (Am J Public Health. 2022;112(7):985-989. https:// doi.org/10.2105/AJPH.2022.306835)

FULL TEXT

Headnote

The Baltimore City Health Department (Baltimore, MD) promoted IWantTheKIt for chlamydia, gonorrhea, and HIV testing to city residents and clinic patients when COVID-19 restricted in-person clinic services. From April to October 2020, monthly online IWantTheKit orders increased by 645%. A high prevalence of chlamydia and gonorrhea was detected, and 96% of users who tested positive for chlamydia and gonorrhea were successfully contacted for treatment. Uptake by Baltimore City Health Department priority populations and excellent treatment linkage demonstrated how a public health-academic partnership successfully addressed a service gap during the pandemic. (Am J Public Health. 2022;112(7):985-989. https:// doi.org/10.2105/AJPH.2022.306835)

Rates of most reportable sexually transmitted infections (STIs) rose in 2019 for the sixth consecutive year. At the onset of the COVID-19 pandemic, sexual health services faced reduced capacity owing to socialdistancing restrictions and redeployment to COVID-19 efforts. A public health-academic partnership was formed between the Baltimore City Health Department (Baltimore, MD) and IWantTheKit (IWTK), a Johns Hopkins University online public health program, to expand availability of at-home testing for chlamydia, gonorrhea, and HIV duringthe COVID-19 pandemic.

INTERVENTION AND IMPLEMENTATION

In response to limited in-person visits at the Baltimore City Health Department (BCHD) sexual health clinics in Maryland duringthe COVID-19 pandemic, BCHD launched telemedicine protocols, developed promotional material, used electronic result reporting, and referred sexual health clinic patients to IWTK for STI (i.e., chlamydia, gonorrhea, and HIV) testing (Figure A, available as a supplement to the online version of this article at http://www.ajph.org). IWTK, an online public health program founded in 2004, provides free and confidential mail-in STI testing to residents of Maryland, Alaska, and Arizona.1,2 Users order kits online, mail home-collected specimens for chlamydia and gonorrhea testing, and obtain results on the IWTK Web site, which are also sent to the user's preselected clinic for treatment, if positive. The home collection testing kit consisted of (1) swabs (based on user request) for collection of penile or vaginal, rectal, or oropharyngeal specimens for detection of Chlamydia trachomatis and Neisseria gonorrhoeae; (2) instructions for selfcollection of specimens; and (3) a preaddressed, postage-paid mailer to return specimens to the laboratory. The HIV home-testing kit included the US Food and Drug Administration-approved OraQuick kit (Orasure Technologies, Bethlehem, PA), instructions for use, information on posttest counseling, and resources for linkage to HIV prevention and treatment services at BCHD sexual health clinics and throughout Maryland. Testing for C. trachomatis and N. gonorrhoeae was performed using the Food and Drug Administration-cleared Aptima Combo 2 C. trachomatis and N. gonorrhoeae assays (Hologic, San Diego, CA) in a laboratory at Johns Hopkins University, which was certified by Clinical Laboratory Improvement Amendments and the College of American Pathologists.

PLACE, TIME, AND PERSONS

In this report, we focus on IWTK users with Baltimore City zip codes and the subset of IWTK users who preselected BCHD sexual health clinics for treatment. The 2 BCHD sexual health clinics typically serve a predominantly Black, male, heterosexual population younger than 35 years. Before the COVID-19 pandemic began, the clinics offered walk-in testing and treatment of STIs, HIV, and hepatitis C, as well as HIV preexposure prophylaxis. In March 2020, in-person visits were limited to appointment-only management of syphilis, newly diagnosed HIV, and urgent HIV primary care issues; all other interactions were via telehealth. BCHD promoted IWTK testing to sexual health clinic clients with information provided over the telephone and broadly to city residents via BCHD's social media program. We defined data collected from April through October 2020 as during COVID-19 and data collected from September 2019 through March 2020 as before COVID-19. We compared these 2 data sets.

PURPOSE

Rates of STIs are rising steeply in the United States. In 2019, the Centers for Disease Control and Prevention (CDC) reported 1.8 million cases of C. trachomatis and 616 392 cases of N. gonorrhoeae3 Early in the COVID-19 pandemic, many sexual health clinics were limited, as the public health workforce was redeployed to assist with the COVID-19 response.4,5 This reduction in service reduced opportunities for STI or HIV testing, diagnosis, and partner services. To fill this gap, innovative STI and HIV testing approaches that did not require in-person visits were necessary. Ordering home collection kits online is a convenient, private, safe, and cost-effective approach to STI testing6; minimizes COVID-19 exposure; and was recommended by the CDC during the pandemic.7 Besides IWTK, other programs provide online ordering for STI testing using home-collected samples2,8; these offerings expanded during the pandemic.9-11

EVALUATION AND ADVERSE EFFECTS

During the analysis period, Baltimore City residents placed 1670 IWTK orders; users' demographic details are presented in Table 1. Before COVID-19, Baltimore residents requested an average of 29.7 STI testing kits per month, increasing to 221.3 ($P < .001$) during COVID-19 (Figure B, available as a supplement to the online version of this article at http://www.ajph.org). Overall, there was a 645% increase in the monthly average of IWTK testing kits requested during compared with before COVID-19. Average monthly HIV test kit orders increased from 22.6 before COVID-19 to 146.3 during COVID-19 (Welch test; $P < .001$). BCHD's staff and Web site referred 75% of the users to IWTK; friends or partners, social media, and other providers or student health centers referred the remaining users. During COVID-19, Black- and male-identifying users increased significantly, along with users younger than 17 years and aged 55 years or older (Table 1). Overall, 67.2% (131/195) and 62.0% (915/1475) of users returned testing kits before and during COVID-19, respectively. These figures are consistent with the historical return rates for IWTK.1 During COVID-19, IWTK performed 1326 C. trachomatis and N. gonorrhoeae tests from Baltimore City residents. Of these, 2.3% and 5.8% were positive for C. trachomatis and N. gonorrhoeae, respectively, representing an increased positivity rate during compared with before COVID-19 (Table 2). During COVID-19, rectal samples had the highest combined positivity rate for C. trachomatis and N. gonorrhoeae (12.4%), followed by genital (8.0%) and oropharyngeal samples (3.2%).

We reviewed BCHD's electronic medical records for documentation of treatment linkage for the subset of IWTK users who preselected BCHD sexual health clinics as their treatment clinic (BCHD-IWTK users; Table A, available as a supplement to the online version of this article at http://www.ajph.org). Before COVID-19 compared with during COVID-19, Black- and male-identifying BCHD-IWTK users increased. Treatment of C. trachomatis- or N. gonorrhoeae-positive BCHD-IWTK users increased from 75% (6/8) before COVID-19 to 96% (98/102) during COVID-19; 87% (85/98) were managed via telemedicine, 9% (9/98) reported they had received treatment elsewhere, and 4% (4/98) received treatment in person at the BCHD sexual health clinics (data not shown). Such improvements resulted from streamlining referral fortesting and treatment verification processes.

This evaluation has several limitations. IWTK did not collect gender of sex partners and Hispanic ethnicity data during the analysis period. To provide the lowest barrier service, IWTK did not collect symptom data; we were unable to measure the effect of symptoms on IWTK use. We were unable to verify the proportion of C. trachomatis- or N. gonorrhoeae-positive users prescribed antibiotics who collected and completed their medication or whether user-initiated partner notification took place following a positive IWTK C. trachomatis or N. gonorrhoeae result. The reduction of clinic staff during COVID-19 prevented the recording of the total number of patients BCHD referred to IWTK; therefore, we were unable to examine the cascade from referral to successful ordering. Additionally, the proportion of individuals who requested HIV home-testing kits who performed the test, positivity rate, or whether they sought linkage to care was unknown. Further research is needed on cost effectiveness and reasons kits go unreturned to mitigate cost and missed testing opportunities. Lastly, syphilis testing was not provided during the analysis period; laboratory-based validations are ongoing to establish this.

SUSTAINABILITY

The CDC's Endingthe HIV Epidemic initiative12 funded the development of the IWTK-BCHD partnership in 2019 to

increase access to C. trachomatis, N. gonorrhoeae, and HIV testing and continues to support its expansion. The continued success ofthis partnership, however, depends on future CDC and other funding sources. Ability to bill testing costs to insurance or Medicaid would support sustainability ofthis public health program. The BCHD sexual health clinic IWTK referral protocols initially catalyzed the pandemic-driven increase in IWTK orders, but the majority of the current IWTK users are from non-BCHD referrals, suggesting the success of promotion strategies beyond sexual health clinic users.

PUBLIC HEALTH SIGNIFICANCE

Home collection for mail-in C. trachomatis and N. gonorrhoeae and HIV home testing, in conjunction with results management for sexual health clinic clients, provided an alternative for Baltimore City residents during COVID-19. The majority of IWTK users during COVID-19 were male, Black, and aged 24 to 35 years, demonstrating that this public health-academic partnership reached BCHD's priority populations. The successful expansion of IWTK in Baltimore supports mail-in testing as an important adjunctive tool to provide access when in-person testing is not feasible. Additional innovations in STI service delivery are required to better meet the needs of diverse populations, including readily accessible self-collection drop boxes to improve convenience and mitigate mail-based delays. At-home, mail-in testing partially filled a pandemic-imposed gap in STI testing and promises to be part of the service landscape during and after the COVID-19 pandemic. >4JPU

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J. H. Melendez collected the data and performed the analysis. J. H. Melendez and E. A. Gilliams are co-first authors. J. H. Melendez, E. A. Gilliams, and M. M. Hamill conceptualized and designed the analysis and wrote the article. E. A. Gilliams conducted the chart review. T. Yu and S. L. Williford performed data analysis and revised the article. G. S. Armington and B. Silver coordinated data collection. A. Huebner facilitated the implementation of the public health-academic partnership initiative. A. Huebner, C.A. Gaydos, and Y.C. Manabe critically reviewed the article. C.A. Gaydos and Y.C. Manabe provided intellectualcontent.

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The Epidemic During the Pandemic: Assessing the Federal Drug Administration's Efforts to Curb Youth Smoking After Passage of HR2339 by Congress

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ABSTRACT (ENGLISH)

Despite decades of efforts to reduce the use of tobacco products in the United States, tobacco use remains the leading preventable cause of disability, disease, and death.1 Most adults report starting tobacco use in their teens.2 In January 2020, the US Congress passed the Protecting American Lungs and Reversing the Youth Tobacco Epidemic Act (HR2339). The act sought to improve Food and Drug Administration (FDA) regulation ofthe marketing, sale, makeup, safety, and study of electronic nicotine delivery systems (ENDSs).

FULL TEXT

Despite decades of efforts to reduce the use of tobacco products in the United States, tobacco use remains the leading preventable cause of disability, disease, and death.1 Most adults report starting tobacco use in their teens.2 In January 2020, the US Congress passed the Protecting American Lungs and Reversing the Youth Tobacco Epidemic Act (HR2339). The act sought to improve Food and Drug Administration (FDA) regulation ofthe marketing, sale, makeup, safety, and study of electronic nicotine delivery systems (ENDSs).

Since the passage ofthe act, the United States has made some progress in limiting youth access to flavored ENDSs. For example, the FDA has reviewed and denied many applications requesting authorization for ENDSs and restricted the sale of ENDSs already on the market to protect public health. Also, President Biden appointed FDA commissioner Robert Califf, who actively supports ENDS regulation.3 Under his leadership, the FDA recently proposed prohibiting menthol flavoring in cigarettes and all flavoring (excluding tobacco) in cigars.4

However, youth smoking remains high. The 2021 National Youth Tobacco Survey estimated that more than 2.5 million middle and high school students use tobacco products, identifying e-cigarettes as the most commonly used. Respondents who identified themselves as transgender (18.9%) or lesbian, gay, or bisexual (14.2%) and those experiencing psychological distress (14.2%) reported higher rates of tobacco use than their counterparts. Factors influencing youth tobacco use included flavoring in tobacco products, product marketing and access, and misconceptions about health risks.5

Studies also show that tobacco industry profits from the sale of ENDSs have increased since the passage of HR2339 and through the COVID-19 pandemic. The CDC Foundation reported that between February 2020 and December 2021, total e-cigarette product sales increased by more than 30%, with more than 290 million units sold. Non-tobacco-flavored e-cigarette product sales increased by more than 60%, and disposable e-cigarette product sales increased by more than 173%. This has increased the ENDS industry market share by close to 90%, and sales of e-cigarette products with menthol-flavored prefilled cartridges have increased by close to 40%.6 Increased tobacco industry marketing, promotional price discounts, stress from the COVID-19 pandemic, and stay-at-home policies may have contributed to higher profits.7

Although there has been progress in reducing youth smoking, more can be done to prevent and reduce the use of tobacco products. The FDA should regulate the sale and nicotine levels of prefilled cartridges, e-liquids, and singleuse disposable products; finalize the prohibition of menthol flavoring; and do the same for tobacco flavoring. The FDA should also rule on pending applications for the sale of e-cigarette products that represent more than 75% ofthe e-cigarette market. Public health advocates must quickly respond to tobacco industry marketing tactics by debunking misleading campaigns promoting new synthetic nicotine and "tobacco-free" products attempting to circumvent regulation.8 Along with increases in taxes on ENDSs and enactment of policies restricting the sale of flavored products at the local level, such actions can help protect young people from the harms caused by tobacco products and help discourage them from ever starting at all. ,4jPH

Sidebar

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to report.

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Erratum In: "The Tobacco Industry's Renewed Assault on Science: A Call for a United Public Health Response"

Anonymous

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A sentence mistated howJUUL cited its press release. On page 389, the third sentence in the top paragraph of column 1 should read:
JUUL, for example, presented findings at the 2021 SRNT conference and then promoted these findings in a press release that referenced their commitment to the Premarket Tobacco Product Application process. ÂfPU
This change does not affect the paper's conclusions.
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Confronting and Ending Food Insecurity During and Beyond the Pandemic: A Public Health of

Consequence, July 2022

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ABSTRACT (ENGLISH)

JPH provides a robust evidence base that describes how economic crises, in both the past and the present, exacerbate deep-rooted social and structural vulnerabilities that fuel food insecurity and undermine population health. In short, we have substantial information across multiple disciplines on the drivers and consequences of food insecurity. The issue before us now is how to deploy this evidence to build better integrated, more effective, and more sustainable interventions that end food insecurity. The COVID-19 pandemic has served as a catalyst for implementing new interventions and revamping already tested interventions to improve population-level health outcomes driven by food insecurity. In this issue of AJPH, we present a field report describing an intervention tackling food insecurity in rural communities. Importantly, this report highlights challenges to intervention implementation during the pandemic and efforts to overcome these challenges. Such information may provide useful lessons in how to close the gap in food insecurity for vulnerable populations and promote consequential public health practices moving forward.

FULL TEXT

JPH provides a robust evidence base that describes how economic crises, in both the past and the present, exacerbate deep-rooted social and structural vulnerabilities that fuel food insecurity and undermine population health. In short, we have substantial information across multiple disciplines on the drivers and consequences of food insecurity. The issue before us now is how to deploy this evidence to build better integrated, more effective, and more sustainable interventions that end food insecurity. The COVID-19 pandemic has served as a catalyst for implementing new interventions and revamping already tested interventions to improve population-level health outcomes driven by food insecurity. In this issue of AJPH, we present a field report describing an intervention tackling food insecurity in rural communities. Importantly, this report highlights challenges to intervention implementation during the pandemic and efforts to overcome these challenges. Such information may provide useful lessons in how to close the gap in food insecurity for vulnerable populations and promote consequential public health practices moving forward.

FOOD INSECURITY DURING THE PANDEMIC

The current economic crisis, driven by the COVID-19 pandemic, has substantially worsened food insecurity among the most vulnerable in our population. This increase is especially troubling, as it follows a period when we observed a steady decline in food insecurity in the United States. According to the US Department of Agriculture's Economic Research Service, food insecurity among US households with children increased from 13.6% in 2019 to 14.8% in 2020, and this increase was greater in communities of color.1 For example, Dubowitz et al. found that low-income African Americans residing in food desert neighborhoods experienced greater increases in food insecurity between 2018 and 2020, from 20.7% to 36.9%, compared with the general population.2

The impact of food insecurity on health care utilization during the pandemic is equally disturbing. Bertoldo et al. reported that among respondents reporting food insecurity, 27.4% delayed or skipped medical care. In addition, non-Hispanic Black, Hispanic, and low-income adults were more likely to forego medical care during the COVID pandemic in response to food insecurity.3 Without intervention, the consequences of food insecurity, both in the short and long terms, will continue to wreak havoc on the physical and mental health and well-being of socially and

structurally disadvantaged communities.

FOOD INSECURITY IN RURAL AMERICA

In the United States, people living in rural communities are more likely to experience food insecurity than are those living in metropolitan areas (https://bit.ly/37tqCXa). This disparity in food security is one among many structural disadvantages-including higher rates of poverty, lower access to health care, greater reliance on Medicaid and Medicare, and higher rates of chronic comorbid conditions- driving lower life expectancy among rural Americans (https://bit.ly/3Miio2E). Access plays a major role in food insecurity in rural areas. In particular, the lower likelihood of large supermarkets within reasonable driving distances often translates to a greater reliance on smaller convenience stores, which are less likely to carry fresh and affordably priced produce and healthy food options.

Yet access alone is an insufficient indicator of food insecurity. Work by Jernigan et al. among Native Americans and American Indians in rural Oklahoma underscores how we must think broadly about the drivers of food insecurity.4 In this study, Jernigan et al. found that among surveyed members of the Chickasaw Nation and the Choctaw Nation of Oklahoma, 56% reported inadequate food quantity and 62% reported inadequate food quality. These findings serve as an important reminder of the need to include culturally appropriate measures of food quality in surveys and food procuring and preparation practices in interventions that are attuned to the local and cultural context.

REDUCING FOOD INSECURITY

In this issue of AJPH, Gordon et al. (p. 975) describe the implementation of a locally tailored version of the Wholesome Wave (https://www.wholesomewave.org) intervention. Designed to reduce food insecurity and promote healthy food consumption, the intervention specifically recruited adults with high-risk diabetes receiving care at federally qualified health centers (FQHCs) in rural Idaho and rural Oregon.

Participants were provided produce prescription vouchers to purchase fresh fruit and other produce at neighborhood grocery stores or mobile farmers markets at the clinics. In addition, access to a nutritionist, behavioral health counselor, and pharmacist was available at their local FQHCs. However, as the pandemic progressed, social distancing and shutdown requirements minimized access to these support services. And the requirement to redeem produce prescriptions in person created an additional barrier to fresh produce procurement for participants following stay-at-home mandates. Added to these barriers, financial and workforce resource constraints at the facility and provider levels precluded providers' ability to transition to virtual sessions. Despite the layering of pandemicrelated burdens on an already complex set of social and structural disadvantages, food insecure patients were more likely to purchase healthy produce and see better outcomes in diabetes-related indicators.

Although the findings indicate that the program was successful despite the numerous challenges participants and staff faced, the article offers valuable lessons learned for implementing and maintaining such programs in the face of future crises. Sustaining a critical program like this requires stable and consistent funding for produce prescription vouchers as well as adequate resources for FQHCs. FQHCs serve as a lifeline for primary care in many rural communities, where hospitals have shuttered or are simply too far away from residents. Ensuring that FQHCs are able to maintain staff and have the resources to pivot to virtual coaching and education sessions as needed will facilitate long-term success, whether in times of crisis or not. Finally, supporting local farmers markets that accept produce vouchers will, in addition to increasing access to food banks and mobile pantries for older adults and individuals with limited mobility, enable local communities to meet and sustain local needs in providing healthy produce. And these efforts will, in turn, increase access to quantity as well as quality of healthier and culturally tailored food options.

CONCLUSIONS

"For decades, the public health community has been discussing the unfavorable impact of the social determinants of health-including economic and food insecurity-on chronic disease prevalence and management" (Gordon et al., p. 978).

Indeed, despite lots of talk, the action needed to scale up evidence-based and effective interventions to end food insecurity remains uneven and inadequately funded. As Wolfson and Leung discuss, a number of stopgap measures were implemented to provide acute relief during the pandemic and augment federal programs such as the

Supplemental Nutrition Assistance Program and the Special Supplemental Nutrition Program for Women, Infants, and Children.5 Ending food insecurity will require more action. We need long-term, comprehensive, and integrated programs that provide food security to the most vulnerable- individuals with chronic conditions; families living in poverty; children, older adults, and individuals who face social and structural vulnerabilities-to end hunger and reduce health disparities. Long-term support and scale-up of local programs that are shown to be effective are the investments we must prioritize to ensure food security and promote a public health of consequence. Л1РИ

Sidebar

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DETAILS

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The Case Against Flavors in E-Cigarettes Is Stronger Than Ever

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ABSTRACT (ENGLISH)

In my earlier AJPH commentary, I expressed concern about the failure of the US Food and Drug Administration to ban flavors in e-cigarettes.1 Subsequent research has strengthened my concerns about the health effects of flavorings. There are many thousands of flavors in use, and it is necessary to test them in pure form as well as their combustion products-which can include a number of known toxins, in particular aldehydes-and interactions between them.2

Turning to the use of flavors to attract new users, especially adolescents, a growing body of work has examined what is termed "abuse liability," which is measured by asking users just after using a product about their level of satisfaction with it and whether they would like more. A recent systematic review has brought this evidence together.3 In an analysis of 31 epidemiological studies that examined responses to flavors in e-cigarettes, Gades et al. concluded, "Non-tobacco flavors are highly valued and increase the abuse potential and appeal of e-cigarettes."3(p6) This finding received some support from the five animal studies reviewed-which Gades et al. concluded "suggest that sweetness and cooling flavors elicit rewardrelated behaviors and neuroplasticity on their own, as well as increase the rewarding properties of nicotine"3(p6)- and from the 16 experimental studies-from which the authors concluded, "Sweet and cooling flavors had higher appeal and abuse potential compared to tobacco-flavor."3(p6)

FULL TEXT

In my earlier AJPH commentary, I expressed concern about the failure of the US Food and Drug Administration to ban flavors in e-cigarettes.1 Subsequent research has strengthened my concerns about the health effects of flavorings. There are many thousands of flavors in use, and it is necessary to test them in pure form as well as their combustion products-which can include a number of known toxins, in particular aldehydes-and interactions between them.2

Turning to the use of flavors to attract new users, especially adolescents, a growing body of work has examined what is termed "abuse liability," which is measured by asking users just after using a product about their level of satisfaction with it and whether they would like more. A recent systematic review has brought this evidence together.3 In an analysis of 31 epidemiological studies that examined responses to flavors in e-cigarettes, Gades et al. concluded, "Non-tobacco flavors are highly valued and increase the abuse potential and appeal of e-cigarettes."3(p6) This finding received some support from the five animal studies reviewed-which Gades et al. concluded "suggest that sweetness and cooling flavors elicit rewardrelated behaviors and neuroplasticity on their own, as well as increase the rewarding properties of nicotine"3(p6)- and from the 16 experimental studies-from which the authors concluded, "Sweet and cooling flavors had higher appeal and abuse potential compared to tobacco-flavor."3(p6)

Some researchers, including Gades et al., may see these results as encouraging if flavorings reduce smoking initiation or increase quitting. Here, too, there is now considerable evidence of problems, most recently summarized in an Australian National University report that can be considered the state of the art on e-cigarettes.4 For this report, Banks et al. drew on three previous systematic reviews, which they topped up with a further 12 studies. From the subsequent meta-analysis, Banks et al. concluded that those exposed to e-cigarettes were about three times as likely to take up smoking combustible cigarettes.

Banks et al. also examined e-cigarette use and relapse in those who had quit combustible cigarettes, and, although only three studies were included, they too showed an increased risk among e-cigarette users. Finally, noting that

most evidence cited in support of e-cigarettes as quitting aids is from studies that are part of a clinical package that includes supervision and support, Banks et al. concluded, "There is insufficient evidence that nicotine e-cigarettes are efficacious outside the clinical setting."4(p272) Importantly, other research has concluded that, when used as a consumer product, e-cigarettes reduce the probability of quitting.5 In summary, promotion of e-cigarettes as consumer products that can reduce smoking is not supported by evidence, so any measure, such as a ban on flavors, that reduces their abuse liability is desirable from a public health perspective.

Inevitably, despite this evidence, e-cigarette advocates will argue that banning flavors will have undesirable consequences, such as increasing smoking. Fortunately, we have the experience of San Francisco, California, which implemented a ban on flavors in all tobacco products in January 2019, although penalties were delayed until April. Gammon et al. compared sales oftobacco products, including e-cigarettes, in San Francisco and two other California cities-San Jose and San Diego-that did not implement a ban.6 As intended, sales of flavored products fell dramatically, by 96%, in San Francisco, whereas there was no change in San Jose and a 10% fall in San Diego. However, crucially, there was no evidence of substitution of flavored products. Total tobacco sales fell by 25% in San Francisco, more than in the other two cities. This included a 23% decrease in sales of combustible cigarettes. In summary, two years on, my concerns seem to have been confirmed.

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CONFLICTS OF INTEREST

The author is on record as having strongly criticized the manufacturers of e-cigarettes and the organizations they fund, such as the Foundation for a Smoke-Free World, a position he continues to hold.

