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Making the Invisible Causes of Population Health Visible: A Public Health of Consequence, August 2018

See also Cabrera de León et al., p. 1091; Mooney et al., p. 987; and Mehta et al., p. 1059.

As we continue to promote causal thinking in population health,[1] we note that the causes that affect population health are, in some respects, well enumerated. In the United States, we know that heart disease is the leading cause of death, followed by cancer and then chronic lower respiratory disease. And yet, as we have argued frequently in these columns, these causes of death (or, conversely, their absence, which leads to good health) are simply one way of looking at the production of health. Another way, which has equal validity, would be to suggest focusing on the behaviors that contribute to these causes of health, leading us to focus on smoking, toxic substances, the use of firearms, and obesity as the causes of death.[2] Yet another approach would tackle the more foundational drivers of population health, which would focus on the contributions of low education, poverty, and spatial racial residential segregation as the causes of health and disease.[3]

None of these approaches are wrong—all are correct. Indeed, although, for example, low education sets one on a trajectory that will include a poor living environment, limited opportunities for exercise, and, subsequent, obesity, all of these ultimately manifest as cardiovascular disease, and it is cardiovascular disease that compromises health. Therefore, an understanding of health requires an understanding of the complex causal architecture that creates health in the first place and structured thinking about how we can grapple with these complex causes to improving health.[4]

One of the challenges we face with this reckoning, however, is that it is unusual for one discipline to engage with all of these factors; this leads to fragmented knowledge and limits our full grasp of the factors that contribute to health. In that regard, throughout its history *AJPH* has played an important role in shaping our thinking about the full range of factors that shape health, highlighting forces from the biologic to the macrosocial that contribute to population health. Three articles in this issue highlight forces that we see discussed infrequently in the health literature, reminding us of their centrality in the creation of population health.

THREE HIDDEN FORCES THAT PRODUCE HEALTH

First, Cabrera de León et al. (p. 1091) focus on the contribution of austerity measures to public health. Using data from Spain and the United States from 2000 to 2015, they show that the advent of economic austerity measures in Spain in 2010 reversed previous health gains and contributed to more than half a million deaths more than the expected number over a five-year period. Although the epidemiologic relationship between economic function and population health is by no means straightforward,[5] it is also abundantly clear that economic policies do have an impact on population health. The article in this issue of *AJPH* adds to this literature and contributes to the science that aims to understand how these policies influence health to provide guidance to policymakers about the health consequences of economic decisions.

Second, Mooney et al. (p. 987) tackle an issue that substantially challenges US population health even though we seldom recognize it as a driver of health: incarceration. The incarceration rate in the United States is higher than that of any other country in the world, and it is about five times higher than the worldwide median. There are about 2 million incarcerated adults, or nearly 1 in 100 Americans. Another nearly 5 million people are on probation or parole, for a total of 7 million adults: about 1 in 35 US residents are under correctional supervision. The criminal justice system perpetuates racial inequities, thus continuing centuries of minority disenfranchisement. African Americans constitute 13% of Americans but 40% of the incarcerated population, contributing to the profound and persistent racial disparities that

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characterize health in the United States. Mooney et al. use a natural experiment: California's passage of Proposition 47, which reclassified felony drug offenses to misdemeanors in 2014. The authors show that the absolute Black–White disparities in monthly felony arrests decreased by half in absolute terms (although the decline was stronger among Whites and Latino's than among Blacks) and continued to decrease over time. They conclude, correctly, that fixing broken elements of the justice system can reduce inequalities in the burden of incarceration and contribute to lessening the disproportionate burden of poor health faced by minority groups.

Third, using data from the Behavioral and Risk Factor Surveillance Survey, Mehta et al. (p. 1059) study whether subsidized housing types—specifically public housing and rental assistance—are associated with asthma in the Boston, Massachusetts, adult population. They find that asthma is more than 100% more likely among public housing development and rental assistance renters than among homeowners. Importantly, this observation is relatively unaffected by income, a range of health behaviors, and secondhand smoke, suggesting that other sources of vulnerability, which are not easily measured, are contributing to this difference. The authors correctly note that further research—and potentially natural experiments that follow the trajectory of current public housing renters who transition to homeownership or other private market rentals—can help determine whether other environmental triggers that renters are exposed to[6] contribute to these disparities. This article adds to a robust and growing body of literature