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DETAILS

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Connecting Environmental Injustice for Lesbian, Gay, Bisexual, and Transgender Populations With Neighborhood Health Equity Research

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FULL TEXT

We read with enthusiasm Goldsmith and Bell's expert review and recommendations for queering environmental justice in the January 2022 issue of AJPH.1 We second their call for work on spatial patterning of lesbian, gay, bisexual, and transgender (LGBT) lives and environmental justice. We also write to suggest that (1) there are more data available in this area than their review suggests, (2) there is room for explicitly considering corporate determinants of health in conceptual models of LGBT environmental justice, and (3) while the use of samesex couples as a proxy for LGBT residential concentration is imperfect, efforts assessing its use are available.

First, as researchers work to fill these gaps, we would like to call attention to previous work that used a conceptual framework based in geography2 and health equity3 to systematically review neighborhood and regional characteristics correlated with neighborhood and regional sexual minority concentration.4 This review, which was published in 2018, is now outdated, but it identified 51 studies examining the location of lesbian, gay, and bisexual populations and found 132 reported relationships between neighborhood concentration and neighborhood or regional characteristics related to health. As authors of the systematic review, we were surprised by the wide range of disciplines this work is spread across. While there is undoubtedly a need to update this systematic review given its age, we hope researchers working in the burgeoning intersection of environmental justice and LGBT health will be able to leverage the interdisciplinary literature that already exists and has been systematically documented.

Second, future research should consider the areas of synergy and the gaps between the environmental justice conceptual model adapted and proposed by Goldsmith and Bell and models derived from neighborhood health equity and neighborhood effects research, such as those used in the review mentioned previously. In our view, while there are many similarities, economic actors such as tobacco retailers and tobacco manufacturers may play a critical role in perpetuating environmental injustices5 and highlight the need to explicitly include corporate determinants of health in efforts to promote equity.

Third, regarding measurement, Goldsmith and Bell rightly note the limitation of same-sex partnership data, and we hope that researchers working in this space will leverage existing research conducted in Sweden6 and the United States7 to empirically validate and problematize these data.

Given the low rate of funding for LGBT health research, it is critical that we leverage evidence from a wide range of disciplines to address LGBT inequities. ÂfPU

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J. G. L. Lee drafted the letter. T. Wimark edited it. Both authors approved the final version.
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Goldsmith and Belldeclined to respond.

Sidebar

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-in-Chief, Alfredo Morabia, MD, PhD, at editorajph@ apha.org.

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Erratum In: "Food Insecurity and Delayed or Forgone Medical Care During the COVID-19 Pandemic"

Anonymous

ProQuest document link

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When originally published, the column headings in Table 1 and Table 2 incorrectly listed "Food Insecurity." On page 779-780, Table 1 should appear as:

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Correlates and Reasons to Use E-cigarettes Among Medical Students in Saudi Arabia

Anonymous

FULL TEXT

E-cigarette use is increasing in Saudi Arabia. Alzalabani et al. surveyed 527 medical students at Taibah University to assess the prevalence, perceptions, reasons to use, and factors associated with e-cigarette use. Almost 16% of surveyed students used e-cigarettes. Correlates of e-cigarette use were being male, being in higher level college classes, having had at least 1 friend who smoked, having a family history of smoking, and having housemates who smoked e-cigarettes. Motivations to use e-cigarettes were to reduce tobacco consumption (89.2%), perceptions of lower toxicity than regular cigarettes (88.4%), and avoiding having to go outside to smoke (62.05%). E-cigarette use was common among medical students, and perceptions of lower toxicity and intentions to reduce tobacco consumption were relevant for e-cigarette use.

Citation. Alzalabani AA, Eltaher SM. Perceptions and reasons of e-cigarette use among medical students: an Internetbased survey. J Egypt Public Health Assoc. 2020;95(1):21. https://doi.org/10.1186/ s42506-020-00051-0

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Database:	Public Health Database

Leveraging Critical Infrastructure Within an Environmental Justice Framework for Public Health Prevention

Hendricks, Marccus D, PhD, MPH [1] [1] is with the Urban Studies and Planning Program and the Stormwater Infrastructure Resilience and Justice Lab in the School of Architecture, Planning, and Preservation, University of Maryland, College Park

ABSTRACT (ENGLISH)

If we think of communities as a stage play production, land use would represent the markers on the stage, and infrastructure would represent the props, systems, or facilities in which the actors live, work, and play. The quality of the production and performance; options for how actors move, interact, and communicate; and access to basic technology and technical support are all predicated on the inventory, condition, and distribution ofthese critical systems or props. In communities, these are fundamental matters of environmental justice. Environmental justice raises the question of whether environmental activities, laws, regulations, and policies have been applied fairly across all segments of the population, namely low-income communities of color. Thus, infrastructure development, mediated by an environmental justice framework, metaphorically and quite literally sets the stage for essentially all outcomes related to the built environment, from scenario planning to public health.

The built environment, including infrastructure, has always been a fundamental driver for public health outcomes.1,2 Hence, scholars have documented that, above any individual physiological indicator of health, zip code is one of the best predictors of public health at the neighborhood level.3 This corroborated evidence further draws the connection between infrastructure and public health, particularly in the context of environmental justice. A well-known example of this nexus is the public health crisis in Flint, Michigan, a majority Black city with a 40% poverty rate whose drinking water was contaminated with lead because of corroded pipe infrastructure and the associated developmental health risks to the local predominately Black children.4 Another, lesser-known illustration is the lack of sewerage infrastructure in low-income communities of color across this country, such as in rural Lowndes County, Alabama, and the associated sanitary health risks, as documented in Catherine Flowers's book Waste: One Woman's Fight Against America's Dirty Secret5 These examples are just scratching the surface of a host of issues that we live with daily occurring at this intersection that are both well publicized and more latent. The moral of these stories is that infrastructure and public health challenges in America are omnipresent, especially in communities of color.

In this editorial, I provide a high-level portrayal of the relationship between critical infrastructure systems and public health in the context of environmental justice. I begin by discussing the legacy of infrastructure development at the neighborhood scale in terms of how racism, redlining, and residential segregation have led to environmental injustice in infrastructure and how this phenomenon is a sociophysical determinant of public health. I then provide more contemporary illustrations of infrastructure, environmental injustice, and implications for public health. Last, I discuss how infrastructure can act as an intervention for not only environmental justice but also public health.

Ultimately, there is an opportunity to leverage infrastructure within an environmental justice framework as a form of "preprimary" public health prevention. For example, the primary prevention prescription for chronic illnesses such as cardiovascular disease and diabetes is exercise, but exercise at the neighborhood level is severely limited without access to parks, sidewalks, and recreational facilities.6 Furthermore, evidence suggests that disparities exist in the distribution of these health-promoting infrastructures along the lines of race, ethnicity, and class.7 Therefore, infrastructure and environmental justice are critical prerequisites in public health for more just, well, and resilient communities of color.

FULL TEXT

If we think of communities as a stage play production, land use would represent the markers on the stage, and infrastructure would represent the props, systems, or facilities in which the actors live, work, and play. The quality of the production and performance; options for how actors move, interact, and communicate; and access to basic technology and technical support are all predicated on the inventory, condition, and distribution ofthese critical systems or props. In communities, these are fundamental matters of environmental justice. Environmental justice raises the question of whether environmental activities, laws, regulations, and policies have been applied fairly across all segments of the population, namely low-income communities of color. Thus, infrastructure development, mediated by an environmental justice framework, metaphorically and quite literally sets the stage for essentially all outcomes related to the built environment, from scenario planning to public health.

The built environment, including infrastructure, has always been a fundamental driver for public health outcomes.1,2 Hence, scholars have documented that, above any individual physiological indicator of health, zip code is one of the

best predictors of public health at the neighborhood level.3 This corroborated evidence further draws the connection between infrastructure and public health, particularly in the context of environmental justice. A well-known example of this nexus is the public health crisis in Flint, Michigan, a majority Black city with a 40% poverty rate whose drinking water was contaminated with lead because of corroded pipe infrastructure and the associated developmental health risks to the local predominately Black children.4 Another, lesser-known illustration is the lack of sewerage infrastructure in low-income communities of color across this country, such as in rural Lowndes County, Alabama, and the associated sanitary health risks, as documented in Catherine Flowers's book Waste: One Woman's Fight Against America's Dirty Secret5 These examples are just scratching the surface of a host of issues that we live with daily occurring at this intersection that are both well publicized and more latent. The moral ofthese stories is that infrastructure and public health challenges in America are omnipresent, especially in communities of color.

In this editorial, I provide a high-level portrayal ofthe relationship between critical infrastructure systems and public health in the context of environmental justice. I begin by discussing the legacy of infrastructure development at the neighborhood scale in terms of how racism, redlining, and residential segregation have led to environmental injustice in infrastructure and how this phenomenon is a sociophysical determinant of public health. I then provide more contemporary illustrations of infrastructure, environmental injustice, and implications for public health. Last, I discuss how infrastructure can act as an intervention for not only environmental justice but also public health.

Ultimately, there is an opportunity to leverage infrastructure within an environmental justice framework as a form of "preprimary" public health prevention. For example, the primary prevention prescription for chronic illnesses such as cardiovascular disease and diabetes is exercise, but exercise at the neighborhood level is severely limited without access to parks, sidewalks, and recreational facilities.6 Furthermore, evidence suggests that disparities exist in the distribution ofthese healthpromoting infrastructures along the lines of race, ethnicity, and class.7 Therefore, infrastructure and environmental justice are critical prerequisites in public health for more just, well, and resilient communities of color.

UNSAFE AND UNSANITARY LIVING CONDITIONS

Public health, urban planning, and civil engineering have had an evolutionary connection since the late 19th century through efforts to reduce the harmful effects of rapid urbanization and industrialization. Specifically, planning and public health were regularly affiliated through infrastructure engineering to resist exposure to hazards with measures such as water supply, sewerage, sanitation, vaccination, garbage collection, and rodent control. However, during and after the time of American Reconstruction, the living conditions and social circumstances of Black persons in cities were particularly unfavorable.

Early studies of environmental circumstances in communities of color, such as those completed by sociologist W. E. B. Du Bois, show that Black persons in American cities were much more likely than White individuals to suffer from or experience unsanitary and unsafe living conditions.8 Residential segregation, including redlining, the distribution of wealth, patterns of racial and economic discrimination, steering, and differential comprehensive planning, directly impact the urban spaces, physical environments, and health status of the folks who are isolated and marginalized.9 Since Du Bois' foundational work, decades of environmental justice scholarships have demonstrated the disproportionate burden of environmental exposures, largely predicated on infrastructure or lack thereof.

IMPLICATIONS FOR PUBLIC HEALTH

Public health disparities are often linked to inequities in infrastructure. Social inequalities along racial lines still have public health and planning consequences for low-wealth communities and communities of color. Vulnerabilities across systems occur in municipalities that fail to install, maintain, and rehabilitate infrastructure, increasing the levels of harmful microbes and chemicals in drinking and water supplies, elevating exposure risks, increasing illness and disease, reducing neighborhood quality of life, and increasing stress levels, particularly among poor people of color.10

The availability of energy infrastructure and the ability to heat or cool homes, store food, and operate medical equipment have implications for public health in communities of color. For example, Reames et al.11 demonstrate

that household energy burden based on socioeconomic conditions is associated with public health outcomes even while controlling for other covarying determinants. The built environment and infrastructure that provide an opportunity for recreation, exercise, and active play also have long-term health implications. In fact, a study examining active transportation among youths within a context of transportation infrastructure inequity found race, sex, and class to be inhibitors of active transportation, further linking the relationship between infrastructure, public health, and environmental justice.12 Of course, classic linkages between infrastructure and public health through piped networks for water, stormwater, and wastewater management are still very relevant in the contemporary city. Statistical analysis of high-detail sewer locations reveals geographic correlations with key local design parameters, urban characteristics, and sociodemographic indicators, showing the importance of storm sewer planning not only for managing storm and wastewater but also for expanding social equity.13 Furthermore, morbidity and mortality increases are associated with disasters, particularly when critical infrastructure systems are inadequate, fail, or are altogether nonexistent in multihazard scenarios across all phases of the disaster cycle, particularly for those living at the margins.14

PREVENTION OPPORTUNITY IN COMMUNITIES OF COLOR

Infrastructure planning and management within an environmental justice framework can promote physical and mental health and prevent damage, disease, and death for urban and rural residents, particularly for communities of color. Environmental justice, by way of critical infrastructures and utilities, is a cornerstone for prevention and ground zero for public health. There's an opportunity for public health to develop "preprimary" prevention protocols that include considering alternative health indicators, conceptualizing frameworks, and developing working relationships with planners and engineers, focusing on environmental justice, wellness, and resilience in communities of color. Centering public health in infrastructure planning and management can illuminate alternative health indicators that take into consideration the installation inventory, dimensionality, and physical condition of infrastructure across communities. Frameworks that further examine these relationships are also critical to exploring these opportunities in environmental justice science, policy, practice, and implementation. In the end, urban planning and public health disciplines have to reclaim and reframe their stake in infrastructure to ensure that all communities, regardless of race, class, or nationality, have access to the basic utilities that satisfy physiological needs as well as additional systems that provide a hierarchical pathway to self-actualization and restorative justice.

Public health and urban planning have been at the forefront in conceptualizing and showing how not only social contexts but also the built and structural environment are determinants of health and well-being.15 Investment in infrastructure is an investment in public health, and we know an ounce of prevention is worth a pound of cure. Thus, capital improvement plans should not only reference economic returns but also explicitly mention public health gains. With infrastructure being a part of national discourse, what better time than now to recognize public health as an outcome of the capital improvement planning process?

This approach may provide substantive information that can be used to develop better health policies that consider justice, wellness, and resilience comprehensively. If we don't provide an opportunity for just transitions, allowing low-income communities, particularly communities of color, to be able to take advantage of emerging infrastructure development, then essentially we will perpetuate the same inequalities that we've seen historically. When it comes to infrastructure systems, we are quite literally interconnected and interdependent in ways that vulnerabilities in the system impact us all, especially the most marginalized among us. For us to be resilient, we have to use systems thinking and interdisciplinarity to address prevention, serve the vulnerable and underserved aspects of the system first, and plan for infrastructure with justice and public health in mind, especially in communities of color.

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The Food and Drug Administration's e-Cigarette Flavor Restrictions Have Not Gone Far Enough to Curb the Youth e-Cigarette Use Epidemic

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ABSTRACT (ENGLISH)

Youth e-cigarette use in the United States has skyrocketed in the past decade. Driven by targeted marketing, high nicotine content, and the availability of flavors appealing to youths,1 past 30-day use surged among high school students from 1.5% in 2011 to 27.5% in 2019.2 To curb youth access and use, the US Food and Drug Administration (FDA) issued an enforcement policy against any flavored, cartridge-based e-cigarettes with tobacco and menthol flavor exemptions in February 2020. The policy was informed by studies showing that most youths preferred flavored cartridge-based e-cigarettes and that few youths use tobacco- and menthol-flavored products. Ever since its announcement, the policy has been criticized for the lack of clarity in flavor definitions and its narrow focus, omitting disposable products, ignoring other product features that appeal to tobacco-naive and never users (e.g., salt-based nicotine), and leaving other flavored tobacco products unrestricted.3,4

FULL TEXT

Youth e-cigarette use in the United States has skyrocketed in the past decade. Driven by targeted marketing, high nicotine content, and the availability of flavors appealing to youths,1 past 30-day use surged among high school students from 1.5% in 2011 to 27.5% in 2019.2 To curb youth access and use, the US Food and Drug Administration (FDA) issued an enforcement policy against any flavored, cartridge-based e-cigarettes with tobacco and menthol flavor exemptions in February 2020. The policy was informed by studies showing that most youths preferred flavored cartridge-based e-cigarettes and that few youths use tobacco- and menthol-flavored products. Ever since its announcement, the policy has been criticized for the lack of clarity in flavor definitions and its narrow

focus, omitting disposable products, ignoring other product features that appeal to tobacco-naive and never users (e.g., salt-based nicotine), and leaving other flavored tobacco products unrestricted.3,4

USUAL FLAVORS UNCHANGED AFTER RESTRICTIONS

In this issue of AJPH, Hammond et al. (https://bit.ly/3PEbxDp) examine the impact of the policy on trends in the use of flavored e-cigarettes among current e-cigarette users in the United States, Canada, and England. Using data from five waves of the International Tobacco Control Policy Evaluation Project Youth Tobacco and Vaping Survey, their study showed that fruit remained the most often used flavor by youth e-cigarette users after the US federal restrictions on nontobacco, nonmenthol flavors in cartridge-based devices. Their key findings suggest a funneling of cartridge-based e-cigarette users to exempted flavored disposable products. In addition, the data indicated a widespread noncompliance with the flavor restriction because more than half of cartridge and pod vapers in the United States reported usually using fruit flavors in August 2020. Their findings echo population surveys showing rapidly increasing popularity of disposable e-cigarette use among US youths.5 The most recent National Youth Tobacco Survey (NYTS), conducted from January to May 2021, showed that among current youths who were e-cigarette users, 53.7% used disposables and 84.7% used flavored e-cigarettes.6

FLAVOR RESTRICTIONS AND E-CIGARETTE USE

The main purpose of the federal flavor restriction isto limit youth access to flavored products and curb the surge of e-cigarette use prevalence. Because of the concern of the comparability of the August 2020 data collected during the pandemic, Hammond etal. did not assess the potential impact of the policy on the accessibility of vaping devices or e-cigarette use prevalence. Although not directly addressing the effects of the federal e-cigarette flavor restriction, a few studies provided estimates on youth e-cigarette use prevalence in 2020 after the release of the FDA's flavor restriction and in 2021. Using data from Monitoring the Future surveys, an earlier study found that the increases in teenage vaping from 2017 to 2019 halted in 2020, and accessibility of vaping products to youths decreased.5 NYTS 2021 showed that 11.3% of high school students were current e-cigarette users, much lower than the 19.6% figure in 2020. The 2021 estimation likely was influenced by underreporting among youths participating outside of the classroom; however, among high school students who took the NYTS 2021 survey in school, 15% reported currently using e-cigarettes, indicating a further decrease in youth e-cigarette use in 2021.

It is unclear whether and to what extent the federal flavor restriction has contributed to the recent decrease in youth e-cigarette use. Data from Monitoring the Future study suggest only a slight decrease in the proportion of current youth e-cigarette users who reported it being fairly easy or very easy to obtain a vaping device or nicotine solution for vaping between 2019 and 2020. Using the national Dynata opt-in online panel collected from January to June 2020, Kreslake et al.7 found a significant decrease in e-cigarette use in the past 30 days among youths starting in March 2020. However, they found a similar decrease in the use of flavored disposable e-cigarettes (unaffected by flavor restriction) relative to the use of cartridge-based e-cigarettes. Another study compared young people's e-cigarette risk perception in cities with and without flavored e-cigarette sales restrictions and found no association between e-cigarette flavor policy and risk perception.8 Together with the study by Hammond et al., these studies indicate that the impact of federal e-cigarette flavor restriction on the youth e-cigarette epidemic may be quite limited. Although much remains to be clarified, the recent decrease in youth e-cigarette use could have been driven by the widely publicized e-cigarette- and vaping-associated lung injury epidemic duringthe summer of 2019 and the associated increase in perceived risk of nicotine vaping, Tobacco 21 legislation that restricts adolescent access to all tobacco products, and the pandemicinduced changes in the retail and social environments.5,7

COMPREHENSIVE FLAVOR RESTRICTIONS?

Although the effectiveness of the federal flavor restrictions has been questioned, it remains unclear whether comprehensive flavor restrictions that prohibit non-tobacco-flavored e-cigarettes or all flavored tobacco products may be a better option. Studies that exploited the variation in the comprehensiveness of flavor restrictions between state and local jurisdictions indicated a reduction in flavored and total e-cigarette sales associated with more stringent flavor restrictions.9 However, other studies have raised an important concern that reducing youth access to flavored e-cigarettes may motivate substitution of e-cigarettes with traditional cigarettes.10 Moreover, flavor is also a

primary driver of e-cigarette initiation among adult cigarette smokers and may be critical for adult smokers who are otherwise unable to quit cigarette smoking to switch to a potentially safer alternative. Despite the gradual declining prevalence over the past decades, cigarette smoking remains the leading preventable cause of disease, disability, and death in the United States, accounting for close to a half million deaths annually and hundreds of billions of dollars of direct medical costs. More evidence is urgently needed on how flavor restrictions may affect adult smoking and whether flavor restrictions bring a net public health benefit. Public policies should strive for a delicate balance between the risks of e-cigarette use to youths and the potential benefits of e-cigarettes for adult smokers.11 >4JPH

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Meisel et al. Reply

Meisel, Zachary F, MD, MPH, MSHP [1] ; Dolan, Abby, MPH [2] ; Schapira, Marilyn M, MD, MPH [3 1] Center for Emergency Care Policy and Research, Pereiman School of Medicine, University of Pennsylvania, Philadelphia [2] Center for Emergency Care Policy and Research and the Urban Health Lab, Perelman School of Medicine [3] Division of General Internal Medicine, Perelman School of Medicine, and the Center for Health Equity Research and Promotion (CHERP), Philadelphia VA Medical Center, Philadelphia, PA

FULL TEXT

Senchaudhuri addresses some important aspects of the Life STORRIED study, which was designed to test the impact of individualized infographics-either in combination with narratives or without-on patientcentered risk communication outcomes related to opioid and pain prescribing in the emergency department.1

We agree thatthe mechanism through which narrative impact judgements and decision making not well understood. Narratives or storytelling have been posited to work on patient medical decision-making through a range of mechanisms, including heuristic responses, emotional responses, and narrative transportation theory that states narratives or stories help to transport people to a situation and engage them with the information being conveyed. In addition to an independent effect, narratives may help people to engage with numeric-based information.2,3 Results from our Life STORRIED study suggest that it may be a combination of the two approaches that changes behavior and preferences.

Narratives can cause bias in how persons view treatment options. In the Life STORRIED study, care was taken to provide balanced and varying narratives. Examples included men and women of differing ages, races, ethnicities, and both positive and negative experiences when using opioids to treat pain.4 Ongoing and planned future work from ourteam seeks to understand how narratives and probabilistic data interact to affectjudgements and decisions, including how the impact of these interventions persist or change overtime.

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Changes in Tobacco Consumption Before and During the COVID-19 Pandemic in Mexico

Anonymous

FULL TEXT

Tobacco consumption is an important risk factor for chronic diseases such as cardiovascular diseases and pulmonary obstructive disease and may increase the likelihood of the worst possible COVID-19 outcomes. Barrera-Núñez et al. examined data from adolescent and adult respondents of the 2018 and 2020 national health survey in Mexico (Encuesta Nacional de Salud y Nutrición). The national prevalence of women smokers decreased from 9.5% to 7.2%, whereas the prevalence of tobacco use among adolescents increased approximately 60%.

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COVID-19 Outcomes Among the Hispanic Population of 27 Large US Cities, 2020–2021

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ABSTRACT (ENGLISH)

Objectives. To examine racial/ethnic disparities in COVID-19 outcomes between Hispanics and Whites across 27 US jurisdictions whose health departments are members of the Big Cities Health Coalition (BCHC). Methods. Using surveillance data from the BCHC COVID-19 dashboard as of mid-June 2021, we computed crude incidence, age-adjusted hospitalization and mortality, and full vaccination coverage rates for Hispanics and Whites by city. We estimated relative and absolute disparities cumulatively and for 2020 and 2021 and explored associations between city-level social vulnerability and the magnitude of disparities. Results. In most of the cities with available COVID-19 incidence data, rates among Hispanics were 2.2 to 6.7 times higher than those among Whites. In all cities, Hispanics had higher age-adjusted hospitalization (1.5-8.6 times as high) and mortality (1.4-6.2 times as high) rates. Hispanics had lower vaccination coverage in all but 1 city. Disparities in incidence and hospitalizations narrowed in 2021, whereas disparities in mortality remained similar. Disparities in incidence, hospitalization, mortality, and vaccination rates were wider in cities with lower social vulnerability. Conclusions. A deeper exploration of racial/ethnic disparities in COVID-19 outcomes is essential to understand and prevent disparities among marginalized communities. (AmJ Public Health. 2022;112(7): 1034-1044. https://doi.org/10.2105/AJPH.2022.306809)

FULL TEXT

Headnote

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The United States has been one of the countries most affected by the COVID-19 pandemic.1 Hispanics and other minoritized racial/ethnic groups have been disproportionately affected throughout the country.2 This has led to life expectancy reductions among Hispanics that are 3 to 4 times larger than the reductions observed among non-Hispanic Whites (hereafter referred to as Whites).3 Despite disproportionate COVID-19 infection, hospitalization, and mortality rates among Hispanics, evidence emerging from different regions of the country shows that this population lags in vaccination rates relative to Whites.4

Although COVID-19 inequities have received substantial attention in the academic literature, this research has primarily focused on disparities measured at the state or county level5-7 or within zip codes in a small number of cities.8,9 For example, Xu et al. found disproportionate effects due to COVID-19 among Hispanics and non-Hispanic Blacks (hereafter referred to as Blacks) relative to Whites across 45 states and the District of Columbia,6 Gross et al. reported a similar burden among Hispanics and Blacks with respect to COVID-19 mortality across 28 states and New York City,5 Moore et al. found wider racial/ethnic COVID-19 disparities in "hotspot" counties,7 and Benitez et

al., using zip code-level data across 6 cities, found a positive association between the percentage of Hispanic and Black residents and COVID-19 incidence.10 Some studies have also assessed the association between county-level social vulnerability and COVID-1 9 outcomes11-13 and even explored changes over time in this association.11 However, to our knowledge, no study has investigated racial/ethnic inequities in different COVID-19 outcomes with a focus on the largest US cities, where a majority of Hispanics live,14 or assessed the ways in which disparities have evolved overtime11,15 or according to social vulnerability. Cities are heterogeneous in terms of both composition and context, which may influence health inequities. Therefore, examining how factors that vary across cities (e.g., social vulnerability) relate to the magnitude of disparities within cities can help identify intervention points as state and local governments and community-led initiatives work to design, implement, and coordinate responses to the pandemic.

Using surveillance data on COVID-19 cases, hospitalizations, mortality, and vaccinations, we examined disparities in COVID-19 outcomes between Hispanic and White populations across large US cities (from 13 to 20 cities depending on the outcome) and explored associations between the magnitudes of disparities and city-level social vulnerability. Documenting racial/ethnic inequities across cities is critical in not only revealing differential exposures and vulnerabilities among Hispanic communities but also informing resource allocation and the development of more targeted interventions to mitigate inequities.

METHODS

In this ecological study, we examined the Hispanic and White populations of 27 of the 30 jurisdictions whose health departments are members of the Big Cities Health Coalition (BCHC). To be eligible for BCHC membership, cities must be in the top 30 of the country's most populous urbanized areas (as defined by the US Census Bureau), have a population of 400 000 or more, and have a locally controlled health department or, if they are not among the top 30 most populous urban areas, they must have a population of 800 000 or more and a locally controlled health department.16

We obtained data from the BCHC COVID-19 Inequities in Cities Dashboard project,17 which compiles data from city, county, or state health department repositories or from the Centers for Disease Control and Prevention (CDC) COVID-19 Case Surveillance Restricted Access Detailed Data (June 21,2021, version). To ensure the greatest possible number of outcomes per city, the dashboard employs a combination of citylevel data and county-level data to proxy cities (Table A, available as a supplement to the online version of this article at http://www.ajph.org).

We also used the CDC's 2018 Social Vulnerability Index (SVI) at the city or county level,18 depending on the level of data availability for each city or outcome. The SVI quantifies the degree to which a community is vulnerable to external stressors, including disease outbreaks. The index summary score includes 15 variables representing 4 domains (socioeconomic status, household composition and disability, minority status and language, housing type and transportation). The SVI is calculated by ranking cities (nationally) according to the values of the 15 variables in each domain, and percentile ranks are then computed for each city according to domain and summary score. SVI scores range from 0 to 1, with higher scores indicating higher vulnerability.

Outcomes

We examined 4 COVID-19 outcomes: incidence rates per 100 000, hospitalization rates per 100 000, mortality rates per 100 000, and vaccination coverage (percentage of individuals fully vaccinated across the entire population, irrespective of age). We used cumulative data as of mid-June 2021 and cumulative data for all of 2020, as well as data from January to mid-June 2021 separately, to compute these outcomes. To make the 2020 and 2021 rates comparable, we multiplied 2021 rates by 365/168, where 168 is the number of days covered by the 2021 data, so that both 2020 and 2021 rates involved a 1 -year cumulative rate interpretation. Data on total and race/ethnicity-specific city populations were obtained from the 2015 to 2019 American Community Survey. All rates were calculated for Hispanics and Whites separately.

Although the terms "Hispanic" and "Latinx" may referto the same groups of individuals (i.e., Hispanic refers to those of Spanish-speaking origin and Latinx refers to those of Latin American descent), we use Hispanic to encapsulate individuals of either Hispanic or Latinx descent. We included only cities that reported race and ethnicityjointly (e.g.,

Hispanic, non-Hispanic White).

Age has a critical role in determining disease severity. Therefore, we used age-adjusted rates for hospitalizations and mortality, with the 2000 US standard population as the reference population. Because the number of cities providing data on incidence or vaccination by both race/ethnicity and age was limited, we decided to use crude incidence and vaccination coverage to maximize data availability. Moreover, although we examined 27 member cities of the BCHC, not all 27 cities reported all 4 of our outcomes by race/ethnicity. We decided to maximize the number of cities included in our study by not limiting the sample to the 7 cities that reported all outcomes. We used data on crude incidence for 20 cities (representing 29.7 million inhabitants), data on age-adjusted hospitalizations for 19 cities (28.5 million inhabitants), data on age-adjusted mortality for 20 cities (29 million inhabitants), and data on crude full vaccination coverage for 13 cities (27.4 million inhabitants; for a description of the included cities, see Table B, available as a supplement to the online version of this article at http:// www.ajph.org).

Statistical Analyses

Because small relative differences can mask large absolute differences, we calculated both rate ratios (RRs) and rate differences (RDs). Rate ratios were used to assess relative disparities by dividing the rate among Hispanics versus the rate among Whites, whereas rate differences were used to assess absolute disparities by subtracting the rate among Whites from the rate among Hispanics. The appendix (available as a supplement to the online version of this article at http://www.ajph. org) contains details on the calculation of confidence intervals (CIs) for both measures. To examine whether disparities changed in 2021, we also graphically compared rates and disparities in incidence, hospitalizations, and mortality in 2020 and 2021. As a means of assessing the association between the magnitude of disparities and social vulnerability, we used scatterplots and Spearman correlation coefficients to explore correlations of city-level SVI values (and their 4 domains) with COVID-19 outcome rates among Hispanics and Whites and with relative disparities in COVID-19 outcomes.

We used R version 4.0.1 (R Foundation, Vienna, Austria) to conduct all of the statistical analyses. BCHC data are available for download at the BCHC COVID-19 Inequities in Cities Dashboard project Web site (http:// www.covid-inequities.info).

RESULTS

Our analysis incorporated up to 27 cities with a total of 37.1 million residents (median city size = 874401; interquartile ratio [IQR] = 640 0321 1 including 11.9 million Hispanic residents and 1 3.2 million White residents (see Table B for further details on city characteristics). Table 1 shows racial/ethnic disparities in COVID-1 9 crude incidence, age-adjusted hospitalization, and age-adjusted mortality rates between Hispanics and Whites. Incidence, hospitalization, and mortality disparities were statistically significant for all cities with available data, as confidence intervals did not include 1 (for relative disparities) or 0 (for absolute disparities) for any of these cities.

In more than half (11) of the 20 cities with crude incidence data available, rates among Hispanics were twice as high as those among Whites. Relative incidence disparities were greatest in San Francisco (RR 5 6.77; 95% CI = 6.57, 6.98) and Oakland (RR = 5.24; 95% CI = 5.13, 5.36), California, whereas absolute disparities were greatest in Los Angeles, California (RD = 18 038 per 100 000; 95% CI 5 17 986,18 089), and Minneapolis, Minnesota (RD 5 10140 per 100 000; 95% CI 5 9889, 10 392). Dallas, Texas, and Philadelphia, Pennsylvania, were the only 2 cities in which incidence rates were lower among Hispanics than among Whites. The incidence rate was 7% lower among Hispanics than Whites in Dallas (RR 5 0.93; 95% CI 5 0.93, 0.94; RD 5 -550 per 100 000; 95% CI 5 -631, -469) and 13% lower among Hispanics than Whites in Philadelphia (RR5 0.87; 95% CI 5 0.86, 0.89; RD 5-1047 per 100 000; 95% CI 5-1175, -919).

In 15 of the 19 cities with age-adjusted hospitalization data available, hospitalization rates were 2 to almost 9 times as high among Hispanics as among Whites (with rate ratios ranging from 2.19 to 8.64). San Francisco (RR 5 8.64; 95% CI 5 7.43,10.06) and Washington, DC (RR 5 7.45; 95% CI 5 6.70, 8.28), had the widest relative disparities, and Los Angeles (RD 5 1599 per 100 000; 95% CI 5 1582, 1616) and Washington, DC (RD 5 1259 per 1 00 000; 95% CI 5 1 172, 1345), had the widest absolute disparities.

Age-adjusted mortality rates were higher among Hispanics in all 20 cities with age-adjusted mortality data available;

however, relative disparities differed widely (with rate ratios ranging from 1.33 to 6.23). The widest relative disparities were observed in Washington, DC (RR 5 6.23; 95% CI 5 4.94, 7.85); Charlotte, North Carolina (RR 5 4.27; 95% CI 5 3.68,4.96); San Diego, California (RR 5 4.09; 95% CI 5 3.78, 4.42); and San Jose, California (RR 5 3.85; 95% CI 5 3.37,4.39). The widest absolute disparities were observed in Los Angeles (RD 5 436 per 100 000; 95% CI 5 426, 445) and Phoenix, Arizona (RD 5 250 per 100 000; 95% CI 5 239, 262).

Finally, Table C (available as a supplementto the online version ofthis article at http://www.ajph.org) shows racial/ethnic disparities in crude vaccination coverage among Hispanics versus Whites. Vaccination coverage (percentage of individuals fully vaccinated) was 12% to 44% lower among Hispanics than Whites in all but 1 of the 13 cities (San Francisco) with vaccination coverage data available (with Hispanic to White ratios ranging from 0.46 to 0.88). Fort Worth, Texas (RR = 0.56; 95% CI = 0.55, 0.56), had the widest relative disparity, with Hispanics 44% less likely than Whites to have been vaccinated. Austin, Texas, had the widest absolute disparity (-20.2%; 95% CI = -20.4, -20.1).

Figure 1 provides a comparison of relative disparities between Hispanics and Whites in COVID-19 incidence, hospitalization, and mortality rates in 2020 versus 2021 (up to mid-June). Of the 15 cities with incidence and hospitalization data for both periods, 13 had narrower disparities during 2021 than 2020; approximately half of the study cities had wider disparities in mortality during 2021. Figure A (available as a supplement to the online version of this article at http://www.ajph.org) shows changes in absolute disparities, which narrowed in most cities (10 of 15 cities for incidence, 14 of 15 cities for hospitalizations, 14 of 17 cities for mortality). Figure B (available as a supplementto the online version ofthis article at http://www.ajph.org) shows that incidence rates were similar in 2020 and 2021 among Hispanics but increased in all cities among Whites, hospitalization rates declined among Hispanics in 2021 and remained similar among Whites, and mortality rates decreased in most cities in both groups.

Figure 2 shows the relationship between city-level summary SVI values and COVID-19 rates among Hispanics and Whites, and Figure 3 shows the relationship between SVI values and relative disparities for each outcome. Relative disparities in incidence, hospitalization, and mortality rates were narrower in cities with higher social vulnerability, reflecting higher rates among Whites in these cities; rates among Hispanics varied less by city-level SVI (and, in the case of incidence, were even slightly lower In cities with higher SVI values). These correlations were driven by the socioeconomic status and household composition and disability domains, with the minority status and language and housing and transportation domains having weaker correlations (Table D, available as a supplement to the online version of this article at http://www.ajph.org).

We found narrower disparities in vaccination coverage in cities with higher social vulnerability (Figure C, available as a supplement to the online version of this article at http://www.ajph.org); correlations were stronger for the socioeconomic status and housing and transportation domains than for the household composition and disability domain (Table D). The contribution of the socioeconomic status and household composition and disability domains was mainly driven by lower vaccination coverage among Whites in cities with higher vulnerability in those 2 domains.

DISCUSSION

In this study, we investigated the heterogenous nature of COVID-19 inequities between Hispanics and Whites across several of the most populous cities in the United States. Hispanics had rates more than double those of Whites in more than half of the cities with respect to incidence, in most cities with respect to hospitalizations, and in all cities with respect to mortality. Disparities in incidence and hospitalizations narrowed in 2021, but disparities in mortality did not change substantially. Moreover, in all but 1 of the 13 cities with available vaccination data, Hispanics had lower vaccination rates than Whites. In addition, we found that disparities in incidence, hospitalization, mortality, and vaccination rates were widest in low social vulnerability cities, mostly because Whites had lower rates as social vulnerability declined, whereas rates among Hispanics had a weak association with SVI values.

We found that incidence rates were higher among Hispanics than Whites in all but 2 of our cities, a result aligned with previous research at the neighborhood,10 county,11,19,20 and state19 levels. In addition, we found that age-adjusted hospitalization and mortality rates were higher among Hispanics in all cities, also consistent with previous studies.2,11,20,21

Although we cannot point to specific causative factors that led to the observed COVID-19 disparities between

Hispanics and Whites, these findings most likely reflect both increased exposure to severe acute respiratory syndrome navirus 2 and increased vulnerability to severe COVID-19.22 Hispanics are more likely than Whites to work in service-related occupations and other job sectors that are deemed essential but do not include paid medical leave.23,24 Also, they have the lowest health insurance coverage rates across all major racial/ethnic groups, and thus they are more likely to forgo seeking medical services.25 Finally, they are more likely to live in household conditions that impede proper social distancing measures, such as overcrowded housing26 and multigenerational households.7,27 In
addition, factors related to migration and citizenship status28 have recently been documented as strong predictors in explaining higher COVID-19 incidence rates among Hispanic populations than among other racial/ethnic minority groups.29 For example, the public charge rule implemented in 2019 limited access to public benefit programs among immigrants and penalized them for accessing services such as Medicaid and health care.30 Hispanics, especially those who are undocumented and do not speak English, face further disparities in access to high-quality, culturally and linguistically appropriate medical care.31 These challenges in accessing health care and the higher prevalence of comorbidities among Hispanics may also drive increased hospitalizations and mortality rates in this population.32 Structural barriers that prevent access to timely and quality health services for populations of color, such as insufficient insurance coverage, limited availability of quality health services in high-poverty neighborhoods, understaffed and overcrowded hospitals, limited access to advanced COVID-19 treatments or high-quality care, systemic racism and discrimination against these groups, and a history of medical mistrust due to past injustices, all help explain these pervasive disparities in COVID-19 outcomes.33,34 Hispanics
and Blacks represent a large share of the COVID-19 vaccination priority groups for health care, frontline, and other essential workers.35 Despite this, we found that in all but 1 of the 13 cities with available vaccination coverage data, the percentage of Hispanics fully vaccinated was 12% to 44% lower than that among Whites, consistent with other studies.36 Relative to their White counterparts, greater percentages of Hispanics, especially especially those who are undocumented,35,37 have expressed concerns about access to vaccination;37 specifically, more than half of unvaccinated and undocumented Hispanics have expressed immigration-related concerns with respect to getting vaccinated.37

Disproportionate COVID-19 outcomes among Hispanics and current trends in vaccination coverage suggest that Hispanics may have a higher likelihood of facing adverse health outcomes in the ensuing months of the vaccination rollout unless local city efforts help dismantle barriers that have created need and access gaps (e.g., by providing worker protections and paid medical leave) and help fortify COVID-19 recovery efforts (e.g., by improving communication in outreach programs in terms of languageconcordant care and offering conveniently located pop-up testing and vaccination clinics). Of note, we found similar vaccination rates among Hispanics and Whites in San Francisco. Although California has an extensive equity plan,38,39 we still observed wide disparities in other cities of the state. San Francisco specifically has placed special emphasis on equity in its vaccination plan,40 including expandingthe network of vaccination sites to cover more deprived areas.41

We also found generally narrower disparities during 2021 than 2020; at the relative scale, incidence and hospitalization disparities were especially narrower, and at the absolute scale all disparities were narrower. Narrowing of disparities, especially when differences are observed at the relative and absolute scales, can indicate an improvement in rates in the disadvantaged group or a worsening of rates in the advantaged group. We found that incidence rates increased among Whites during 2021 and that hospitalizations declined among Hispanics only. The similarity in incidence rates among Hispanics with declining hospitalizations and mortality may be the result of improvements in testing or declines in severity, potentially as a result of improved vaccination coverage during 2021. Finally, we found that racial/ethnic inequities in incidence, hospitalization, mortality, and vaccination rates were widest in cities with the lowest social vulnerability. Although additional research is needed to understand the mechanisms behind this pattern, this finding suggests that the potential benefits of low social vulnerability are not shared equally across racial/ethnic groups. According to the fundamental causes theory,42 populations with greater access to resources (in this case, Whites) may be more able to leverage those resources to overcome barriers to

avoiding occupational or household exposures to SARS-CoV-2 and accessing health care, testing, and vaccination, whereas populations with fewer resources (in this case, Hispanics) cannot opt out of these exposure risks. However, because city-level SVI represents the vulnerability of cities as a whole rather than vulnerability ascribed to Hispanic and White populations, SVI values can potentially mask significant differences in vulnerability faced by those populations.

We found that these patterns were mostly driven by the socioeconomic status and household composition and disability domains (along with the housing and transportation domain in the case of vaccination). This apparent effect modification of disparities by city-level social vulnerability or the constructs it proxies requires further investigation to gain insights into the processes linking contextual characteristics of cities and the emergence of health disparities.

Strengths and Limitations

This study has several strengths, including the use of comprehensive COVID-19 data on incidence, hospitalization, mortality, and vaccination rates in up to 27 of the most populous and largest cities in the United States. We were also able to explore age-adjusted hospitalization and mortality rates, a critical approach when comparing populations with different age distributions. In addition, we explored relative and absolute disparities, both cumulatively and during 2 periods, allowing for a more comprehensive description of disparities.

However, we acknowledge some limitations. First, we relied on surveillance data. In the early phases of the pandemic, testing was extremely limited, especially in low socioeconomic status and minority populations,43 although testing access improved overtime. Testing data may help in overcoming this limitation, but lack of availability and quality (e.g., missing data on race/ ethnicity) makes using race/ethnicityspecific testing and positivity data challenging. Relatedly, the outcomes we used involved issues with completeness, specifically missing race/ethnicity data.44 Although we restricted our analysis to cities with less than 30% (for cases) or 15% (for deaths or hospitalizations) missing data on race/ethnicity, there is still the possibility for bias in the assignment of race/ethnicity.45 Second, we were not able to examine disparities between different Hispanic subgroups (e.g., Cubans, Mexicans, Puerto Ricans, Central Americans), obscuring potential heterogeneities within this population. Third, our vaccination coverage data may also have specific issues, as data for some cities did not include individuals vaccinated outside of their cities but in their respective states or captured suburban White populations who traveled into the city to get vaccinated, which could have led to an overestimation of rates among Whites. Fourth, we elected to use crude incidence and vaccination data to maximize the number of included cities. This may have failed to capture differences in the age distribution between Hispanic and White populations, especially in the case of vaccination, as initial strategies included prioritization by age. However, at the time our data were collected, all adults had been eligible to be vaccinated for at least 2 months.

Fifth, we used a mixture of city and county data to maximize data availability, but county-level metrics may not fully represent city-level metrics.46 As a result, our results may potentially mask the heterogeneity of city-county differences. Moreover, because we used city-level SVI data, we were unable to explore within-city heterogeneity in social vulnerability by race/ethnicity. Finally, our analysis of the association between social vulnerability and COVID-19 outcomes was descriptive in nature, and controlling for confounders was beyond the scope of our study. Therefore, our assessment of why racial/ethnic disparities are wider in lower SVI cities merits additional research at a granular level to account for potential city-level confounders.

Conclusions

We found large but heterogeneous COVID-19 inequities between Hispanics and Whites across 27 large cities in the United States. Overall, Hispanics had higher COVID-19 incidence, hospitalization, and mortality rates and lower vaccination coverage than Whites in a majority (or, in some cases, all) ofthe cities in our sample, although disparities in COVID-19 outcomes narrowed in 2021. Disparities were wider in cities with lower social vulnerability, highlighting potential areas of structural and social heterogeneity that merit the attention of local and state health departments and other policymakers. j&Acedil;PU

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

HUMAN PARTICIPANT PROTECTION

This research was deemed exempt under 45 CF 46.104(d)(4)(i) and (ii).

Sidebar

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CONTRIBUTORS

I.P. De Ramos and U. Bilal originated the study and wrote the first version of the article. R. Li cleaned and managed the data. All of the authors reviewed the article and provided critical content.

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Racial and Ethnic Inequities in Paid Family and Medical Leave: United States, 2011 and 2017–2018

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ABSTRACT (ENGLISH)

Objectives. To examine racial and ethnic inequities in paid family and medical leave (PFML) access and the extent to which these inequities are mediated by employment characteristics. Methods. We used data from the 2011 and 2017-2018 American Time Use Survey in the United States to describe paid leave access by race/ethnicity. We present unadjusted models, models stratified by policy-targetable employment characteristics, and adjusted regression models. Results. We found that 54.4% of non-Hispanic White workers reported access to PFML in 2017-2018 but that access was significantly lower among Asian, Black, and Hispanic workers. Inequities were strongest among private-sector and nonunionized workers. Leave access improved slightly between 2011 and 2017-2018, but the inequity patterns were unchanged. Conclusions. We observed large and significant racial and ethnic inequities in access to PFML that were only weakly mediated by job characteristics. PFML has a range of health benefits for workers and their families, but access remains limited and inequitable. Public Health Implications. Our findings suggest that broad PFML mandates (such as those in other high-income countries) may be needed to substantially narrow racial and ethnic gaps in paid leave access. (AmJ Public Health. 2022;1 12(7):1050-1058. https://doi.org/10.2105/AJPH.2022.306825)

FULL TEXT

Headnote

Objectives. To examine racial and ethnic inequities in paid family and medical leave (PFML) access and the extent to which these inequities are mediated by employment characteristics.

Methods. We used data from the 2011 and 2017-2018 American Time Use Survey in the United States to describe paid leave access by race/ethnicity. We present unadjusted models, models stratified by policy-targetable employment characteristics, and adjusted regression models.

Results. We found that 54.4% of non-Hispanic White workers reported access to PFML in 2017-2018 but that access was significantly lower among Asian, Black, and Hispanic workers. Inequities were strongest among private-sector and nonunionized workers. Leave access improved slightly between 2011 and 2017-2018, but the inequity patterns were unchanged.

Conclusions. We observed large and significant racial and ethnic inequities in access to PFML that were only weakly mediated by job characteristics. PFML has a range of health benefits for workers and their families, but access remains limited and inequitable.

Public Health Implications. Our findings suggest that broad PFML mandates (such as those in other high-income countries) may be needed to substantially narrow racial and ethnic gaps in paid leave access. (AmJ Public Health. 2022;1 12(7):1050-1058. https://doi.org/10.2105/AJPH.2022.306825)

Substantial research has documented the beneficial effects of access to paid leave for new parents and their children, as well as health benefits for workers, for sick family members, and in the workplace. A growing body of evidence links paid family and medical leave (PFML) with decreases in low-birthweight births and infant mortality, increased breastfeeding, improved maternal mental health, improved self-rated health, and increased postpartum care attendance.1 -11 Evidence also suggests that access to paid maternity leave increases infant immunization rates and decreases childhood hospitalizations.12-14

The United States remains the only Organisation for Economic Cooperation and Development country that does not mandate paid leave for new mothers, 1 of only 2 countries without paid leave for new fathers, and 1 of 3 high-income countries without any paid sick leave.15 An unsurprising result of this policy context has been large racial and ethnic inequities in access to paid leave. The results of 2 published reports assessing the 2011 Leave Module of the Bureau of Labor Statistics American Time Use Survey (ATUS) showed that only 23% to 25% of Hispanic parents had access to paid parental leave, as compared with 47% to 50% of non-Hispanic White and 41% to 43% of non-Hispanic Black parents.16,17 A study of mothers in the San Francisco (California) Bay Area revealed that, relative to White women, Asian, Hispanic, and Black women received 0.9 ($P < .05$), 2.0 ($P < .01$), and 3.6 ($P < .01$) fewer weeks, respectively, of full-pay equivalence duringtheir parental leaves.18

These racial and ethnic inequities in access to paid parental leave may be reflective of structural racism,19 which shapes and upholds systems that result in vastly inequitable distributions of risk, opportunity, wealth, and poverty. Occupational segregation extends from structural racism and, in this case, may be the mechanism by which these inequities take hold.20 For example, workers with occupations in the highest average wage quartile are 3.5 times more likely to have access to paid leave through their jobs than workers in the lowest average wage quartile.21 Furthermore, 33% of management and professional workers in 2020 had access to paid family leave through their jobs, as compared with only 12% of service workers.21 At the same time, Hispanic workers are most likely to fall in the lowest wage brackets16 and, relative to White and Asian workers, both non-Hispanic Black and Hispanic workers are underrepresented in professional-class jobs.22

There is some evidence that PFML policies can narrow these inequities that derive from a reliance on employerprovided benefits. For example, California's paid family leave program has increased leave taking among mothers by an average of 3 weeks, with the greatest gains among Black and Hispanic mothers.23

However, even in places with PFML policies, inequities persist. One reason has to do with policy design elements that disproportionately exclude workers of color, another example of how structural racism shapes and reifies inequities by institutionalizing exclusionary policies and practices.19 For instance, minimum hours or job tenure

requirements may exclude seasonal and part-time workers, and policies that cover only private-sector workers leave out many Black workers who are overrepresented in public-sector (i.e., governmental) jobs.

Furthermore, PFML policies do not necessarily include job protection, so workers are dependent on such protection through the Family and Medical Leave Act. This legislation has notoriously strict eligibility criteria: individuals must have worked at least 1250 hours for the same employer in the preceding year and must have been employed at the same job for at least 12 months, and only firms with at least 50 employees are covered. In a recent study in which data from the Current Population Survey were used to estimate the Family and Medical Leave Act restrictions that exclude the most workers, the results indicated that minimum hours requirements disproportionately exclude women; job tenure requirements exclude Black, Indigenous, and multiracial workers; and firm size requirements exclude Latinx workers.24

Another reason for these persistent inequities involves access to information about PFML benefits. Ten years after California's PFML law went into effect, Latinx, immigrant, and nonunionized workers were among the least likely to be aware ofthe state's policy.25 More recent research among new parents showed that Black and Hispanic workers were less likely than White workers to understand their maternity leave benefits, stemming from the fact that they were about half as likely to report receiving help from their employers in understanding their benefits.18 Similar findings have been observed for Medicaid-eligible workers (relative to workers with private insurance).26

We used data from the 2017-2018 ATUS Leave Module (the most recent data available) to document the magnitude of racial and ethnic inequities in PFML access and compared these data with those from the 2011 Leave Module. In addition, we investigated the extent to which such inequities might be mediated by employment characteristics that could be leveraged to better target and promote paid leave policies.

METHODS

We primarily used data from the 2017-2018 ATUS Leave Module,27 a nationally representative, crosssectional household survey that included detailed questions about access to paid leave. As noted, we also compared leave access inequities in 2017-2018 with those in 2011. We excluded respondents who were not employed or were self-employed; those whose race/ethnicity was not listed as non-Hispanic White, non-Hispanic Asian, non-Hispanic Black, or Hispanic; and those who had missing data on paid leave variables. Our analytic sample included 9987 workers in 2017-2018 and 6383 workers in 2011.

Dependent Variables

Our primary outcome was selfreported access to PFML. Respondents were first asked whether they received paid leave on their current or main job and, if so, to list the reasons for which they could take paid leave. Respondents were characterized as having PFML ifthey reported having each of the following: paid leave for their own illness or medical care (medical leave), paid leave for the illness or medical care of another family member (caregiving leave), and paid leave for the birth or adoption of a child (parental leave). This reflects the set of reasons most commonly covered under state PFML laws. We also looked separately at each of these 3 types of leave.

Independent Variable

We compared access to PFML across 4 racial and ethnic categories: nonHispanic White (White), non-Hispanic Asian (Asian), non-Hispanic Black (Black), and Hispanic.

Covariates

In the case of the 2017-2018 data, we focused on 3 policy-targetable occupational characteristics: employment sector (public vs private), work hours (full time vs part time), and whether the respondent was covered by a union. We also examined occupation (using census occupation codes for respondents' main jobs), industry (using census industry codes), presence of children younger than 18 years in the household, age, gender, marital status, educational attainment, family income, and citizenship.

Analyses

We present unadjusted models, initially showing combined PFML and then breaking out each type of paid leave separately; we compared unadjusted inequities in 2011 versus 2017-2018. For the most recent (2017-2018) data, we then describe PFML access stratified by the 3 policy-targetable employment characteristics just described

(sector, hours, and union coverage). Next, we tested whether racial and ethnic differences in 2017-2018 were attenuated after inclusion of regression controls for employment and sociodemographic characteristics. We used linear probability models to examine how adjustment for employment and sociodemographic characteristics changed the differential access observed in our unadjusted analyses. We present 3 nested models that adjusted for (1) the 3 primary employment characteristics (sector, hours, and union coverage), (2) all employment characteristics, and (3) sociodemographic characteristics. Stata version 14.2 (StataCorp LLC, College Station, TX) was used in conducting our analyses. In all of our models, we used weights to account for the ATUS Leave Module sampling frame.

RESULTS

Table 1 presents descriptive statistics for our 2017-2018 analytic sample. The weighted distribution of the sample was 64.8% White, 17.0% Hispanic, 12.2% Black, and 5.9% Asian. Most respondents worked in the private sector, predominantly at for-profit companies. Black workers were somewhat overrepresented in public-sector jobs. Most respondents worked full time, with no statistically significant differences across racial and ethnic groups. About 13% of workers across all racial and ethnic groups were covered by a union.

Just over half (54.4%) of White workers in 2017-2018 reported access to PFML, but access was significantly lower among Asian (-8.6 percentage points; P< .05), Black(-12.7 percentage points; P< .001), and Hispanic (-23.4 percentage points; P< .001) workers (Figure 1). Medical leave was the most frequently reported type of paid leave for all groups, followed by caregiving and parental leave. Black and Hispanic workers were significantly less likely to receive all 3 types of leave than White workers.

Figure 1 also shows parallel paid leave inequities in 2011, allowing a comparison of changes overtime. Access to all types of paid leave increased from 2011 to 2017-2018, but the inequity patterns remained the same. Access to paid leave among workers across all racial and ethnic groups increased overtime, but the gains among Black and Hispanic workers were no larger than the gains among White workers. Formal interaction tests did not reveal any significant changes in inequities between 2011 and 2017-2018.

Focusing specifically on the more recent 2017-2018 data, there were significant racial and ethnic inequities, particularly among workers in the private sector and those who were not covered by unions (Figure 2). Part-time workers were substantially less likely to receive paid leave than full-time workers, and there were within-group inequities among full-time and parttime workers, with Black and Hispanic workers significantly less likely than their White counterparts to receive paid leave.

Overall, however, racial and ethnic sorting by occupational characteristics is insufficient to explain the differences observed in access to PFML (Figure 3). Inequities in access to PFML persisted in models that accounted for (1) sector, work hours, and union coverage (model 1) and (2) these 3 variables along with occupation and industry (model 2). When demographic characteristics were included, Asian workers, but not Black and Hispanic workers, were no longer significantly less likely to receive PFML (model 3).

DISCUSSION

We found large and significant racial and ethnic inequities in access to PFML. Asian, Black, and Hispanic workers were 8.6,12.7, and 23.4 percentage points less likely to report access to PFML, respectively, than White workers. Notably, access to PFML was limited for everyone; just over halfofWhite workers reported access. Although access to paid leave increased over time across all racial and ethnic groups, inequitable patterns persisted. Consistent with previous research, we found that Black and Hispanic workers were least likely to have access to paid leave in both 2011 and 201 7-2018.17

Although our main finding-that PFML access is highly inequitable- stands on its own, we also conducted a series of subgroup analyses and created multivariate regression models controlling for occupational and sociodemographic characteristics. The intent of these analyses and models was not to "explain away" observed inequities but, rather, to understand what is driving inequities and the extent to which these characteristics may be responsive to policy levers.

In our analyses of access to PFML, we continued to see inequities among workers in occupational subgroups (employment sector, work hours, and union coverage) that have been or could be targeted by policies. For example,

many paid leave policies at both the organizational and public policy levels have minimum hours requirements, disproportionately excluding part-time workers. This is reflected in our results showing that part-time workers are significantly less likely to report access to PFML than full-time workers. However, we also found that within both full- and part-time subgroups, workers of color have less access to PFML than White workers. This suggests that part-time workers are being left behind by policies targeting full-time workers and that expanding coverage to part-time workers is not enough to eliminate racial and ethnic inequities in PFML access. Moreover, when we controlled for these and other occupational characteristics in multivariate regression models, we continued to see racial and ethnic inequities in PFML access.

Even after controlling for a comprehensive set of occupational and sociodemographic characteristics, we continued to see that workers of color have less access to PFML, suggesting that structural racism and even interpersonal racism28 may be contributing drivers. It is also worth questioning the value of controlling for these characteristics given that the occupational segregation that so deeply influences access to PFML is itself a product of structural racism. Should we accept that workers in certain occupations or those working part time have limited access to PFML? Or should we expect that workplace benefits that have been tied to improved health and economic outcomes for new parents, infants, caregivers, and adults dealing with serious medical conditions are equally accessible to all workers?

Limitations

Our reliance on self-reported paid leave access may be problematic. Workers may not be familiar with their benefits, especially those they have not needed to use. For example, medical leave was the most commonly reported type of paid leave, followed by caregiving and parental leave. This could reflect real differences in offering of leave or lower awareness of parental and caregiving leave among workers who have not had a need for such leave. Limited awareness of workplace benefits may be more common among workers of color who are less likely to have received information and support about leave taking from their employers than White workers. The ATUS data did not allow us to discern whether our findings reflect differential access or differential awareness; arguably, both are of equal importance and suggest that PFML policies need to include robust outreach and enforcement mechanisms. Finally, the ATUS data dl· not include several important occupational characteristics associated with PFML access such as firm size and job tenure.

Public Health Implications

The health benefits of PFML have beei increasingly well documented, but the limited access to paid leave among workers of color means that these benefits are inequitably distributed, potentially contributing to widening gaps in health across racial and ethnic groups. We observed large and significant racial and ethnic inequities in access to PFMLthat were only weakly mediated by the job characteristics analyzed. If these inequities cannot be explained by policy-targetable job characteristics, this would suggest that broad PFML mandates (such as those in other high-income countries) may be needed to substantially narrow racial and ethnic gaps in paid leave access. 4PU

Sidebar

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CONTRIBUTORS

J.M. Goodman led the drafting of the article and the conduct of the analyses. J. M. Goodman and W. H. Dow designed the statistical analyses. All of the authors conceptualized the study and contributed to the article's content.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to disclose.

HUMAN PARTICIPANT PROTECTION

No protocol approval was needed for this study because deidentified, publicly available data were used.

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Becoming the Public Health Leaders We Need to Be

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ABSTRACT (ENGLISH)

Becoming the Public Health Leaders We Need to Be Lifelines: A Doctor's Journey in the Fight for Public Health By Leana Wen 324 pp.;$27.99 hardcover, $17.99 paper, $14.99 Ebook New York, NY: Metropolitan Books, 2021 ISBN: 9781250186232

FULL TEXT

Becoming the Public Health Leaders We Need to Be Lifelines: A Doctor's Journey in the Fight for Public Health By Leana Wen 324 pp.;$27.99 hardcover, $17.99 paper, $14.99 Ebook New York, NY: Metropolitan Books, 2021 ISBN: 9781250186232

Lifelines: A Doctor's Journey in the Fight for Public Health is three books in one. First, Leana Wen, a public health physician, Baltimore's former commissioner of health, and a columnist for the Washington Post, tells the story of her life, an immigrant's journey as a young child from China to the United States and her family's determination to enable the family's daughters to do well and do good. Second, from her vantage points as a medical student, a resident, an emergency room doctor, a public health professional, and a political commentator, Wen provides a capsule history of several major public health events of the last few decades, including the continuing burden of HIV, the opioid epidemic, food insecurity, the Affordable Care Act, the rising toll of gun violence, the COVID-19 pandemic, the climate emergency, and more. Finally, Wen describes her interactions with a glittering cast of mentors and role models as well as her efforts to pay this support forward by advising, assisting, and advancing the careers of her colleagues and students and the life success of her patients.

This third focus provides a useful roadmap for public health professionals who need guidance and inspiration in becoming or seeking mentors. Over her career, Wen has accumulated an impressive list of counselors including Congressman Elijah Cummings1; Senator Barbara Mikulski; primary care physician, author, federal policymaker, and advocate Fitzhugh Mullan2; Baltimore, Maryland, mayor Stephanie Rawlings-Blake; CNN medical correspondent Sanjay Gupta; and New York Times columnist Nicholas Kristoff. Some of these connections were fortuitous, but Wen had a knack for getting advice from these well-connected leaders and offering them insights that came from her perspectives as a health care professional, immigrant, and public health advocate. All public health professionals would benefit from a deeper understanding of these reciprocal benefits of mentorship,3 and schools of public health and professional associations could better equip their students and members to succeed by teaching the skills that enable such relationships to emerge and thrive.

Wen also describes the many paths she found to support those coming up behind her. Although clearly ambitious

and determined to advance her career, Wen was also determined to open doors for women, immigrants, and people of color. In medical school, she became active in the American Medical Student Association, eventually being elected its national president in 2005. She joined campaigns to limit the role of pharmaceutical companies in medical education,4 provide debt relief for medical students, and support universal health care.

In this activism, Wen pursued two goals. Initially, she hoped to inspire other medical students to become activists and, as she wrote, "to be at the forefront of the fight for the patients we serve" (p. 55). Equally important, Wen learned that she also needed to help these aspiring activists solve the problems she too had faced, including overcoming "imposter syndrome," balancing family and work life, and confronting the daily prejudices that many non-White, nonmale medical students face.

As Baltimore health commissioner, Wen was faced with President Trump's proposed new "public charge rule" that would have jeopardized the rights of immigrants who accepted public benefits such as Medicaid and SNAP (Supplemental Nutrition Assistance Program) benefits to apply for citizenship.5 "These were the services my family had depended on," wrote Wen, "that had helped us get on our feet and enabled my parents to find permanent employment and my sister and me to pursue our education.... Would we have chosen to go hungry or forego our public education if we thought it would hurt our chances of staying in the country? ... Would I have been one of those children in cages, ripped away from my parents and denied basic care?" (pp. 211 -212).

By representing the women's movement mantra that the personal is political and the political personal, Wen provides a model for mentors-to-be that may help them challenge the common view that political action and our private lives are two separate domains. She also shows the benefits of recruiting public health leaders who have themselves experienced the risks we are charged with reducing for the public.

While presenting her three books, Wen makes some other useful contributions. First, she emphasizes the importance of developing communication skills. In current public health debates about COVID-19, abortion rights, climate change, and gun violence, to name only a few, framing the issues in ways that point to solutions, bring together constituencies with diverging views, and inspire trust in the public health enterprise is a critical skill. Moving beyond a "just the facts, ma'am" approach to science communication, Wen points to the importance of stories, listening, and community dialogue, an important lesson for all public health professionals.

Second, she insists on the possibility of being both professionals and advocates. She decided, she wrote, "that my duty as a physician was not only to provide care but also to strive for a better system" (p. 213). By normalizing this combination of roles-in fact, the public health tradition for more than a century6- Wen moves beyond the polarizing dichotomy that was formerly the conventional wisdom in academic medicine and public health.

Wen devotes limited space to a very public phase of her career, her brief stint as president of the Planned Parenthood Federation of America (PPFA).7 Hoping to provide a new direction for PPFA, she reports she had taken the job with the goal of repositioning the organization from being a leading advocate for abortion and reproductive rights into becoming a women's health organization that speaks for the health care needs of all women. Given the history of PPFA as both an advocacy and a service organization, the deeply polarized debate on abortion in the United States today, and the difficulties of expanding in an era when giant corporations increasingly control many provider systems, the transformation that Wen had envisioned seems unlikely.

Hindsight often makes complex situations seem simple, but in retrospect the apparent lack of communication between Wen and PPFA's board and hiring committee seems naive and careless on both sides and a case study for how not to seek a big new job or hire a new leader. Importantly, however, Wen's modest account of the conflict and her refusal to demonize or disrespect PPFA provides a useful model for avoiding the excesses of cancel culture and distinguishing between those with whom we disagree and those who are truly enemies of public health, democracy, and social justice. If partisans within public health and social justice movements could emulate Wen's example of civility, at least as presented in this book, we could better focus our energies on overcoming the dire public health threats the world faces today.

In summary, Wen's autobiography reminds public health readers of some of the most basic tools that we can use to protect the public health enterprise, save more lives, and pursue careers that bring political and personal

satisfaction. These tools include extracting lessons for our practice from our own lives and experiences; seeking mentoring from and providing mentoring for the present, past, and next generations of public health, academic, social justice, and clinical colleagues; and integrating rather than bifurcating our roles as professionals, researchers, and activists. By sharing her critical analysis of her life, Wen inspires readers to bring the same honesty and rigor to their lives. Âfpn

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Contact Tracing: Barriers and Facilitators

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ABSTRACT (ENGLISH)

Contact tracing-the process of identifying, isolating, and managing infected persons and their contacts-is a recognized public health measure for controlling the transmission of infectious diseases. In the context of the COVID-19 pandemic, contact tracing has received intense attention. We provide a brief overview of the history of contact tracing during several major disease outbreaks in the past century: syphilis and other sexually transmitted infections, HIV infection, tuberculosis, Ebola virus disease, and COVID-19. Our discussion on the barriers to and facilitators of contact tracing offers a perspective on societal and institutional roles and dynamics, stigma as a major barrier to effective tracing efforts, and how the nature and epidemiology of the infection itself can affect its success. We explore the evolution and adaptation of contact tracing and provide insights for future programming and research. (Am J Public Health. 2022;112(7):1025-1033. https://doi.org/10.2105/AJPH.2022.306842)

FULL TEXT

Headnote

Contact tracing-the process of identifying, isolating, and managing infected persons and their contacts-is a recognized public health measure for controlling the transmission of infectious diseases. In the context of the COVID-19 pandemic, contact tracing has received intense attention. We provide a brief overview of the history of contact tracing during several major disease outbreaks in the past century: syphilis and other sexually transmitted infections, HIV infection, tuberculosis, Ebola virus disease, and COVID-19. Our discussion on the barriers to and facilitators of contact tracing offers a perspective on societal and institutional roles and dynamics, stigma as a major barrier to effective tracing efforts, and how the nature and epidemiology of the infection itself can affect its success. We explore the evolution and adaptation of contact tracing and provide insights for future programming and research. (Am J Public Health. 2022;112(7):1025-1033. https://doi.org/10.2105/AJPH.2022.306842)

Contact tracing is acknowledged as a key strategy for controlling the spread of infectious diseases. It entails locating, isolating, and managing individuals who have an infectious disease (cases), identifying individuals who had contact with the case (contacts), and quarantining such individuals and referring them to testing and other relevant interventions.1 Timeliness and thoroughness in collecting information are critical to the success of contact tracing. In the COVID-19 pandemic, with hundreds of millions of cases reported to date, it has become critically important to monitor the spread of infection and to interrupt the potential for the ongoing spread of disease.2,3

Stigma is a major threat to the efficacy of contact tracing. Stigma is characterized as a negative attitude or behavior toward a person or a group who shares distinguishable traits of a health condition or disease. Stigma can provoke and perpetuate relations of power and control, allowing some groups to devalue others.4 It is often a response to fear or threat of a serious disease, especially one with highly uncertain and fast transmissibility.5 Evidence suggests that stigmatizing a medical condition is greatest when the condition is associated with behavior or actions that may be perceived as inconsistent with social norms6 or when its cause is regarded as one's responsibility.5,7,8

HISTORY OF CONTACT TRACING

We examine the history of contact tracing for five conditions: syphilis and other sexually transmitted infections (STIs), HIV, tuberculosis (TB), Ebola virus disease (EVD), and COVID-19. Furthermore, we explore the adverse consequences of stigma, its drivers, and its implications for health, as well as barriers to and facilitators of contact tracing.

Syphilis and Other Sexually Transmitted Infections

Syphilis remains a major public health threat worldwide, with an estimated six million new cases each year.9 It was a leading cause of morbidity and mortality in the first half of the 20th century in the United States.10 A high incidence of STIs coincided with major historical events, such as the First and Second World Wars, both ofwhich involved movements of large populations. In the mid-1940s, with the establishment of contact-tracing programs in the United

States11,12 and the availability of penicillin13 as a treatment for syphilis, rates declined for almost 40 years. The HIV epidemic emerged in the late 1980s, with an associated resurgence of syphilis in some populations, and syphilis rates have risen steadily in the United States since 2000.14

Contemporary contact tracing was initially a response for controlling syphilis and later expanded to other STIs. It is often used interchangeably with partner notification in the contexts of STIs and HIV. As part of the partner notification process, a wide range of "partner services"-including health education, counseling, and social services-is offered to index cases and their contacts. Along with reducing prevalence in the community, partner notification plays an important role in reducing reinfection rates and preventing long-term complications of STIs, offers key supports and services, and promotes healthy behaviors among those with STIs.

Contact tracing or partner notification for syphilis and other STIs was important for controlling transmission in the past century but had controversial origins that are particularly relevant to concerns about stigma. At the end of the 19th century, stigmatizing individuals with STIs was fueled by early public health ordinances aimed at controlling a widespread syphilis outbreak across the United States and Western Europe. Such decrees were highly intrusive and punitive to those infected or suspected of being infected. As public health had long associated prostitution with STIs and STI transmission, this placed a great burden on those who engaged in sex work. These were often poor and vulnerable women, and they were made to submitto severe restrictions, including registration and compulsory, and frequently humiliating and unsanitary, medical inspections.

In the United Kingdom, the Contagious Disease Acts of 1864 and 186615 mandated regular medical examinations and hospital detention of these women. In the United States, the St. Louis Social Evil Ordinance16 ordered the detention ofwomen diagnosed with STIs in "social evil hospitals," and the Illinois Board of Health17 mandated the hospitalization ofwomen of suspected illness and posted signs on their homes warning that a person with suspected venereal disease resided in the home.

By the early 20th century, the development of modern contact tracing was being shaped by social reforms and a public outcry against such stigmatizing ordinances.18-22 Contact tracing was accompanied by medical advances that included an understanding of syphilis's pathogenesis with the identification of the bacterium that causes syphilis. Extensive public education campaigns were launched, resulting in the expansion of governments funding clinics that offered free, voluntary, and confidential treatment. Public policy reflected such progress. For example, in the United Kingdom, the 1968 and 1974 regulations outlined the process and best practices of contact tracing with an emphasis on protecting confidentiality,23 and in the United States, the 1938 National Venereal Disease Control Act provided support to STI control programs and made contact tracing a key feature of such programs.24

Although contact tracing for STIs has evolved to include linkages to prevention and treatment and care for index patients and their contacts, stigma remains a key barrier. This stigma deters individuals from partner notification and discourages discussion regarding STIs with partners and health care providers to avoid disclosing names to inform contact tracing.25-27

HIV Infection

The emergence ofthe HIV epidemic raised several other important ethical questions regarding partner notification. One such concern centered on the primacy of individual rights versus public health concerns.28,29 The HIV disclosure debate has been complicated by societal views, particularly the stigmatization of people living with HIV and the criminalization of HIV transmission.30-32 These issues created conditions that hindered frank, open discussions between people living with HIV and their providers to enable partner notification.

HIV-related stigma has been defined as the "process of devaluation" of people living with HIV and is often triggered by the rejection of "socially unacceptable" behaviors regarding sex and intravenous drug use, both routes of HIV infection.33 This can be accompanied by discrimination, or the unfair and unjust treatment of an individual based on real or perceived HIVstatus.34 Consequently, HIVrelated stigma is a major challenge for disease prevention and has critical implications for physical and mental health outcomes, including depression, feelings of isolation and abandonment, increased substance use, and inconsistent adherence to treatment and care.34-37

Furthermore, people living with HIV have faced repressive policies and penalties for the perceived or potential

transmission of HIV, and even the nondisclosure of HIV status.38,39 More than 70 countries have HIV criminal statutes, including 29 in sub-Saharan Africa, 19 in Europe and Central Asia, 14 in Latin America and Caribbean, 11 in Asia-Pacific, and both Canada and the United States in North America.39 Currently in the United States, 32 states and 2 territories have HIV exposure and disclosure laws that impose criminal penalties, including incarceration.40,41 In addition, there are statutes that permit correspondence between the justice system and public health authorities about suspected HIV cases.42 Some states require individuals to sign acknowledgment of potential criminal liability as part of counseling after testing positive for HIV.43 Others classify persons who violate HIV laws as violent sex offenders regardless of whether the behavior posed low to no risk of transmission or was motivated by intent to infect or harm.41 Numerous arbitrary arrests and prosecutions have occurred as a result.44

Overall, stigma and discrimination as well as punitive laws and repressive policies have hindered voluntary partner notification.32,45 In response, rather than adopting a universal strategy, partner notification for HIV has been conducted through a variety of strategies. Known as passive or assisted partner notification, this is accomplished through patient referral, provider referral, contact referral, or dual referral. With each strategy, it is standard practice to refer or link exposed individuals to HIV testing, treatment, and prevention services based on the results of HIV testing.

It should be noted that partner notification for HIV in its various forms has proven to be feasible, acceptable, and effective.46,47 In the United States, for example, one study showed that 15% of partners tested by partner services were positive for HIV and previously undiagnosed.48 In Kenya, data from a two-year assisted partner services study indicated that HIV-related deaths were reduced by 13.7% in sexual partners receiving such services.47 Another study, conducted in Malawi, in which people living with HIV were randomized to one of three methods of partner notification (i.e., passive referral, contact referral, or provider referral) found that 24% of exposed partners who were identified and located went to a health facility through passive referral, 55% through contact referral, and 51 % through provider referral.49 Furthermore, among returning partners, 64% tested positive for HIV, with 81% of HIV-positive individuals being newly diagnosed.49

Tuberculosis

Tuberculosis (TB) is the leading infectious disease cause of death globally, claiming 1.5 million lives each year.50 For most of the 19th century, TB was the leading cause of death in the United States. In the early 20th century, Hermann Biggs, New York City's health commissioner, developed a TB control program that centered on contact tracing efforts, including home visits by health inspectors to screen household members, mapping cases by neighborhood, confinement of cases, and robust community outreach and education campaigns.51,52 This resulted in a 47% increase in reported TB cases in six years.53 Contact tracing combined with improvements in living conditions and availability of effective treatments resulted in a steady decline in TB mortality during the 20th century.54 However, with the advent ofthe HIV epidemic, a resurgence of TB required the scale-up of contact-tracing efforts forTB cases in the 1990s in the United States and globally.55

Although once considered "elegant suffering" and a transcendent experience, TB was eventually reconstructed as a social disease in the 19th century, when perceived objectionable behaviors, conditions, and groups of people became associated with transmission.56 For example, although the TB control program established by Biggs in New York City raised health and hygiene awareness, some of its features sparked stigma, fear, and secrecy and highlighted disparities between the rich and the poor. Once an individual was identified as having TB, the person was ordered to isolate or seek clinical services, with different requirements based on economic status. Wealthier individuals had the option to pay a private physician to keep their diagnosis discreet or to seek care at exclusive sanatoriums and were not required to engage in contact tracing. Poorer individuals, conversely, were confined, often against their will, in crowded TB wards at city hospitals or public sanatoriums, resulting in many ofthe working poor delaying health care in the fear of a TB diagnosis and its repercussions.

As with other stigmatized diseases, individuals diagnosed with TB can experience long-lasting social and economic implications, including exclusion from family and society and job loss because of fear of contagion. The impact of TBrelated stigma on contact-tracing efforts has been well documented. For example, a qualitative study among

former TB patients in Thailand found that stigma may be the main barrier to contacttracing investigations among nonhousehold contacts because patients tended to withhold information about workplace contacts, resulting in workplace outbreaks.57,58 For identified contacts, anticipated TB stigma further hinders the goal of contact tracing by leading to significant delays in diagnosis and treatment.59,60

Evidence indicates that health education and support programs for individuals with TB, health care providers, and the community have been important for reducing TB stigma and facilitating effective contact tracing.61,62 The empowerment of TB patients may also be a critical factor in reducing TB stigma, as evidenced by patient TB support clubs in Ethiopia and Nicaragua, which have helped reduce isolation, provide critical counseling, and promote adherence to treatment.62,63 It has also been suggested that lessons from HIV may be relevant for reducing TB stigma by applying a rights-based approach.64

Although important-particularly in view of the availability of effective TB preventive therapy for contacts of those diagnosed with TB and strong recommendations by the World Health Organization in support of contact tracing-contact tracing for TB is, unfortunately, not consistently conducted.65 In Kenya, a country with a high TB burden, a study reported that close to half of persons with TB were not notified.66 In Thailand, another study demonstrated that almost half of eligible TB cases did not refer their household contacts to the clinic for further investigation.57 In Brazil, a study found that less than 20% of contacts of those with TB were reported or assessed, with no information available on uptake of isoniazid preventive therapy.67

Ebola Virus Disease

Since its discovery in 1976, the Ebola virus has resulted in more than 20 outbreaks, mostly in sub-Saharan Africa, with an average case fatality rate of approximately 50%.68 Containment and control have been critical in controlling such outbreaks, combined with community education, health worker training, and intensive case-finding and contact-tracing efforts.69,70

The 2014-2016 Ebola outbreak in the West African countries of Guinea, Liberia, and Sierra Leone was the largest to date, resulting in more than 28 000 total cases and more than 11 000 deaths, surpassing the combined effects of all previous outbreaks.71-73 In these countries, contact tracing was challenged, with community mistrust manifesting in hostility toward contact tracers, which resulted in new chains of transmission contributing to sustained community transmission.74 In addition, contact tracers were also stigmatized based on concerns regarding interaction with patients. Forthose identified as contacts, stigma associated with Ebola discouraged engagement with contact-tracing efforts and seeking care because of the risk of being ostracized by family and other community members. For example, in Liberia, the stigma associated with being a contact occasionally led to fleeing from health authorities.75 In Sierra Leone, economic and social pressures to maintain livelihood pursuits also drove contacts to evade protocols, increasing the risk of transmission to others.76 These challenges were also aggravated by the shortage of trained contact tracers as well as inconsistent strategies and techniques for tracking contacts.74

Key strategies for mitigating stigma in contact tracing for Ebola include clear and consistent communication between community and health authorities, engagement of community members, and awareness of cultural traditions and practices.77,78 In rural Guinea, a community engagement project involving local leaders and organizations helped raise awareness about Ebola, reduced resistance to humanitarian actors and health personnel, and, thus, improved contact-tracing efforts. Similarly, a survey of epidemiologists who were deployed to West Africa during the 2014-2015 Ebola outbreak noted that cultural awareness of local traditions along with community mobilization and capacity building were essential for successful contact tracing and overall crisis response.79

COVID-19

To date, more than 500 million COVID-19 cases and more than 6 million deaths have been reported worldwide.80 The extent to which contact tracing can mitigate the spread of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the virus that causes COVID-19, depends on the magnitude of community transmission. For example, in Singapore, contact tracing was deployed early in the pandemic and yielded early success; this contributed to the detection of approximately 53% of COVID-19 cases.81 However, in the United States, the sheer number of cases during the various surges of the pandemic rendered effective contact tracing difficult. In June 2020,

for example, as some states reported more than 20 000 cases per day, only seven states and Washington, DC, met the Centers for Disease Control and Prevention's recommendation of having 30 contact tracers per 100 000 residents.82 The surge attributable to the omicron variant has made contact tracing of limited effectiveness, which necessitates the adjustment of such programs.83

Community mistrust also prompted public reluctance to cooperate with contact tracers in relation to COVID-19. According to a survey of more than 10 000 US adults in July 2020,41% of adults said they would not be likely to speak with a public health official by telephone or text message about COVID-19, and 27% would not be comfortable sharing names of potential contacts.84 A survey in Los Angeles, California, noted that less than 60% of people with COVID-19 agreed to an interview with contact tracers in August 2020.85

As noted with other infectious diseases, stigma has been one of the reasons for people's reluctance to disclose contacts' names. For example, a survey among new and established Latinx immigrants in Indiana, which was conducted in April and May 2020, found that immigrants were four times more likely than were nonimmigrants to report that a person should fear disclosing their COVID-19 diagnosis to others and that disclosing such information would make a person feel like an outsider and result in losing friends.86 Additionally, fear of stigmatization was identified at the beginning of the pandemic as a barrier for the uptake of contact tracing apps because many worried that, if diagnosed, others would be able to identify them through the app's geolocation capabilities.87 Whether because of privacy concerns, fear of stigmatization, or fear of losing one's job if ordered to quarantine, several studies and news articles have cited these issues as barriers to contact tracing for COVID-19 88-90 At present, approximately 65 countries report having comprehensive COVID-19 contact-tracing programs for all cases, and 62 countries indicate having limited contact tracing for some of their cases.91 For some countries with comprehensive contact tracing, technology has played a significant role. It is recognized that digital contact tracing has the potential to revolutionize the practice with mobile apps that directly notify contacts of potential exposure through Wi-Fi, Bluetooth, or GPS technology.92 However, the use of such technology and location-tracking services has elicited privacy concerns in the United States and elsewhere, affecting their acceptance and use.90,93

CONTACT-TRACING FACILITATORS, BARRIERS

Several barriers and facilitators have been identified that influence the feasibility and effectiveness of contact tracing (Box 1). First, the characteristics of the specific condition can affect the feasibility and success of contact tracing. For infections that are transmitted through casual contact (e.g., TB and COVID-19), contact tracing is more difficult because of the large number of potentially exposed contacts and the real possibility of not knowing the identity of such contacts. By contrast, for pathogens transmitted through bodily fluids, such as Ebola and HIV, the identification of contacts is usually more feasible. Additionally, the quarantine required for contacts of those who have COVID-19 or EVD requires strict separation from others for several days, whereas contacts of individuals diagnosed with HIV orTB are not required to be separated from others, but rather need to undergo careful assessment and initiate HIV orTB preventive therapy.94,95

In addition, the duration of the disease (i.e., chronic vs acute) and time from exposure to symptom onset (i.e., incubation period) can complicate contacttracing. EVD and COVID-19 are acute infections with short incubation periods ranging from 2 to 21 days. This necessitates prompt identification of contacts to quarantine them and stop cycles of transmission. By contrast, for chronic infectious diseases such as HIV and TB, the longer period from exposure to detection of infection or disease provides contact tracers more time to alert exposed contacts before they may unknowingly transmit the infection to others and allows time to guide such individuals to appropriate prevention interventions.

Second, testing, which allows diagnosis and initiation of case investigation, is a crucial first step. This was a challenge early in the COVID-19 response, when there was insufficient SARS-CoV-2 diagnostic capacity and delays in return ofresults, both major impediments in rapid case identification and effective contact tracing in many parts of the world.96-98 Additionally, the availability of effective treatment can motivate individuals with suggestive symptoms to seek testing and care. When no treatment was available, as was the case until recently for EVD and COVID-19, individuals may be deterred from getting diagnosed and ultimately delay initiation of contacttracing

efforts.

Third, notwithstanding the effect of stigma in limiting the effectiveness of contact tracing, several interventions have been shown to help mitigate stigma. In the case of STIs and HIV, a combination of activism, public support, and social reforms helped bring necessary change to the way these conditions are perceived and to the way public health measures are shaped to restore confidence in the public health system. Partner notification and its referral system have incorporated protections of confidentiality as well as prioritized linking cases and contacts with diagnostic, treatment, and prevention services.99 Activism helped galvanize the HIV community into social change, creating policies that affirm and uphold the rights of people living with HIV. In combating TB stigma, education and support programs for TB patients, health providers and the broader community have aimed to overcome stigmatizing social norms.64,65

EVALUATING CONTACT-TRACING EFFECTIVENESS

Whether contact tracing is successful at reducing transmission is typically measured by applying epidemiological assumptions to programmatic outcomes. Such measures include the number of case investigations within a specific period, the number of contacts provided by cases and percentage notified of exposure within a specific period, and the number of cases and contacts who complete isolation and quarantine. A study conducted in the United Kingdom used a model of individual-level SARS-CoV-2 transmission based on data from more than 40 000 individuals and simulated the effects of different control measures assuming an estimated reproduction number of 2.6 and the number of contacts that would be newly quarantined per day.100 The study noted that the combination of isolation and contact tracing with quarantine would lead to the greatest reduction in transmission (64%).100

Simulation models of TB transmission examined the effect of household contact tracing in scenarios in which 22% and 50% of TB transmission occurs in the community and household, respectively, and found that household contacttracing is unlikely to influence TB epidemiology.101 However, the same study found that contact tracing has the potential to initiate preventive therapy that could, in turn, reduce populationlevel TB burden.101 In the case of EVD, early-stage contact tracing paired with rapid hospitalization of infected individuals has also been found to be effective at impeding epidemic growth by bringing the effective reproduction number below 1 -a key indicator of reduced transmission.102

In a study conducted in the United Kingdom, a data coding error led to more than 15 000 cases being excluded from contact tracing efforts, leaving 48 000 contacts unnotified. Researchers found that cases included in contacttracing efforts were associated with a 63% reduction in subsequent new infections and a 66% reduction in subsequent COVID-19-related deaths over the six-week period following the coding error.103

CONCLUSIONS

The history of contact tracing highlights the important role that individuals, societies, and the health system can play in safeguarding public health. Even with the availability of vaccines and other prevention and treatment tools, contact tracing is necessary to identify exposed individuals at risk and to navigate them to the services they require. Yet, the success of contact tracing hinges on the public's cooperation and engagement and on resources being available to support such efforts. At this moment in history when the global community is acutely aware of the threat that infectious diseases pose to all and when we have learned so much from the COVID-19 pandemic, it behooves us to examine how best to support and conduct contact tracing, how to tailor it to specific conditions, how to ensure the confidentiality of information collected, and how to prioritize those most at risk and provide them with the support they need to adhere to public health guidance. j&Acedil;VW

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CONFLICTS OF INTEREST

The authors have no competing interests to declare.

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DETAILS

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Is It Time to Restructure the National Institutes of Health or Research Mindsets?

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ABSTRACT (ENGLISH)

The main thesis of the article by Hekler et al. (p. 965) in this issue of AJPH is important and worthy of discussion. Their ideas on epistemic exclusion according to race (and other characteristics) are strong, have previously been raised, and need to be addressed further.1 However, the essay opens with an argument for restructuring the National Institutes of Health (NIH) but ends with an alternative pathway. It lacks evidence to support some of its claims and does not provide certainty of outcomes if indeed such changes are made. A more balanced perspective is needed, especially given that the return on NIH investments is clear in terms of health and medical advancements over decades.

These arguments to restructure the NIH should not be used to judge the efforts ofthe biomedical community to fight racism. For example, the NIH UNITE initiative (as noted by the authors) was established to identify and address structural racism within the NIH and the greater scientific community.2 The initiative aims to "establish an equitable and civil culture within the biomedical research enterprise and reduce barriers to racial equity in the biomedical research workforce."2 These and other current efforts across the research enterprise will have a positive impact on the larger scientific community in moving toward racial equity with the strong engagement of external groups, especially marginalized populations.

FULL TEXT

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ACTUAL BREADTH OF NIH-FUNDED RESEARCH

Hekler and colleagues' thesis that the NIH is focusing on its mission primarily via biomedical research appears to be a traditional view of NIH investments.

In reality, the term "biomedical" is not included anywhere in the NIH mission (seeking fundamental knowledge about the nature and behavior of living systems and applying that knowledge to enhance health, lengthen life, and reduce illness and disability). In addition, the NIH has major programs in (nonbiomedical) areas such as ethical, legal, and social implications of disease; implementation science; research communication and dissemination; and capacity development and research strengthening.

Moreover, the apparent assumption that the NIH should be funding all types of research is confusing. In this scenario, what would be the role of other complementary research funders such as the Centers for Disease Control and Prevention and the Health Resources and Services Administration? In a pluralistic system such as that ofthe United States, an argument that there should be only one funding source for all health research is not viable.

Some ofthe data mentioned by Hekler et al. (e.g., 22% of NIH funding is devoted to social/behavioral research) are based on the primary categorization of each research investment as opposed to its coverage of other issues; thus, an HIV project focused on multiple causes, including cultural causes, may be classified as "biomedical." Similarly,

the authors incorporate "public health" in their list of excluded epistemic fields, which is contestable. Schools of public health are major recipients of NIH funding, they have a strong history and stream of annual applications to the NIH, and their faculty engage with the NIH on a daily basis.3 It is true that portions of public health research are not funded by the NIH, but the implication that all public health research should be funded by the NIH is again not necessarily appropriate.

UNCLEAR ATTRIBUTIONSAND CHARACTERIZATIONS

The incredible biomedical innovation around the development ofthe COVID-19 vaccines was undeniably the outcome of concerted investments in the biomedical components ofthe NIH (as stated by the authors).4 To attribute misinformation, antivaccine sentiment, political ideology, and the politicization of COVID-19-associated health issues to a lack of multiepistemic funding at the NIH is incredulous. It is not the NIH or NIH fundingthat is at stake in these complex and politicized sets of issues but, rather, a much wider array of societal and political factors.5

Similarly, partnerships are already present and highly dominant in many streams of NIH funding, including HIV and even global health, in which interdisciplinary, community-engaged, policyrelevant research (among other types of research) is invited and encouraged. Moreover, ifthere are in fact policy community frustrations, we would see declining funding to the NIH, but in fact funding has gone up, even in the most recent allocations.6

The discussion of trust in scientific knowledge, although based on a philosophical approach and theoretically tenable, ignores the current reality of how trust in science has broken down in practice in the contemporary era owing to what can be termed unfettered inclusion of raw opinions, ideology, and racism. Most health researchers will agree that race is a social construct, but how it is not recognized at the NIH is unclear; requests from the NIH repeatedly remind applicants of the expansive definitions of such terms and allow investigators wide latitude to explore these constructs.7

HOW BEST TO IMPROVE WHAT IS ALREADY MULTIEPISTEMIC

Importantly, Hekler et al. do not provide concrete evidence as to why the current setup at the NIH is not multiepistemic. How does the presence of 27 centers and institutes that cover diseases (e.g., heart and lung disease), risk factors (e.g., alcohol abuse), contexts (e.g., the environment), and vulnerable populations (e.g., women and children) not convey a broad reach across human and planetary health? It is unclear how a proposed restructuring along the lines presented in the authors' supplementary materials (assuming that is their proposed counterfactual) would make the NIH more "multiepistemic" and better for heath research and health outcomes than the current structure.

The proposal for new institutes along two axes-determinants and processes-is a limited perspective from a multiepistemic view and suffers from some of the issues raised by the authors (e.g., misclassification of behavioral and social determinants, overlap and duplication between research focused on health systems, health services, populations, and communities). Moreover, it is unclear what a priori criteria (or principles) would be used to evaluate such a system, especially given that no existing research funding system (anywhere in the world) has been suggested as a model.

It is vital to reduce epistemic injustice through reduction of epistemic exclusion in all forms of research, including biomedical, social science, and applied. This will require a change of mindset in the overall research ecosystem akin to the changes needed in society. Hekler and colleagues' proposed process solution (as displayed in their figure) may be one way to proceed; however, others include strengthening UNITE and related initiatives and enhancing the NIH Institute on Minority Health and Health Disparities.8 It is also true that biomedical solutions are not all encompassing, but the authors' interpretation ofthe NIH mission does not make it fair to claim that it is a universal belief at the NIH, or in the health community, that those solutions are the only solutions for health and society or the only ones worth funding. In fact, the entire research enterprise, especially that within the academic sector, can be held accountable for its impact on the lives of people, particularly those who are vulnerable. Â1PU

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DETAILS

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Fruit and Vegetable Prescription Program for Diabetes Control Among Community Health Centers in Rural Idaho and Oregon

Gordon, Barbara, EdD, RDN, FAND; Ridinger, Sarah, MHA; Krick, Rae, MS, RDN, LD; Grosvenor, Lindsay, RDN, LD, CD; Charron, Renee, LMSW, CSWA

ABSTRACT (ENGLISH)

A Fruit and Vegetable Prescription program (12-16 weeks, 2018-2020) was implemented at community health centers serving rural communities in the northwestern United States. The impact of the program on type 2 diabetes control was evaluated. Reductions in mean hemoglobin A1C were statistically significant (P< .01). The percentage of participants with critically high blood glucose levels (A1C >9%) decreased from 76% (114/151) to 41% (62/151; P <.01). The findings mirror those of similar programs. The sustainability of these beneficial interventions, however, relies on improved access to preventive care. (AmJ Public Health. 2022;112(7):975-979. https://doi.org/10.2105/AJPH.2022.306853)

FULL TEXT

Headnote

A Fruit and Vegetable Prescription program (12-16 weeks, 2018-2020) was implemented at community health centers serving rural communities in the northwestern United States. The impact of the program on type 2 diabetes control was evaluated. Reductions in mean hemoglobin A1C were statistically significant (P< .01). The percentage of participants with critically high blood glucose levels (A1C >9%) decreased from 76% (114/151) to 41% (62/151; P <.01). The findings mirror those of similar programs. The sustainability of these beneficial interventions, however, relies on improved access to preventive care. (AmJ Public Health. 2022;112(7):975-979. https://doi.org/10.2105/AJPH.2022.306853)

For low-income populations, Fruit and Vegetable Prescription (FVRx) programs address some barriers to adopting healthy eating patterns.1 The Wholesome Wave FVRx program empowers participants to select healthy options and thereby helps to manage nutrition-related chronic diseases.2

INTERVENTION AND IMPLEMENTATION

Employing social cognitive theory, the program promotes behavioral change by increasing access to produce and fostering self-efficacy (individual or group appointments, cooking classes). In addition, produce prescriptions (vouchers or gift cards) are a complementary treatment for managing chronic disease.1-3 This model has been found to effectively improve diabetes control.1,2 The Navajo FVRx program exemplifies how to tailor the Wholesome Wave model for specific communities.1 Of note, residents of rural communities experience high rates of obesity and physical inactivity coupled with poor dietary choices; thus, the need for FVRx programs for this population emerges.4

Implementation strategies were lored to population. Food security status was evaluated using the validated Hunger Vital Sign.5 Counseling with registered dietitian nutritionists (RDNs), behavioral health counselors, or pharmacists was offered. Household size determined the value of the monthly FVRx vouchers supplied (1 person 5 $10; $ 8 people = $50). Vouchers were redeemable at neighborhood grocery stores and a mobile farmers market set up in a clinic parking lot once a week. One Federally Qualified Health Center offered participation incentives ($5 gift card, raffle to win cookware). Given the severe sociodemographic barriers of the population, program completion was defined as attending at least one activity and at least 1% voucher redemption.

PLACE, TIME, AND PERSONS

Across 12 to 16 consecutive weeks (2018-2020), the Wholesome Wave program2 was implemented at Federally Qualified Health Centers in rural Idaho and Oregon. Health care providers enrolled an unblinded, convenience sample of high-risk adults (positive diabetes diagnosis, hemoglobin A1C above normal limits).

PURPOSE

This project evaluated the efficacy of an FVRx program to improve diabetes control among rural, low-income adults (at or below the poverty level) with severe sociodemographic barriers to optimal health. Statistical analysis employed SPSS version 27 (SPSS Inc, Chicago, IL).

EVALUATION AND ADVERSE EFFECTS

Of the 333 adults (aged $ 18 years) enrolled, 52% (172/333) completed the program (Appendix A, available as a supplement to the online version of this article at http://www.ajph.org). A1C data were missing from 12% (21/172) of

the completers, and postintervention A1C data were not available for those who did not complete the program. Analysis of postintervention data therefore included 151 records of program completers.
The attrition rate for incentivized participants was 30% (17/57), compared with 48% (161/333) overall. Ridberg et al. reported a 1% to 26% attrition rate for a comparable population and program3; however, severe sociodemographic barriers and COVID-19 yielded a high attrition rate for this program. Limited funding and clinician time inhibited quickly pivoting in-person activities to an online format. In addition, access to technology was a challenge for participants, so program activities were disbanded. Vouchers and educational materials were mailed to participants. The vouchers, however, required in-person redemption, and grocery stores were operating under new processes and with limited staff and resources. Also, given the stay-athome order, many of the participants were reluctant to go out to redeem the vouchers.
The mean participant age was 53.7 ±10.5 years (range = 22-96 years). Participant household sizes ranged from one to 10 people (mean = 3.5 ±2.2 people). More than one quarter (40/ 151,27%) lived in two-person households; three participants lived in 10-person households. Food insecurity was prevalent (91/151,60%). Participants were primarily Caucasian/White and Latinx/Hispanic (80/151 [53%] and 56/151 [37%], respectively). The mean baseline A1C for participants was 10.3 ±2%. None ofthe participants had preintervention A1C readings within normal limits or the controlled range.
At least once during the intervention, most participants (127/151 [84%]) met with an RDN (82/151 [54%] individually and 47/151 [31%] by group appointment). A small percentage attended appointments with behavioral health specialists (15/151 [10%]) or pharmacists (4/151 [3%]). Nearly half (69/151 [46%]) attended at least one of 12 cooking classes. Actual produce purchased ranged from 4% to 100% ofthe dollar amount of vouchers supplied (mean voucher redemption rate = 60% ±28%).
Results of paired ttests showed statistically significant reductions in A1C readings (95% confidence interval) by sociodemographic factors between program completers and noncompleters. Postintervention A1C readings for more than 13% of participants were within normal limits or the controlled range (5/151 and 14/151, respectively). The percentage of participants who started with critically high A1C readings was reduced by more than one third (114/151 [76%] preintervention; 62/151 [41%] postintervention; P <.01). Participants aged 30 to 59 years and those from two- and threeperson households experienced significant reductions in A1C (P <.01). Food-insecure participants experienced a greater beneficial change in A1C than food-secure participants (1.8 ±2.4 and 0.8 ±2.2, respectively). Mean reductions were statistically significant for all voucher redemption rates (P <.01) and for both incentivized and nonincentivized participants (P <.01; Table 1).
Linear mixed effect models were used to explore the associations between the program components (predictors) and variations in A1C (outcome), given the sociodemographic differences for each participant (95% confidence interval). The sample sizes for participants meeting with behavioral health specialists or pharmacists were small (15 and 4, respectively); these program components were therefore not included. There were no significant main effects for dietary counseling by an RDN, attending a group session led by an RDN, or participating in a cooking class. Table 2 provides pre- and postintervention mean A1C readings for unadjusted models and for adjusted models for age and race/ethnicity. Adjusted analyses for the other sociodemographic variables are not reported as the models did not converge.
Program participation incentives have been found to promote shortterm health behaviors.6 The incentives may therefore affect the long-term sustainability of A1C reductions for incentivized participants.
SUSTAINABILITY
In a review (100 articles), the authors concluded that cost-benefit analysis supports the efficacy of FVRx programs for improving health outcomes.7 Participation in this FVRx program significantly improved diabetes control among rural, low-income participants. The grant funding supporting the program, however, was short-term.
Sustainability relies on expanded reimbursement for FVRx programs. Because the RDNs served as both program managers and health care providers, the programmatic and clinical successes are reflective of their ability to assume dual roles. Currently health insurance does not reimburse RDNs for preventive health services. The need

for improved access to RDNs for these services precipitated.

PUBLIC HEALTH SIGNIFICANCE

For decades, the public health community has been discussing the unfavorable impact of the social determinants of health-including economic and food insecurity-on chronic disease prevalence and management. Pem and Jeewon found an association between food insecurity and increased risk of inflammatory diseases (e.g., diabetes).7 They note the need for programs to reduce the prevalence of food insecurity as a strategy to decrease the risk and severity of chronic diseases. Of note, FVRx programs were found to increase access to healthy foods and improve eating patterns among Supplemental Nutrition Assistance Program (SNAP) households.1

FVRx programs offer an evidencebased strategy for addressing food insecurity and access to care. The provision of a multicomponent FVRx program was associated with short-term reductions in blood glucose levels. By using dietary modifications to help manage diabetes, these programs help control the associated health care costs.6 Furthermore, given that vouchers were distributed on the basis of household size, this FVRx program allowed other household members to benefit from increased intakes of produce.1 ÂfPU

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R. Krick, L. Grosvenor, and R. Charron designed and Implemented the program. S. Ridinger oversaw the program. B. Gordon evaluated the program and wrote the first draft of the manuscript. S. Ridinger, R. Krick, and L. Grosvenor reviewed and edited the manuscript.

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CONFLICTS OF INTEREST

None of the authors have conflicts of Interest to report.

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The Idaho State University institutionalreview board deemed the analysis of the program data to be exempt from Title Code of FederalRegulations, Part 46[45CFR 46], as It was an outcomes assessment.

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DETAILS

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Robust Hepatitis A Vaccination Response Within the United States Veterans Health Administration in the Wake of State Outbreaks

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ABSTRACT (ENGLISH)

We assessed hepatitis A (HepA) vaccine receipt among susceptible individuals in outbreak and matched nonoutbreak states. Difference-in-differences models and multivariable logistic regression were used to compare HepA vaccination rates in these states. In the postoutbreak year, there was a 112% increase in HepA vaccinations in outbreak states versus a 6% decrease in nonoutbreak states. Differences persisted in our multivariable model (adjusted odds ratio = 2.53; 95% confidence interval = 2.45, 2.61). HepA vaccination rates increased dramatically in outbreak states, but many individuals susceptible to hepatitis A virus remain unvaccinated. (Am J Public Health. 2022;112(7):990-994. https://doi.org/10.2105/ AJPH.2022.306845)

FULL TEXT

Headnote

We assessed hepatitis A (HepA) vaccine receipt among susceptible individuals in outbreak and matched

nonoutbreak states. Difference-in-differences models and multivariable logistic regression were used to compare HepA vaccination rates in these states. In the postoutbreak year, there was a 112% increase in HepA vaccinations in outbreak states versus a 6% decrease in nonoutbreak states. Differences persisted in our multivariable model (adjusted odds ratio = 2.53; 95% confidence interval = 2.45, 2.61). HepA vaccination rates increased dramatically in outbreak states, but many individuals susceptible to hepatitis A virus remain unvaccinated. (Am J Public Health. 2022;112(7):990-994. https://doi.org/10.2105/ AJPH.2022.306845)

Hepatitis A virus (HAV) is a vaccine-preventable viral infection resulting in fatigue, jaundice, and, rarely, liver failure and death.1 Multiple large outbreaks occurring since 2016 have resulted in more than 43 000 HAV infections, 26 290 hospitalizations, and 402 deaths.2 The Advisory Committee on Immunization Practices recommends hepatitis A (HepA) vaccination for populations at risk for HAV infection or increased disease severity (i.e., high-risk patients), including those with illicit drug use, liver disease, or HIV and those experiencing homelessness.3

INTERVENTION AND IMPLEMENTATION

The Veterans Health Administration (VHA) provides health care for a large number of these high-risk patients.4,5 We aimed to describe rates of HepA vaccine receipt and factors associated with HepA vaccination within the VHA in outbreak and nonoutbreak states.

PLACE, TIME, AND PERSONS

We derived our data from the VHA Corporate Data Warehouse, which includes inpatient and outpatient health care data.

We selected four outbreak states (Florida, Kentucky, Indiana, and Washington) a priori on the basis of geographic diversity and statewide HAV outbreak declarations. We chose nonoutbreak control states (Texas, Maryland, Wisconsin, and Oregon) matched to outbreak states according to census region and population size. We identified all patients in VHA care within a year before and after HAV outbreak onset (Figure A, available as a supplement to the onlineversion of this article at http://www.ajph.org). Outbreaks were later declared in Texas and Maryland, but these events began after our study period.

To define the denominator of patients who might benefit from HepA vaccination, we identified all individuals who were susceptible to HAV as a result of a lack of HAV immunity. HAV immunity was defined as follows: (1) active military service during or after 1996, when the Department of Defense mandated HepA vaccination; (2) documented receipt of one or more HepA vaccinations within the VHA; or (3) prior positive anti-HAV antibody (immunoglobulin G, immunoglobulin M, ortotal antibody) testing within the VHA.6

PURPOSE

As our primary outcome, we identified HAV-susceptible patients who received one or more HepA vaccinations within the VHA in the year prior to outbreak declaration (as compared with the year after outbreak declaration; Figure A). For control states, vaccinations were similarly assessed before and after outbreak onset dates in paired states matched with respect to size and region.

We assessed HepA vaccination rates per 100 000 overall and among high-risk groups (those experiencing homelessness, HIV, hepatitis C virus [HCV], hepatitis B virus [HBV], or cirrhosis; Figure A) in outbreak and nonoutbreak areas and compared vaccinations in preoutbreak and postoutbreak years. We used a two-group, two-period difference-in-differences binomial model to assess HepA vaccine receipt in the VHA after outbreak onset.7 We used multivariable logistic regression modeling to estimate the association between the baseline characteristics of HAV-susceptible individuals and subsequent receipt of HepA vaccine. SAS version 9.4 (SAS Institute Inc, Cary, NC) was used in conducting all of our statistical analyses.

EVALUATION AND ADVERSE EFFECTS

We identified 1 392 682 HAV-susceptible individuals located in the outbreak (n 5 753 863) and nonoutbreak (n 5 638 819) states (Table 1). Trends in quarterly preoutbreak HepA vaccination rates were similar in outbreak and matched nonoutbreak states (Figure B, available as a supplement to the online version of this article at http://www.ajph. org). In the year following state outbreaks, there was a 112% increase (212. 7 to 451.1 per 100 000) in HepA vaccinations in outbreak states relative to the previous year, in contrast to a decrease of 6% (287.7 to 270.8 per 100 000) in

nonoutbreak states (difference-in-differences relative risk ratio [RR] 5 2.25; 95% confidence interval [CI] 5 2.04, 2.48; P <.001). All outbreak states had greater vaccination rate increases than nonoutbreak states in the year following outbreaks (Table 2).

In outbreak states, the largest relative increases in HepA vaccinations occurred among those with HBV (94%) and those experiencing homelessness (19%). At the conclusion of follow-up (December 31,2019), substantial percentages of patients in outbreak and nonoutbreak states remained susceptible to HAV, including 47% of patients experiencing homelessness and 33% of patients with cirrhosis, 21% with HIV, 24% with HBV, and 39% with HCV.

In the multivariable logistic regression model, residence in an outbreak state was associated with significantly greater odds of receiving HepA vaccine (adjusted odds ratio 5 2.53; 95% CI 5 2.45, 2.61) after adjustment for age, sex, race, ethnicity, rural/urban area of residence, homelessness, and high-risk comorbidities.

Other factors significantly and positively associated with adjusted odds of vaccination included HIV, HCV, HBV, cirrhosis, and rural or highly rural residence, as well as experiencing homelessness, being 40 to 55 years of age (vs older than 70 years), and being 56 to 70 years of age (vs older than 70 years). Conversely, male sex, Black race (vs White race), Native American race, and multiracial and Hispanic ethnicity were all significantly and negatively associated with odds of vaccination receipt.

Given the high efficacy and long duration of HepA vaccine protection,8 we did not document seroconversion or seroprotection in this study. In addition, our analysis aimed to assess immediate responses to HepA vaccination, so we did not evaluate HepA vaccination rates beyond a year after an outbreak.

The retrospective nature of our data precluded determination ofvaccinerelated adverse events.

PUBLIC HEALTH SIGNIFICANCE

Recent HAV outbreaks have led to large increases in hospitalizations and deaths. Large-scale vaccination efforts, particularly in high-risk groups, are key to preventing future outbreaks. In the VHA, increases in HepA vaccination rates in outbreak states have outpaced national vaccination rates9; this is particularly the case in Kentucky, where vaccination rates were nearly 10-fold higher than in any other state we examined. These vaccination efforts appropriately reached the groups at highest risk of HAV infection or complications. Specific efforts within the VHA that may have contributed to improvements in HepA vaccination rates include educational efforts to improve awareness of HAV outbreaks and targeted vaccination campaigns through specialty clinics.

Our results highlight opportunities for improvement, including substantial numbers of high-risk individuals (e.g., those experiencing homelessness or with liver disease) who remain susceptible to HAV. Recent HAV outbreaks began in a few states but spread to more than 35 states.2 Focusing vaccination efforts on high-risk individuals may help prevent or limit future outbreaks. Our data can inform ongoing efforts to prevent HAV outbreaks both within and outside the VHA.

As previously reported outside the VHA,10 our data suggest a decreased likelihood of HepA vaccination among individuals who are Black, Hispanic, Native American, or multiracial. Given the VHA's single national health care system, our findings are not attributable to differences in health coverage. Potential explanations include differences in providers' likelihood of recommending vaccination, hesitancy to seek out or accept vaccination, and differences in concerns about vaccine safety.11,12 Improved efforts to ensure equal access to and opportunity for vaccination are needed.

Our study is strengthened by its setting within a large, national health system but involves some limitations. First, misclassification of homelessness remains possible given the fluid nature of housing and underreporting in medical records. Second, influx or outflux of HAV-susceptible individuals within locations during the study period could have affected our conclusions. Third, misclassification of HAV-susceptible individuals could have occurred if patients received HepA vaccinations outside the VHA or military. Finally, it is likely that many unmeasured factors external to the VHA (e.g., support from local health departments) played a role in statewide vaccination efforts.

In conclusion, this study demonstrates rapid increases of HepA vaccine provision within the VHA in outbreak states, particularly among groups at the highest risk of HAV infection or complications. National initiatives should continue to proactively offer HepA vaccination to individuals in high-risk groups who remain susceptible. Future research and

ongoing efforts are needed to understand and address differences in vaccination coverage according to sex, race, and ethnicity. ¿fpu

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CONTRIBUTORS

A. M. Moon contributed to study concept and design, interpretation of data, and drafting and critical revision of the article. J.A. Borgerding and E. Lowy contributed to study concept and design, data extraction, statisticalanalyses, and critical revision of the article. R. G. Hauser contributed to interpretation of data and critical revision ofthe article. M. Chartier, M. M Maier, and T. Morgan contributed to interpretation of data and critical revision ofthe article. L.A. Beste contributed to study concept and design, interpretation of data, and critical revision ofthe article.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to report.

HUMAN PARTICIPANT PROTECTION

Because our data were obtained and analyzed as part of an operational quality improvement project under the auspices ofthe VA HIV, Hepatitis, and Related Conditions Program, this project did not require institutional review board approval.

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DETAILS

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Integrated Surveillance System for Controlling COVID-19 on a University Campus, 2020–2021

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ABSTRACT (ENGLISH)

To minimize the impacts of COVID-19 and to keep campus open, Cornell University's Ithaca, NY, campus implemented a comprehensive process to monitor COVID-19 spread, support prevention practices, and assess early warning indicators linked to knowledge, behaviors, and attitudes of campus community members. The integrated surveillance approach informed leadership and allowed for prompt adjustments to university policies and practices through evidence-based decisions. This approach enhanced healthy behaviors and promoted the well-being and safety of all community members. (Am J Public Health. 2022;112(7):980-984. https://doi.org/10.2105/AJPH.2022.306838)

FULL TEXT

Headnote

To minimize the impacts of COVID-19 and to keep campus open, Cornell University's Ithaca, NY, campus implemented a comprehensive process to monitor COVID-19 spread, support prevention practices, and assess early warning indicators linked to knowledge, behaviors, and attitudes of campus community members. The integrated surveillance approach informed leadership and allowed for prompt adjustments to university policies and practices through evidence-based decisions. This approach enhanced healthy behaviors and promoted the well-being and safety of all community members. (Am J Public Health. 2022;112(7):980-984. https://doi.org/10.2105/AJPH.2022.306838)

In spring 2020, many institutions of higher education (IHEs) canceled in-person classes to reduce the spread of COVID-19.1 To reopen for fall 2020, IHEs implemented unprecedented changes, including mandatory testing, masking, and distancing.2,3 Despite mitigation efforts,4,5 the COVID-19 incidence increased among students at IHEs, and multiple outbreaks were reported.6-8 Students also struggled with well-being, because of stress and isolation,9 emphasizingthe importance of a balanced public health response.

INTERVENTION AND IMPLEMENTATION

With a commitment to opening the campus for the 2020-2021 academic year, an interdisciplinary team (see Acknowledgments) implemented a multipronged public health process (detailed in Appendix A, available as a supplement to the online version of this article at https://ajph.org) based on existing on-campus resources, expertise, and community partnerships. Methods included targeted COVID-19 education, a behavioral compact, behavior compliance support, mandatory routine surveillance via the polymerase chain reaction (PCR)test, and surveys to monitor attitudes and actions (Appendix A). Data gleaned provided early warning indicators and "wisdom of the crowd" to inform COVID-19 prevention process improvements to avoid outbreaks and limit restrictions on in-person classes.

PLACE, TIME, AND PERSONS

We report on processes used at Cornell University's Ithaca campus (Tompkins County, NY) for the 2020-2021 academic year, before vaccinations were readily available and before the Delta and Omicron variants. The public health measures were implemented in partnership with county public health officials (above and beyond local mask mandates) to benefit all on campus and the surrounding community.

PURPOSE

Our integrated approach aimed to support continued operation of on-campus activities and inform responses to IHE-specific public health and wellness needs. Surveillance processes were used to detect new COVID-19 cases, monitor real-time shifts in student attitudes and behaviors on campus, elucidate reasons for behavioral changes, inform policies to mitigate negative behaviors, and increase compliance with university and public health guidelines; processes were adapted and improved (or retired) overtime.

EVALUATION AND ADVERSE EFFECTS

For the 2020-2021 academic year, while remote work and study options were selectively used to decrease the number of people on campus, 75% of the student body came to Ithaca (n 5 18 000).

Reentry

As the Fall 2020 semester started, all students completed a mandatory COVID-19 training, signed a behavioral compact (BC), and committed to participating in surveillance testing; non-compliance affected registration and university access. In-person "intercept" surveys (n 5 1372) conducted by trained interviewers across campus showed that most students, faculty, and staff (> 80%) were compliant with the university policies, protocols, and guidelines. Via the weekly online Students Helping Identify Elements of Local Disruption (SHIELD) survey, students reported a high level of understanding related to COVID-19 prevention strategies (92%-95%, various measures) and BC expectations (80%); most students (80%) reported taking the BC seriously, and 69% stated that they could follow the BC and still enjoy their experience at Cornell (Table 1).

Waning Attention

Despite the high self-reported commitment to COVID-19 prevention strategies at the start of the semester (intercept and SHIELD surveys), observational counts (n 5 6946) and end-of-shift reporting (Appendix A) suggested declining rates of mask-wearing in public spaces on campus, from September (90%) to October (86%) to November (79%; Figure 1). In September, respondents noted a strong motivation to wear a mask and adhere to preventive measures to "protect colleagues" and "protect friends" from COVID-19 transmission, because "it is the right thing to do." Overtime, SHIELD data suggested students were engaging in COVID-19 prevention practices because it was required, but with waning commitment because of fatigue and discomfort (Table 1). Students also reported decreased motivation to follow rules because of "cabin fever" (69%) and "a desire to meet friends" (80%), increased frequency of gathering in groups greater than 10 (from 1.7% in September to 4.4% in November; x2 test odds ratio [OR] 5 2.57; 95% confidence interval [CI] 5 1.71,3.85), and decreased mask-wearing when spending time with others (from 85% in September to 49% in November; OR 5 0.17; 95% CI 5 0.08, 0.38).

System Adaptations

Noted shifts in behaviors known to increase COVID-19 transmission risks informed university public health communication campaigns and reinforced BC monitor (Appendix A) outreach efforts to support positive behaviors. Open-ended survey responses about fatigue, lack of connectedness, and stress informed university policy adaptations to permit small, masked student group meetings on campus (to facilitate social interactions under more controlled conditions), loosening of student travel restrictions, and simplification of the daily symptom reporting process ("daily check").

Re-Reentry

As the Spring 2021 semester started, there was uncertainty about students' commitment to adhere to COVID-19 prevention practices; the SHIELD survey continued. Students reported wearing masks frequently (98%), maintaining physical distance when in public (93%), and not gathering in groups (96%). However, as the semester progressed, more students reported gathering with small groups of friends (from 33% in February to 44% in April; OR = 1.57; 95% CI 5 1.07, 2.31), and not always wearing masks (from 54% in February to 72% in March; OR = 2.19; 95% CI 5 1.18, 4.10). While this raised public health concern, this did not lead to increased infection rates, perhaps because, in that same period, more than 90% of students reported motivation to get vaccinated against COVID-19: 24% were vaccinated in March, and 80% by April.

Unintended Consequence

The success of Cornell's COVID-19 surveillance program may have contributed to students' greater confidence to gather with others without masks, despite being discouraged or prohibited by the BC. Via the SHIELD, students reported that the frequency of surveillance testing (weekly for most) and the low transmission rate on campus increased confidence to interact in a more relaxed manner with their peers (e.g., no masks indoors), particularly in small groups. Of note, when the campus alert level changed to "Yellow" during a spike of cases on campus, 65% of students reported being more careful than before.

Outcome

While neighboring counties saw higher rates of COVID-19(mean 5 21 043/ 100000; range 5 16 692-24 833), Tompkins County had among the lowest rates in the state (17 074/
100 000), and Cornell was able to remain open for in-person teaching, on-campus research, and campusbased

public services. More than 1 100 000 surveillance tests were completed (0.1% positivity; 1140 COVID-19 cases), with only three small case clusters linked to travel and social gatherings. With input from more than 17 094 survey data points, strategic policy adaptations allowed the university alert level to be "Green" for most of the year; the university never needed to shift to online classes.

SUSTAINABILITY

As new variants emerge and we learn more about immunity after infection and vaccination, we must reconsider the risks of COVID-19 and adopt innovative approaches and tools to protect public health and student well-being.10 Integrated layered approaches, including public health education, student behavioral support, accessible and routine PCR-based surveillance and isolation practices, clear communications, and data-driven adaptations are key. The approaches used by Cornell for the 2020-2021 academic year provide a model-in whole or in part-for other universities seeking to reduce transmission of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) or other future infectious agents, while also supporting wellness with data-driven policy shifts.

PUBLIC HEALTH SIGNIFICANCE

Despite the public health impacts of COVID-19 and the importance of SARS-CoV-2 asymptomatic carriers, fewer than 50% of IHEs in the United States screened for COVID-19 among asymptomatic individuals, and 18% did not publish a COVID-19 testing protocol on their Web site.11 Enhancing vaccination campaigns and reliable screening of asymptomatic individuals are essential to reduce asymptomatic or presymptomatic transmission and monitor trends in infection.11,12 However, these measures alone are not sufficient to anticipate behaviors that may lead to outbreaks. Universities should also consider methods to collate input from-and monitor behavioral changes among-individuals to inform and enact, in a timely manner, evidence-based policies that limit disease transmission and support wellness. (See postscript in Appendix A.) _4jPH

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In addition to the authors whose memberships in the following groups are noted in the Contributors section and the leaders of these groups who are noted in the previous paragraph, we acknowledge the contributions of the members of the following groups: CornellMaster of Public Health COVID-19 Advisory Group: Katherine Lesser;Student and Campus Life COVID-19 Response leads: Amy Gaulke and Kurt Sarsfield, and CornellStudent Ambassadors and CornellBehavioralCompact Monitors;CornellInfection Working Group: Frank Cantone, Cecilia Earls, Peter Frazier, Kristin Hopkins, Frank Kruppa, Rob Lawlis, Sharon McMullen, Jared Pittman, Kim Potter, and Madelyn Wessel;Cornell COVID-19 Testing Lab Operations Committee: Francois Elvinger, Melissa Laverack, Kim Potter, and Roopa Venugopalan; Cornell COVID-19 Testing Committee: Frank Cantone, Kristin Hopkins, and Vernetta Kinchen;Cornell COVID-19 Response Team: Allan Bishop, John Clarke, Tim Fitzpatrick, Kristin Hopkins, Mary Opperman, and Kim Potter.

CONFLICTS OF INTEREST

The authors have no conflicts to declare.

HUMAN PARTICIPANT PROTECTION

This report is based on retrospective analysis of aggregate, nonidentifiable data generated through several surveillance methods that were implemented by the COVID-19 multidisciplinary team at Cornell University's Ithaca campus between August 2020 and May 2021. Given that this is not human participant research, the institutional review board committee at CornellUniversity waived the requirement of an ethical review and approval.

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Paid Leave and Beyond: The Urgency and Feasibility of Addressing Structural Inequalities Across Race, Gender, and Class

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ABSTRACT (ENGLISH)

Goodman et al. (p. 1050) compellingly document marked inequalities in who is most at risk for lacking paid medical, caregiving, and parental leave in the United States. They find that just 47% of Hispanic workers, 59% of Black workers, 68% of Asian workers, and 67% of White workers had access to paid medical leave they could use for their own care and treatment. Even fewer had leave to care for an ill family member.

FULL TEXT

Goodman et al. (p. 1050) compellingly document marked inequalities in who is most at risk for lacking paid medical, caregiving, and parental leave in the United States. They find that just 47% of Hispanic workers, 59% of Black workers, 68% of Asian workers, and 67% of White workers had access to paid medical leave they could use for their own care and treatment. Even fewer had leave to care for an ill family member.

HOW GAPS IN PAID LEAVE WORSEN INEQUALITIES

These gaps have had profound consequences; while home to only 4% of the global population, the United States has accounted for 16% of COVID-19 deaths to date,1 with Black, Latinx, and Indigenous Americans twice as likely to die from COVID-19 as White Americans.2 Drivers of these disparities include higher rates of exposure and infection linked to working conditions.3 The enactment of emergency paid sick leave during the pandemic, despite not covering all workers, markedly reduced cases until Congress let it lapse at the end of 2020.4 Furthermore, even in nonpandemic years, paid sick leave has been shown to increase access to preventive care and treatment, reduce job loss, and increase return to work.

In short, had a robust, fully inclusive paid sick leave policy been in place when COVID-19 began to spread and for its duration, the United States could have avoided innumerable infections and deaths that occurred because people had to go to work when they were sick or send children to school sick, while also helping people keep jobs critical to their long-term well-being. Instead, we were ill equipped to respond to a virus that spread as rapidly as COVID-19- and unless policymakers act, we will be equally ill prepared for the next.

This vulnerability was not a surprise: the United States has known about the inequalities and gaps in sick leave for decades. More than 25 years ago, together with colleagues, we documented the large gaps overall and the significant racial inequity in access to paid sick leave among parents.5 The research by Goodman et al. importantly keeps focus on these costly gaps and clearly shows that, even with some improvements in overall coverage of paid sick leave, marked inequalities persist.

Goodman etal. also findthatjust37% of Hispanic, 49% of Black, 52% of Asian, and 60% of White workers had access to paid parental leave. These gaps similarly have profound implications for racial health disparities, given the

evidence that paid leave reduces infant mortality rates, improves mothers' access to postpartum care, and increases rates of breastfeeding and on-time immunizations. The United States is the only high-income country where maternal mortality is rising, and we rank 33rd among the 38 Organisation for Economic Co-operation and Development (OECD) countries in infant survival.6 According to the Centers for Disease Control and Prevention, rates of infant mortality for Black infants are more than twice those of White infants, while maternal mortality is 2.5 times as high among Black as among White women.

CLOSING THE GAPS

These policy choices make the United States a global outlier. Goodman et al. note the United States is rare among OECD countries in not providing paid leave. In fact, we are even farther behind than that: 181 countries around the world guarantee paid sick leave at the national level.7 Similarly, 186 countries guarantee paid maternity or parental leave.8 While the US provides unpaid leave through the Family and Medical Leave Act (FMLA), because of racial wealth gaps-which stem from a long history of exclusionary policymaking, compounded by ongoing discrimination9-when the only leave available is unpaid, Black and Latinx workers are far less likely to be able to afford it. Moreover, the FMLA eligibility criteria for even unpaid leave exclude many part-time workers, the self-employed, workers starting a new job, and those working for small businesses, widening racial and gender disparities in access. Nearly every country globally guarantees sick leave without these exclusions.7

Fortunately, when it comes to paid leave, the solutions are straightforward: to both reduce disparities and improve health overall, Congress should adopt a permanent, comprehensive paid family and medical leave policy that covers all workers, with no exceptions. Yet, if we care about equality, our commitment to addressing structural discrimination across race, gender, and class that is embedded within policies cannot end there. From criminal justice to access to health care, education to housing, a wide range of other policy choices- both historic and contemporary-are perpetuating health disparities, and we must identify and tackle them systematically to improve health equity at scale.

STRUCTURAL INEQUALITIES BEYOND PAID LEAVE

Sentencing disparities is a well-known example. The 1986 Anti-Drug Abuse Act, which imposed the same mandatory minimum sentence for 5 grams of crack cocaine as for 500 grams of powder cocaine, substantially contributed to the disproportionate incarceration of Black Americans. While evidence shows that overall rates of substance use are similar among Black, White, and Latinx youths and adults,10 these inequalities in the law-combined with discriminatory policing practices and an overreliance on incarceration generally-have resulted in the United States becoming a country where one in 15 adults, including one in three Black men and one in six Latino men, can expect to be incarcerated in their lifetimes, with devastating health and economic consequences.11 Yet, as with paid leave, this is an example in which the research on racial disparities is robust and the first steps toward remedying them, while improving public health more broadly, are clear: fully eliminate the sentencing disparity and stop treating addiction through incarceration.

Education is another. Research has long demonstrated that funding schools through local property taxes exacerbates racial and socioeconomic inequalities in school quality while reinforcing segregation. In most other high-income countries, federal and regional governments, rather than local governments, are the key funders of education, resulting in more equitable funding for schools-a critical piece of the solution.12 At the same time, significant debate persists about the best ways to move forward on racial equity in education more broadly.

PRACTICAL STEPS TO ADVANCE EQUALITY IN US PUBLIC POLICY

These are two examples among many-and addressing the structural inequalities that exist across policies will require both preventing these inequalities becoming embedded in law in the first place and drawing on the best evidence available to dismantle those that have persisted for decades. Two actions could make a profound difference.

First, the National Academy of Sciences (NAS) should carry out a study to evaluate the extent to which existing laws and policies create or reinforce inequalities in areas that matter to health and synthesize the evidence about how those inequalities can be solved most effectively. By systematically measuring how laws and policies that appear

"race-neutral" in fact widen inequalities-while also evaluating the evidence to support different solutions in areas where consensus is lacking- NAS could play a powerful role in providing actionable, objective information for policymakers who care about reducing inequality in the United States.

Second, when Congress considers new legislation-including new social policies-it should routinely assess who will be affected and how. Just as the Congressional Budget Office posts the costs of every new bill, the Congressional Research Service should publish estimates on coverage and implications for disparities across race, gender, and class.

In the wake of a public health crisis that has laid bare the consequences of US failure to address how underlying inequalities shape both direct health risks and families' financial resilience, uprooting these structural drivers must be a top priority. Beyond paid family and medical leave, it is long past time that the United States stop passing new laws and amend existing legislation that reinforces inequality across race, gender, and class. A congressional process that provides information to all policymakers on new laws' impacts on equality, alongside a NAS evaluation of existing major policies impacting health, could importantly accelerate laying a foundation to truly support equal opportunity for all.

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Experimental Forum 2: Two Years After the 2020 Food and Drug Administration Guidance on E-Cigarette Flavors

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ProQuest document link

ABSTRACT (ENGLISH)

There is intense interest in the April 2020 Food and Drug Administration (FDA) guidance document ("the Guidance") on favors in electronic cigarettes (am.ajph.link/fda_guidance). The docket associated with the Guidance garnered more than 1 5 000 public comments from a range of interests, including prohibitionists, concerned parents, researchers, the retail industry, and adults who stopped smoking.

The Guidance focuses on flavorings. Putatively, flavorings afford adult cigarette smokers options to switch to vaping.1 But the flavorings are also perceived to be attractive to people who have never smoked cigarettes, with particular concern about nicotine initiation by underage youths.2 In particular, the flavor and type of device on which nicotine use is initiated may influence later nicotine dependence in young adults.3

In the United States, three broad classes of vaping device are common: (1) single-unit disposable devices roughly equivalent to a pack of cigarettes; (2) homemade devices with, for example, customizable nicotine liquid tanks, batteries, and mouthpieces; and (3) devices with a rechargeable battery and replaceable cartridges containing nicotine liquid. Specific flavor restrictions were targeted only at this third, cartridge-based category, which includesJUUL electronic cigarettes. All three categories accommodate artificially flavored nicotine liquid: fruity, buttery, icy, and tobacco flavored.

FULL TEXT

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The cartridge-based devices have drawn immense public scrutiny for years because of the nicotine type, flavorings, marketing, and rapid commercial expansion. Creating complicated relationships, and further limiting possible benefits to smoking cessation in the public health audience's eyes, Altria (formerly Philip Morris) purchased a major stake in JUUL in 2018. Accordingly, many of the 2020 commissioned comments focused on cartridgebased devices. Since that time, the market share for JUUL products has halved, with replacement by Vuse, manufactured by R.J. Reynolds, a major tobacco manufacturer.4

Duringthe COVID-19 pandemic, overall sales of electronic cigarettes have increased by single-digit percentages, with a similar magnitude of decline in combustible cigarettes, according to consumer sales data.4 In this issue of AJPH, Hammond et al. (p. 1014) present compelling evidence that "the main impact of the US flavor restrictions on cartridge-based e-cigarettes among youths was a shift to disposable products, which were not subject to flavor restrictions."

In the Forum editorials published in the June 2020 issue of AJPH, the following five areas of concern were identified as likely outcomes of the Guidance by experts:

1. reversal of recent smoking declines among youths,
2. increased popularity of Puff Bar and other disposable e-cigarettes among youths,
3. switching back to combustible cigarettes among adults,
4. Big Tobacco dominating applications for approval of new vaping products, and
5. the emergence of illicitly manufactured flavoring pods.5

SMOKING TRENDS AMONG YOUTHS

Much has changed since spring 2020. Studies show declines in underage vaping, coincident with virtual schooling and disruption of unsupervised youths socializing during the pandemic.6 And cigarette smoking among youths

remains remarkably low at 3.3%.2

Whether these positive changes can be attributed to the Guidance or other factors remains unclear. In late 2019 the age to purchase nicotine products was raised to 21 years. But the first prediction of a reversal in smoking declines did not come to pass.

YOUTHS USING DISPOSABLE E-CIGARETTES

Youth vaping has declined, but younger people who vape are using mostly flavored products, which are mostly now disposables. Flavored disposable (as opposed to cartridge-based) e-cigarettes are popular, with the brand Puff Bars being dominant among a greatly diversified marketplace.7 Therefore, the second prediction did hold.

A review of online availability of flavored disposable products led researchers at Stanford University to conclude: The proliferation of flavoured disposable e-cigarette products, many of which are designed to emulate popular pod devices, illustrates that narrowly limited flavour regulations covering only a single category are destined to fail.7(p1) As shown by Hammond et al., for the first six months after the ban, "Usual flavors used by youth vapers in the United States were unchanged after 2020 restrictions on cartridge-based e-cigarettes. Youths used brands and devices exempt from the restrictions" (p. 1014).

ADULTS USING COMBUSTIBLE CIGARETTES

The results of the third prediction are mixed. Adult smoking remains at levels similar to those before the Guidance. Although there has not been a noticeable switch back to adults smoking combustible cigarettes, neither has there been a marked decline in adult smoking, which is possibly confounded by stressors related to the COVID-19 pandemic.8,9 More aggressive efforts to shift adults to safer nicotine replacement products or cessation medications are still warranted; medically prescribed e-cigarettes seem to encourage smoking cessation in controlled trial settings.10

APPLICATIONS FOR LICENSING

The fourth criticism was well founded. Industry gamed the premarket tobacco product application process set into motion with the Guidance. A single liquid nicotine company bulk-submitted 4.5 million premarket tobacco product requests to FDA, nearly three fourths of the applications received by August 2021. FDA refused to consider the applications because of inadequate environmental assessments. E-cigarettes that FDA has approved since the Guidance was released have come almost exclusively from large established companies, most notably Vuse Solo.4

ILLICIT VAPING PRODUCTS

The fifth concern, regarding the availability of unregulated flavor pods, has generally held, although few data are available on actual use. Off-brand pods with nontobacco flavorings are available online, often in combination with cannabidiol and THC (delta-8 tetrahydrocannabinol). Nicotine and cannabis vaping are often conflated in terms of risk framing: e-cigarette- or vapingassociated lung injury (EVALI) concerns in 2019 were driven by adulterated cannabis vaping products, but nicotine prohibitionists have consistently raised the specter of EVALI as well.

No nationwide EVALI outbreaks have happened in the past two years that rise to the profile of the cannabistainted vaping outbreak.11 Whether this is because of regulation, industry caution, market forces, nonspecific vape categories on surveys, or pure chance is unclear. Still, consumer demand for cannabis vaping products continues to be a source of measurement error in surveys of vaping-related harms, and correspondingly in nicotine policy.11

OMISSIONS

At the time of the original Forum, most disapproval was directed at two specific products (a cartridge-based nicotine salt device and a brand-name disposable flavored vape). With an unrelenting focus on these two specific products, there were omissions as well. The emergence of heated tobacco products (called "modified risk tobacco products") is an area that the original commentators did not identify. In theory, these electrical devices put nicotine into an inhalable form but appear to emit fewer cancer-causing chemicals than does fire combustion. They are available only in a limited range of tobacco flavors.12

Another loophole stemming from FDA regulations is synthetically manufactured nicotine, which is exempted from flavoring restrictions because the nicotine is not derived from grown leaf tobacco.13 A major technical barrier remains because synthetic chemistry methods are not as efficient as nature, and the resulting laboratory-created

nicotine contains substantial volumes of a form of nicotine that is not psychoactive in humans.14 Finally, the rise of oral nicotine products was also not mentioned in the original Forum editorials. Oral pouches with purified or synthetic nicotine, held between the gum and cheek or lip, have grown in popularity in a dizzying array of flavors mimicking the banned cartridge flavors.15

Current concerns among our commentators are inconsistent. Their arguments against flavorings in e-cigarettes do not appear to extend to oral pouches. Surveys lump "smokeless tobacco" products into one category, obscuring measurement, and prevalence of smokeless tobacco use among youths is only 1.9%.2 It remains to be seen whether flavored oral pouches will become popular among youths, as fiberglass-infused tobacco "dip" did a generation ago, and whether they will become a flashpoint in the nicotine prohibition culture war.

BOTTOM LINE

Taken together, the direst predictions from experts in the original Forum were not confirmed. Perhaps this can be traced to the asynchronous paces of regulation and industry development. But changes in nicotine use in the United States during this period cannot be disentangled from COVID-19. In addition to stay-at-home mandates, fear of contracting the respiratory illness was noted to increase motivation to quit cigarette smoking.8 Interestingly, e-cigarette users also reported greater quit attempts (41 %) than did cigarette smokers (26%) because of COVID-19 fears.9

In addition, various state and local prohibitions against public vaping and fluctuations in product cost have also occurred. Because of changes in sampling necessitated by the COVID-19 pandemic, data quality in large population-based surveys remains an area of active investigation, including potential discontinuities that could limit comparisons overtime. Finally, we note that one or two time points since the Guidance was released may not portend sustained changes in behavior.

In the new set of comments, the authors continue to point out the loophole for disposable products. The underlying tension is whether electronic cigarettes should be regulated based on the health needs of the intended population (adult smokers) or concerns about the unintended population (underage youths). These matters are serious and deserve to be informed by unbiased scientific evidence.

LOOKING AHEAD

In March 2022, a new FDA commissioner was appointed, and in May 2022, Brian King was appointed as the new director of the FDA Center for Tobacco Products. Prior to this new position, King had been at the Centers for Disease Control and Prevention, and contributed an editorial to this issue (p. 999). Over the past year, the review staff at the Center for Tobacco Products has also expanded, as have applications for new products. The direction the FDA will take in the next few months will set the tone for tobacco and nicotine policy for years to come. >4jPH

Sidebar

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DETAILS

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Contesting Narratives of Inevitability: Heterogeneity in Latino–White Inequities in COVID-19

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ABSTRACT (ENGLISH)

Early in the COVID-19 pandemic, it was common to hear the refrain, "The virus does not discriminate." Today, the unevenness of the pandemic's toll is undeniable: Black, Indigenous, and Latino individuals in the United States died at higher rates than Whites and some Asian Americans.1 News headlines warning that Latinos are among those hardest hit by COVID-19 have become familiar. Many people even assume racial disparities in COVID-19 are inevitable,2 but emerging evidence belies this assumption.

In this issue of AJPH, De Ramos et al. (p. 1034) report on their pioneering study documenting Latino-White inequities in COVID-19 outcomes across US cities. The study's findings demonstrate just how deep the Latino-White gap is in multiple COVID-19 outcomes. Across the largest cities in the United States, Latinos have faced greater risk of infection, hospitalization, and death, and they have lower rates of vaccination. But De Ramos et al. do not take the Latino-White gap in COVID-19 disease and death for granted. Rather, they strategically explore heterogeneity in these disparities across cities, time, and outcomes.

FULL TEXT

Early in the COVID-19 pandemic, it was common to hear the refrain, "The virus does not discriminate." Today, the unevenness of the pandemic's toll is undeniable: Black, Indigenous, and Latino individuals in the United States died at higher rates than Whites and some Asian Americans.1 News headlines warning that Latinos are among those hardest hit by COVID-19 have become familiar. Many people even assume racial disparities in COVID-19 are inevitable,2 but emerging evidence belies this assumption.

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ACROSS CITIES AND OVERTIME

Structural racism is recognized as the fundamental cause of racial/ethnic inequities in health,3 and research to articulate the pathways between structural racism and health is a top priority. But too few studies explicitly measure how the relationship between structural racism and racial disparities in health varies over social contexts. Studies of the disparities between an advantaged group and a disadvantaged group with data from only a single population (from a single period or geographic area) presume the existence of a fixed racialized social order and static policy

context, ignoring their potential modifiability.4 For research to reveal how health disparities are modifiable, it must compare the health consequences of distinct social systems and policy environments to show that health inequities emerge and evolve in response to systemic discrimination and policy choices.

Comparing the magnitude of health gaps across policy contexts is critical, but what level of policy matters most? A strand of research led by Jennifer Karas Montez suggests that state policy is particularly consequential for distribution of the social determinants of health,5,6 but De Ramos et al. suggest that city and county levels are also important, particularly during the COVID-19 pandemic, because the scale of severe acute respiratory syndrome coronavirus 2 transmission is local. De Ramos et al. find that Latino people living in different cities had very different experiences in the pandemic, as did White people. Highlighting this local-level variation is important because it shifts the responsibility for trends in COVID-19 disease and death away from individuals and toward local environments. For example, the finding of De Ramos et al. that the Latino-White COVID-19 mortality rate ratio was 3.85 in San Jose, California, but 2.83 in Oakland, California-two cities with similar proportions of Latino and White residents and similar levels of community transmission-prompts questions about which policies or social factors might contribute to the wider disparity in San Jose.

Of course, policy environments have evolved as the pandemic has evolved. In 2021, increasingly partisan framing of public health policies coincided with widespread vaccine availability and may have led to reduced COVID-19 disparities for some cities, but not others. Should this narrowing of relative disparities in 2021 be considered a shift toward equity? The answer is not straightforward because the White reference group is a heterogeneous target. Indeed, a blind spot of most health disparities scholarship is that it takes for granted stability in the White reference group. Avoiding this, De Ramos et al. studied fluctuation in COVID-19 trends among Whites. De Ramos et al. are clear that the narrowing of the disparities seen over time and at higher levels of local social vulnerability reflect a relative worsening of COVID-19 outcomes for Whites. Furthermore, absolute versus relative disparities lead to different conclusions about where inequities are most extreme.

SOCIAL CONTEXT AND COMPOSITION

De Ramos et al. recognize that their ecological study design cannot distinguish between contextual and compositional effects. Just as policy context likely contributes to the heterogeneity in COVID-19 disparities they observe, so do compositional differences in the sociodemographic positions held by non-Latino Whites and Latinos across the localities they study. Under the umbrella of US-based Latinidad (the contested idea of a common Latino identity) exists wide variation in experience.7 Inherent in the city-level approach of De Ramos et al. is an acknowledgment that the Latino communities in Miami, Florida, are distinct from those in Washington, DC, Los Angeles, California, and Phoenix, Arizona, as are the non-Latino White communities.

De Ramos et al. demonstrate the value of descriptive analysis to identify aspects of social context that vary with COVID-19 disparities with their focus on the Social Vulnerability Index. This index is a holistic measure of how at risk versus buffered a location would be in the face of a disaster, such as a disease outbreak. Counterintuitively, De Ramos et al. find narrower disparities in COVID-19 outcomes in cities with a higher Social Vulnerability Index (i.e., more at risk). By showing that the health benefits of living in a low Social Vulnerability Index (i.e., buffered) location may not extend to all residents, De Ramos et al. challenge assumptions about who benefits from living in a city with a low Social Vulnerability Index.

ACROSS MULTIPLE OUTCOMES

De Ramos et al. explored trends in multiple COVID-19 outcomes to show how disparities vary over the continuum of COVID-19, from vaccination to infection to severe disease to death. Across all cities included in the study, Latinos experienced a higher burden of COVID-19 incidence, hospitalization, and death than Whites. The most extreme relative disparities appeared in COVID-19 hospitalization, raising questions about why Latinos may have experienced more severe disease than Whites. It is possible that in-hospital testing reduced bias from underdiagnosis of COVID-19,8 making disparities in hospitalization seem wider than those in incidence. Others have suggested that three key mechanisms put Latinos at greater risk for severe illness and death from COVID-19: higher risk of exposure, weathering processes, and lower health care access and quality.9

What else might be driving the trends that De Ramos et al. find? They mention possible consequences ofthe public charge rule, which discourages health care seeking among immigrants. But the political hostility toward Latinos and resultant harms extend much deeper than any one policy. According to sociologist Cecilia Menjivar, "Latino groups are the preeminent target group of both the social and the legal production of illegality."10(p1) This racialized struggle for rights and protections plays out in the domains of family, work, housing, education, voting, and more-all of which shape access to health-protective resources during the pandemic.

CONCLUSIONS

Although there is no single story about Latinos in the pandemic, De Ramos et al. tell a truer story than many we have heard. De Ramos et al. avoid the tired trope of invoking underlying comorbidities as the basis for the Latino-White gaps in COVID-19 hospitalization and death. They bring nuance to our understanding of racialized inequity by demonstrating that the gaps are much wider in some cities than others and that the gaps narrowed in 2021 in some cities but not others. The puzzles that emerge from the authors' results are not easily explained by biological or cultural factors, which we would not expect to fluctuate in such a short period. Instead, the results implicate contextual and policy factors that drive spatial and temporal variation in Latino-White social inequity and the larger social context that served as a stage for COVID-19 inequities.

Lest we forget that this pandemic unfolded in contexts of violent and overt racism: less than a year before the pandemic, on August 3, 2019, a White man fueled by an ideology of anti-Latino hate killed 23 people shopping at a Walmart in El Paso, Texas.11 Five years before the pandemic, Donald Trump, in the speech that launched his presidential campaign, said that Mexican immigrants were bringing drugs and crime to the United States. "They're rapists," he said to a cheering crowd.12 Ten years before the pandemic, Arizona passed its notorious SB 1070 "show me your papers" law, which legalized racial profiling and the criminalization of Latinos. The list goes on, urging usto see the futility of efforts to understand Latino disparities in COVID-19 by studying Latino people alone. Perhaps Latino-White gaps in COVID-19 are not so much a story of Latinos or Latinidad but a story of the racism targeting Latinos and the social policies failing them.

CORRESPONDENCE

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Prevalence of Psychological Distress Among Working-Age Adults in the United States, 1999–2018

Daly, Michael, PhD

ABSTRACT (ENGLISH)

Objectives. To test whether the prevalence of reported psychological distress Increased among working-age adults in the United States between 1999 and 2018. Methods. I examined psychological distress in the past 30 days using the Kessler-6 Distress Scale, completed by 403223 participants aged 25 to 64 years across 20 annual waves of the National Health Interview Study conducted from 1999 to 2018. I examined overall and demographic-specific trends. Results. The prevalence of psychological distress in the past 30 days increased from 16.1% in 1999-2000 to 22.6% in 2017-2018, an increase of 6.5 percentage points (95% confidence interval [CI] 5 5.6, 7.3) or 40% from 1999-2000 levels. Statistically significant increases in the prevalence of distress were observed across all age, gender, race/ethnicity, and educational attainment subgroups examined. Rates of serious psychological distress increased

from 2.7% in 1999-2000 to 4% in 2017-2018, an increase of 1.3 percentage points (95% CI = 0.9,1.6). Conclusions. Since 1999, there has been an upward trend in reported psychological distress among working-aged adults in the United States.

FULL TEXT

Headnote

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Methods. I examined psychological distress in the past 30 days using the Kessler-6 Distress Scale, completed by 403223 participants aged 25 to 64 years across 20 annual waves of the National Health Interview Study conducted from 1999 to 2018. I examined overall and demographic-specific trends.

Results. The prevalence of psychological distress in the past 30 days increased from 16.1% in 1999-2000 to 22.6% in 2017-2018, an increase of 6.5 percentage points (95% confidence interval [CI] 5 5.6, 7.3) or 40% from 1999-2000 levels. Statistically significant increases in the prevalence of distress were observed across all age, gender, race/ethnicity, and educational attainment subgroups examined. Rates of serious psychological distress increased from 2.7% in 1999-2000 to 4% in 2017-2018, an increase of 1.3 percentage points (95% CI = 0.9,1.6).

Conclusions. Since 1999, there has been an upward trend in reported psychological distress among working-aged adults in the United States. (AmJ Public Health. 2022;112(7):1045-1049. https://doi.org/10.2105/AJPH.2022.306828)

Following a century of progress, life expectancy in the United States plateaued in 2010 and declined from 2015 to 2017.1 This concerning trend has been attributed to an increase in mortality among working-age adults (aged 25-64 years) driven largely by a rise in suicide and drug and alcoholrelated causes, which have been collectively labeled "deaths of despair."2 In the United States, the suicide rate increased by 35% between 1999 and 2018.3 An increase in feelings of distress over this period may provide at least a partial explanation for high and rising mortality rates in the United States.2-4 However, it is unclear whether the recent reversal in life expectancy gains was precipitated by an increase in psychological distress among working-age adults.

A nationally representative study of US adults found that the prevalence of serious psychological distress increased from 3.9% to 4.8% among non-Hispanic Whites aged 45 to 54 years between 1997-1999 and 201 1-2013.5 Increases in depressive symptoms and suicidal ideation have been identified across racial/ethnic groups in a US cohort of young adults reaching midlife.6 Finally, a recent study showed that the percentage of US citizens reporting "not good" mental health every day in the past 30 days increased from 3.6% in 1993 to 6.4% in 2019.7

Although these studies suggest a potential increase in distress in recent decades, estimates of national trends in psychological distress across the entire working-age population using well-validated multi-item measures are needed. To address this gap, this study drew on a national sample of workingage adults to test whether the prevalence of psychological distress, measured using the Kessler-6 Distress Scale,8 has changed over 2 decades, from 1999 to 2018.

METHODS

Participants were adults aged 25 to 64 years from 20 waves of the National Health Interview Survey (NHIS), collected from 1999 to 2018. The NHIS is an annual nationally representative probability-based survey of the noninstitutionalized US population with a high household response rate (64%-88%).9

Psychological Distress

I examined psychological distress using the valid and reliable Kessler-6 Distress Scale (K6).8 Participants indicated how frequently they experienced 6 symptoms of psychological distress in the past 30 days:

1. nervous,
2. hopeless,
3. restless or fidgety,
4. so depressed that nothing could cheer you up,

5. that everything was an effort, and
6. worthless.

Responses were provided on a 5-point scale (coded 0 = none of the time, 1 = a little of the time, 2 = some of the time, 3 5 most of the time, and 4 = all of the time). K6 scores ranged from 0 to 24 (Cronbach's a = 0.87). Those scoring 5 or higher were coded as experiencing psychological distress.10 This cutpoint has been identified as optimal in identifying those experiencing at least moderate distress.

I conducted supplementary analyses using a more stringent cutoff of 13 or greater on the K6 scale, typically termed "serious psychological distress."81 also examined changes in each individual distress symptom over the study period. Responses were coded as 0 (none of the time) and 1 (a little of the time, some of the time, most of the time, all of the time), indicating the absence or presence of each symptom in the past 30 days.

Statistical Analysis

I used logistic regression analysis followed by the Stata version 17 margins postestimation command (StataCorp LP, College Station, TX) to estimate percentage-point differences in the prevalence of psychological distress and serious psychological distress grouped in 2-year blocks from 1999-2000 to 2017-2018. I conducted additional analyses with survey year treated as a continuous variable. I also conducted sensitivity analyses to test whether adjusting for differences in demographic characteristics between study waves affected the study results and whether changes in distress from 1999-2000 to 2017-2018 differed across demographic groups or distress symptoms. I applied sampling weights to adjust for differential selection into the sample, household nonresponse, and potential bias due to undercoverage, and to provide a poststratification adjustment based on population age, gender, and race/ethnicity levels. All analyses also adjusted for the impact of the sample design stratification and clustering on standard errors. Instructions on howto access the data and code supporting the study are available via the Open Science Framework (https://osf. i o/xc7zy).

RESULTS

In total, 403 223 participants provided survey responses in the NHIS from 1999 to 2018. In the NHIS, the prevalence of psychological distress increased from 16.1% in 1999-2000 to 22.6% in 20172018, an overall increase of 6.5 percentage points (95% confidence interval [CI] 5 5.6, 7.3) or 40% (Figure 1; Table A, available as a supplement to the online version of this article at http://www.ajph. org). Analysis of the time trend in distress showed that distress increased by 0.29% (95% CI 5 0.26,0.33) per year on average (Table B, available as a supplementto the online version of this article at http://www.ajph.org). Overall increases in distress between 1999-2000 and 2017-2018 were similar in magnitude for males (6.3%; 95% CI 5 5.3,7.3) and females (6.7%; 95% CI 5 5.6, 7.8) and were observed across all demographic groups (Figure 1, Table A). Sensitivity analyses showed that adjusting for differences in demographic characteristics between survey waves increased estimates of change in distress by 22% to 28% (Table B).

The magnitude of increases in distress did not differ as a function of participants' gender or education level. However, non-Hispanic White participants experienced a significantly larger increase in distress than Hispanic participants (3.5% difference; 95% CI 5 1.5, 5.5) and non-Hispanic Black participants (2.5% difference; 95% CI 5 0.3, 4.8; Table C, available as a supplement to the online version of this article at http://www.ajph.org). An analysis of the time trend in distress showed that non-Hispanic White participants experienced a 0.33% (95% CI 5 0.29, 0.38) increase on average each year (Table D, available as a supplement to the online version of this article at http://www.ajph.org), which was significantly larger than the 0.22% (95% CI 5 0.17, 0.27) increase per year experienced by other participants. Those aged 45 to 54 years experienced a less pronounced increase in distress levels than those aged 25 to 44 years (Tables C and D).

Serious distress levels increased significantly, from 2.7% (95% CI 5 2.5, 2.9) in 1999-2000 to 4.0% (95% CI 5 3.7,4.2) in 2017-2018, an increase of 1.3 percentage points (95% CI 5 0.9,1.6; Table E, available as a supplement to the online version of this article at http://www. ajph.org) or 48%. Significant increases in serious distress were observed for all demographic groups examined except for Hispanic and "other race/ethnicity" participants (Table E). Statistically significant increases were observed for each K6 distress symptom between 1999-2000 and 2017-2018

(Table F, available as a supplement to the online version of this article at http:// www.ajph.org). Feeling "that everything was an effort" increased from 20.5% to 30.9%, an increase of 10.4 percentage points (95% CI 5 9.3,11.4) or 50.7%. Feelings of hopelessness increased from 10.2% to 14.3%, an increase of 4.1 percentage points (95% CI 5 3.5, 4.8) or 40.2%. Feelings of nervousness, restlessness, and worthlessness also increased substantially (Table F).

DISCUSSION

Rising feelings of distress have been proposed as an explanation for the increases in premature death that have contributed to the recent reversal of life expectancy improvements in the United States.2,3 This study of over 400 000 adults used 2 decades of nationally representative data to show that distress increased by 6.5 percentage points, from 16.1% in 1999-2000 to 22.6% in 2017-2018, an increase of 40%. Significant increases in distress were observed across demographic groups and were found when changes in serious distress were examined.

The population-level rise in psychological distress identified in this study occurred over the same period during which deaths due to mortality from suicides, drug poisonings, and alcoholic liver disease increased among working-age adults in the United States.1,3 The current findings provide support for a premise of studies examining "deaths of despair": that feelings of distress have increased among working-age adults in the 21st century. Additional empirical evidence is now needed to understand how changes in psychological distress may link to premature mortality from suicide and drug- and alcohol-related causes and their precursors, such as suicidal ideation and dangerous levels of opioid and alcohol usage.4 Further, it will be important to pinpoint the social and economic changes that triggered the recent rise in distress, which may include stagnant wage growth, labor force disengagement, and increased social isolation.11,12

The current study is limited by its reliance on a self-reported measure of general distress that does not provide a clinical diagnosis of specific psychiatric disorders. However, it is the pervasive symptoms of distress (e.g., hopelessness, worthlessness) captured by this measure that have been proposed to link economic stagnation to premature death.11 Finally, because this study relied on reported feelings, it remains possible that the increase in distress observed could be partly attributed to an increased likelihood of reporting distress over the study period (e.g., through greater awareness of mental health issues).

In conclusion, this study drew on repeated assessments of psychological distress from probability-based samples with high response rates collected over 2 decades to show a pronounced upward trend in reported psychological distress among workingaged adults from 1999-2000 to 20172018. Understanding the role that this rise in distress has played in connecting changing societal and economic conditions to premature death and reduced life expectancy will now be crucial. "4jPH

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CONFLICTS OF INTEREST

The author has no conflicts of interest to report.

HUMAN PARTICIPANT PROTECTION

This study involved secondary analysis of the NationalHealth Interview Survey anonymized microdata files, which did not require institutional approvalfrom the Maynooth University Social Research Ethics Sub-Committee.

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DETAILS

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Flavor in cigarettes and E-cigarettes contributes to singapore youths' smoking initiation. (2022). American Journal of Public Health, 112(7), 952. doi:https://doi.org/10.2105/AJPH.2022.306954

Social norms and peers infl uence E-cigarette use and cessation. (2022). American Journal of Public Health, 112(7), 952. Retrieved from https://www.proquest.com/scholarly-journals/social-norms-peers-infl-uence-e-cigarette-use/docview/2681533639/se-2?accountid=211160

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Hammond, D., PhD., Reid, J. L., M.Sc, Burkhalter, R., M.Math, Travers, M. B., PhD., Gravely, S., PhD., Hyland, A., PhD., . . . McNeill, A., PhD. (2022). E-cigarette flavors, devices, and brands used by youths before and after partial flavor restrictions in the united states: Canada, england, and the united states, 2017–2020. American Journal of Public Health, 112(7), 1014-1024. doi:https://doi.org/10.2105/AJPH.2022.306780

Objectives. To examine the impact of US restrictions implemented in February 2020 prohibiting flavors other than menthol and tobacco in cartridge-based e-cigarettes. Methods. We analyzed 5 cross-sectional waves of the International Tobacco Control Policy Evaluation Project Youth Tobacco and Vaping Surveys, conducted online with youths aged 16 to 19 years in the United States, Canada, and England, for differences in usual e-cigarette flavor, device, and brand reported by past-30-day vapers (n = 9512) before (2017, 2018, 2019), during (February 2020), and after (August 2020) implementation of US flavor restrictions. Results. In August 2020, 78.7% of vapers in the United States reported using a flavor prohibited in cartridges or pods, versus 86.3% in Canada (adjusted odds ratio AOR] = 1.73; 95% CI = 1.25,1.40) and 79.8% in England (AOR = 1.10; 95% CI = 0.78,1.55). Disposable e-cigarettes (exempt from flavor restrictions) increased to a greater extent among vapers in the United States (13.2% to 36.8%) versus Canada (7.7% to 14.2%; AOR = 2.01; 95% CI = 1.33, 3.04) and England (10.8% to 16.4%; AOR = 2.33; 95% CI 5 1.52, 3.57). Puff Bar (disposable) emerged as the most popular brand in the United States. Conclusions. Usual flavors used by youth vapers in the United States were unchanged after 2020 restrictions on cartridge-based e-cigarettes. Youths used brands and devices exempt from the restrictions. (AmJ Public Health. 2022;112(7):1014-1024. https://doi.org/10.2105/AJPH.2022.306780)

Hallingberg, B., PhD. (2022). E-cigarette flavors, devices, and brand preferences among youths in canada, england, and the united states: The value and challenges of comparing international survey data. American Journal of Public Health, 112(7), 1011-1013. Retrieved from https://www.proquest.com/scholarly-journals/e-cigarette-flavors-devices-brand-preferences/docview/2681533531/se-2?accountid=211160

In the past 10 to 15 years, e-cigarettes have grown in popularity as a means for smokers to quit. Their emergence has been associated with controversies about unknown effects on smoking and nonsmoking populations. Among adult smokers, e-cigarettes offer important harm reduction potential through supporting them in stopping smoking,1 and there is now growing international consensus that switching to e-cigarettes is likely to do smokers more good than harm. In regard to nonsmokers, particularly young people, concerns have included unknown physiological effects from exposure to e-cigarettes and perceptions that e-cigarettes may lead to more young people taking up smoking (as a new gateway to nicotine addiction or via renormalizing smoking).2Changes in the nature of concerns reflect the technological developments of vape products over this time period. First-generation e-cigarettes were visually more like traditional tobacco cigarettes but lacked choice in flavors, whereas newer versions have evolved, looking less like their predecessors and gaining flavor alternatives. E-cigarette flavors have been demonstrated as a key attractive aspect of use among young people,3 raising questions as to whether flavors are a mechanism through which young people might become regular users of e-cigarettes and perhaps then regular smokers. Equally, however, choice of flavors plays an important role in potentially supporting adults who use e-cigarettes as a smoking cessation aid.4 It has therefore been a challenge for policymakers in different jurisdictions to balance actions that reduce pathways of harm for young people's health and actions that minimize disruption of smoking cessation efforts

among adults, a choice often made within a limited supply of evidence.

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Hekler, E., PhD., Anderson, C. A. M.,PhD.M.P.H.M.S., & Cooper, L. A.,M.D.M.P.H. (2022). Is it time to restructure the national institutes of health? American Journal of Public Health, 112(7), 965-968. Retrieved from https://www.proquest.com/scholarly-journals/is-time-restructure-national-institutes-health/docview/2681523625/se-2?accountid=211160

The mission of the National Institutes of Health (NIH) is "to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability," primarily via biomedical research.1 The current moment, including the COVID-19 pandemic, renewed reckoning with systemic racism, political division, massive wealth inequality, the opioid crisis, rising rates of mental illness, and climate change, highlights the importance of biomedical research and the need for other approaches also. Thus, we ask the question: is it time to restructure the NIH? We explore reasons for and against restructuring and offer next steps.

Mendelsohn, C. P., M.B.B.S., & Wodak, A., M.B.B.S. (2022). Which regulatory framework is best for nicotine vaping? American Journal of Public Health, 112(7), 1001-1002. Retrieved from https://www.proquest.com/scholarly-journals/which-regulatory-framework-is-best-nicotine/docview/2681523610/se-2?accountid=211160

Since our commentary in 2020,1 vaping nicotine has contributed to an unprecedented decline in tobacco smoking rates in the United States in both youths and adults. The empirical evidence for vaping as a substitute for smoking and its positive impact on public health continues to strengthen. However, the recent decision to not authorize most vaping products for the US market seems destined to undermine this remarkable progress in reducing smoking.According to the National Health Interview Survey, the adult cigarette smoking rate in 2020 was 12.5%, an 11% decline since 20192 (Figure A, available as a supplement to the online version of this article at https://ajph. org) Youth cigarette smoking appears to have been almost eliminated. Past30-day cigarette smoking in high schoolers was 1.9% in 2021 according to the National Youth Tobacco Survey.3 Past-30-day vaping declined by 59%- from 27.5% in 2019 to 11.3% in 2021.In spite of this progress, US government policy remains driven by exaggerated concerns about youth vaping, especially the role of flavored products. However, growing evidence supports the hypothesis that, rather than being a gateway to smoking, vaping is displacing young people from smoking.4There is also mounting evidence that flavored vaping products help smokers transition away from cigarettes and that flavor bans inadvertently lead to increased smoking in both adults and youths.5

Morabia, Alfredo,M.D., PhD. (2022). Scientific publishing and the tobacco industry. American Journal of Public Health, 112(7), 951. doi:https://doi.org/10.2105/AJPH.2022.306916

In January 2020 the US Food and Drug Administration (FDA) released a Guidance for the Industry about marketing flavors for e-cigarettes (https://am.ajph.link/fda_ guidance). The guidance was a retreat from previous commitments to ban all flavors except those that tasted like tobacco. Mitch Zeller, then director of the FDA Center for Tobacco Products, explained it as a middle ground that would limit the extent of underage tobacco use without jeopardizing the potential of e-cigarettes to substitute tobacco in adult high-risk smokers (https:// am.ajph.link/FDA_ECIG).The journal invited scholars to give their opinion about the expected impact of the guidance on these two outcomes. All the contributions we received in 2020 were critical of the guidance, but they also gave the impression that the FDA had acted to conform to the industry's expectations. What were the industry's expectations specifically? We checked by asking Derek Yach, who was then the director of an organization funded by Philip Morris International, and Brad Radu, who declares receiving unrestricted grants from tobacco manufacturers, to comment. Their conflicts of interest were mentioned in their two comments and at the beginning of the themed section. Their comments were both critical of the guidance too, which was an important additional piece of information for our dossier.

King, Brian A,PhD., M.P.H. (2022). Flavors remain a major driver of youth E-cigarette use. American Journal of Public Health, 112(7), 999-1000. Retrieved from https://www.proquest.com/scholarly-journals/flavors-remain-major-driver-youth-e-cigarette-use/docview/2681523582/se-2?accountid=211160

Over the past decade, the landscape of youth e-cigarette use has been dynamic.1,2 E-cigarettes have been the most commonly used tobacco product among US youths since 2014,1 and in 2019, current (past30-day) e-cigarette use prevalence reached a peak among middle-school (10.5%) and high-school (27.5%) students.3 During 2020 to 2021, the COVID-19 pandemic resulted in virtual learning for students, which impacted youth access to e-cigarettes, including from social sources; in 2020, before COVID-19 was declared a pandemic, more than half of youths who currently used e-cigarettes reported getting their e-cigarettes from a friend.3 Nonetheless, in 2021, more than 2 million US middle- and high-school students used e-cigarettes.

Dasgupta, Sharoda,PhD., M.P.H., Tie, Y., PhD., Beer, L., PhD., Lyons, S. J., M.S.P.H., Shouse, R. L., & Harris, N., PhD. (2022). Geographic differences in reaching selected national HIV strategic targets among people with diagnosed HIV: 16 US states and puerto rico, 2017–2020. American Journal of Public Health, 112(7), 1059-1067. doi:https://doi.org/10.2105/AJPH.2022.306843

Objectives. To assess geographic differences in reaching national targets for viral suppression, homelessness, and HIV-related stigma among people with HIV and key factors associated with these targets. Methods. We used data from the Medical Monitoring Project (2017-2020) and the National HIV Surveillance System (2019) to report estimates nationally and for 17 US jurisdictions. Results. Viral suppression (range = 55.3%-74.7%) and estimates for homelessness (range = 3.6%-11.9%) and HIV-related stigma (range for median score = 27.5-34.4) varied widely by jurisdiction. No jurisdiction met any of the national 2025 targets, except for Puerto Rico, which exceeded the target for homelessness (3.6% vs 4.6%). Viral suppression and antiretroviral therapy dose adherence were lowest, and certain social determinants of health (i.e., housing instability, HIV-related stigma, and HIV health care discrimination) were highest in Midwestern states. Conclusions. Jurisdictions have room for improvement in reaching the national 2025 targets for ending the HIV epidemic and in addressing other measures associated with adverse HIV outcomes-especially in the Midwest. Working with local partners will help jurisdictions determine a tailored approach for addressing barriers to meeting national targets.

Sweanor, D., J.D., & Houston, A. R.,J.D.M.A.L.L.M. (2022). Killing vaping and americans. American Journal of Public Health, 112(7), 1007-1008. Retrieved from https://www.proquest.com/scholarly-journals/killing-vaping-americans/docview/2681523535/se-2?accountid=211160

In this follow-up to our 2020 article,1 we find our predictions that the US Food and Drug Administration (FDA) approval standards for vaping products would decimate the market for a safer alternative to combustible tobacco cigarettes and hand control of what remains to Big Tobacco have come true, to the detriment of public health.

Melendez, J. H., PhD., Gilliams, E. A.,M.D.M.Sc, Yu, T., ScM., Williford, S. L., M.P.H., Armington, G. S., M.A., Silver, B., M.B.A., . . . Hamill, M. M.,M.B.ChB.PhD. (2022). Rapid uptake of testing for chlamydia, gonorrhea, and HIV from an online platform, April–October 2020. American Journal of Public Health, 112(7), 985-989. doi:https://doi.org/10.2105/AJPH.2022.306835

The Baltimore City Health Department (Baltimore, MD) promoted IWantTheKIt for chlamydia, gonorrhea, and HIV testing to city residents and clinic patients when COVID-19 restricted in-person clinic services. From April to October 2020, monthly online IWantTheKit orders increased by 645%. A high prevalence of chlamydia and gonorrhea was detected, and 96% of users who tested positive for chlamydia and gonorrhea were successfully contacted for treatment. Uptake by Baltimore City Health Department priority populations and excellent treatment linkage demonstrated how a public health-academic partnership successfully addressed a service gap during the pandemic. (Am J Public Health. 2022;112(7):985-989. https:// doi.org/10.2105/AJPH.2022.306835)

Celestin, Michael D, Jr,N.C.T.T.S., C.H.E.S., & Gee, R. E., M.D. (2022). The epidemic during the pandemic: Assessing the federal drug administration's efforts to curb youth smoking after passage of HR2339 by congress.

American Journal of Public Health, 112(7), 1005-1006. Retrieved from https://www.proquest.com/scholarly-journals/epidemic-during-pandemic-assessing-federal-drug/docview/2681523467/se-2?accountid=211160

Despite decades of efforts to reduce the use of tobacco products in the United States, tobacco use remains the leading preventable cause of disability, disease, and death.1 Most adults report starting tobacco use in their teens.2 In January 2020, the US Congress passed the Protecting American Lungs and Reversing the Youth Tobacco Epidemic Act (HR2339). The act sought to improve Food and Drug Administration (FDA) regulation ofthe marketing, sale, makeup, safety, and study of electronic nicotine delivery systems (ENDSs).

Erratum in: "the tobacco industry's renewed assault on science: A call for a united public health response". (2022). American Journal of Public Health, 112(7) doi:https://doi.org/10.2105/AJPH.2021.306683

Credits. (2022). American Journal of Public Health, 112(7), 946. Retrieved from https://www.proquest.com/scholarly-journals/credits/docview/2681523430/se-2?accountid=211160

Kapadia, Farzana,PhD., M.P.H. (2022). Confronting and ending food insecurity during and beyond the pandemic: A public health of consequence, july 2022. American Journal of Public Health, 112(7), 962-964. Retrieved from https://www.proquest.com/scholarly-journals/confronting-ending-food-insecurity-during-beyond/docview/2681523428/se-2?accountid=211160

JPH provides a robust evidence base that describes how economic crises, in both the past and the present, exacerbate deep-rooted social and structural vulnerabilities that fuel food insecurity and undermine population health. In short, we have substantial information across multiple disciplines on the drivers and consequences of food insecurity. The issue before us now is how to deploy this evidence to build better integrated, more effective, and more sustainable interventions that end food insecurity. The COVID-19 pandemic has served as a catalyst for implementing new interventions and revamping already tested interventions to improve population-level health outcomes driven by food insecurity. In this issue of AJPH, we present a field report describing an intervention tackling food insecurity in rural communities. Importantly, this report highlights challenges to intervention implementation during the pandemic and efforts to overcome these challenges. Such information may provide useful lessons in how to close the gap in food insecurity for vulnerable populations and promote consequential public health practices moving forward.

McKee, Martin,M.D., D.Sc. (2022). The case against flavors in E-cigarettes is stronger than ever. American Journal of Public Health, 112(7), 1003-1004. Retrieved from https://www.proquest.com/scholarly-journals/case-against-flavors-e-cigarettes-is-stronger/docview/2681523418/se-2?accountid=211160

In my earlier AJPH commentary, I expressed concern about the failure of the US Food and Drug Administration to ban flavors in e-cigarettes.1 Subsequent research has strengthened my concerns about the health effects of flavorings. There are many thousands of flavors in use, and it is necessary to test them in pure form as well as their combustion products-which can include a number of known toxins, in particular aldehydes-and interactions between them.2Turning to the use of flavors to attract new users, especially adolescents, a growing body of work has examined what is termed "abuse liability," which is measured by asking users just after using a product about their level of satisfaction with it and whether they would like more. A recent systematic review has brought this evidence together.3 In an analysis of 31 epidemiological studies that examined responses to flavors in e-cigarettes, Gades et al. concluded, "Non-tobacco flavors are highly valued and increase the abuse potential and appeal of e-cigarettes."3(p6) This finding received some support from the five animal studies reviewed-which Gades et al. concluded "suggest that sweetness and cooling flavors elicit rewardrelated behaviors and neuroplasticity on their own, as well as increase the rewarding properties of nicotine"3(p6)- and from the 16 experimental studies-from which the authors concluded, "Sweet and cooling flavors had higher appeal and abuse potential compared to tobacco-flavor."3(p6)

Lee, Joseph G L,PhD., M.P.H., & Wimark, T., PhD. (2022). Connecting environmental injustice for lesbian, gay, bisexual, and transgender populations with neighborhood health equity research. American Journal of Public Health,

112(7), E1-E2. Retrieved from https://www.proquest.com/scholarly-journals/connecting-environmental-injustice-lesbian-gay/docview/2681523397/se-2?accountid=211160

Erratum in: "food insecurity and delayed or forgone medical care during the COVID-19 pandemic". (2022). American Journal of Public Health, 112(7), E6-E8. doi:https://doi.org/10.2105/AJPH.2022.306724

Correlates and reasons to use E-cigarettes among medical students in saudi arabia. (2022). American Journal of Public Health, 112(7), 952. doi:https://doi.org/10.2105/AJPH.2022.306954

Hendricks, Marccus D,PhD., M.P.H. (2022). Leveraging critical infrastructure within an environmental justice framework for public health prevention. American Journal of Public Health, 112(7), 972-974. Retrieved from https://www.proquest.com/scholarly-journals/leveraging-critical-infrastructure-within/docview/2681523280/se-2?accountid=211160

If we think of communities as a stage play production, land use would represent the markers on the stage, and infrastructure would represent the props, systems, or facilities in which the actors live, work, and play. The quality of the production and performance; options for how actors move, interact, and communicate; and access to basic technology and technical support are all predicated on the inventory, condition, and distribution ofthese critical systems or props. In communities, these are fundamental matters of environmental justice. Environmental justice raises the question of whether environmental activities, laws, regulations, and policies have been applied fairly across all segments of the population, namely low-income communities of color. Thus, infrastructure development, mediated by an environmental justice framework, metaphorically and quite literally sets the stage for essentially all outcomes related to the built environment, from scenario planning to public health.The built environment, including infrastructure, has always been a fundamental driver for public health outcomes.1,2 Hence, scholars have documented that, above any individual physiological indicator of health, zip code is one of the best predictors of public health at the neighborhood level.3 This corroborated evidence further draws the connection between infrastructure and public health, particularly in the context of environmental justice. A well-known example of this nexus is the public health crisis in Flint, Michigan, a majority Black city with a 40% poverty rate whose drinking water was contaminated with lead because of corroded pipe infrastructure and the associated developmental health risks to the local predominately Black children.4 Another, lesser-known illustration is the lack of sewerage infrastructure in low-income communities of color across this country, such as in rural Lowndes County, Alabama, and the associated sanitary health risks, as documented in Catherine Flowers's book Waste: One Woman's Fight Against America's Dirty Secret5 These examples are just scratching the surface of a host of issues that we live with daily occurring at this intersection that are both well publicized and more latent. The moral of these stories is that infrastructure and public health challenges in America are omnipresent, especially in communities of color.In this editorial, I provide a high-level portrayal of the relationship between critical infrastructure systems and public health in the context of environmental justice. I begin by discussing the legacy of infrastructure development at the neighborhood scale in terms of how racism, redlining, and residential segregation have led to environmental injustice in infrastructure and how this phenomenon is a sociophysical determinant of public health. I then provide more contemporary illustrations of infrastructure, environmental injustice, and implications for public health. Last, I discuss how infrastructure can act as an intervention for not only environmental justice but also public health.Ultimately, there is an opportunity to leverage infrastructure within an environmental justice framework as a form of "preprimary" public health prevention. For example, the primary prevention prescription for chronic illnesses such as cardiovascular disease and diabetes is exercise, but exercise at the neighborhood level is severely limited without access to parks, sidewalks, and recreational facilities.6 Furthermore, evidence suggests that disparities exist in the distribution of these health-promoting infrastructures along the lines of race, ethnicity, and class.7 Therefore, infrastructure and environmental justice are critical prerequisites in public health for more just, well, and resilient communities of color.

Xie, W.,DrP.H.M.P.H. (2022). The food and drug administration's e-cigarette flavor restrictions have not gone far enough to curb the youth e-cigarette use epidemic. American Journal of Public Health, 112(7), 1009-1010. Retrieved from https://www.proquest.com/scholarly-journals/food-drug-administrations-e-cigarette-

flavor/docview/2681523152/se-2?accountid=211160

Youth e-cigarette use in the United States has skyrocketed in the past decade. Driven by targeted marketing, high nicotine content, and the availability of flavors appealing to youths,1 past 30-day use surged among high school students from 1.5% in 2011 to 27.5% in 2019.2 To curb youth access and use, the US Food and Drug Administration (FDA) issued an enforcement policy against any flavored, cartridge-based e-cigarettes with tobacco and menthol flavor exemptions in February 2020. The policy was informed by studies showing that most youths preferred flavored cartridge-based e-cigarettes and that few youths use tobacco- and menthol-flavored products. Ever since its announcement, the policy has been criticized for the lack of clarity in flavor definitions and its narrow focus, omitting disposable products, ignoring other product features that appeal to tobacco-naive and never users (e.g., salt-based nicotine), and leaving other flavored tobacco products unrestricted.3,4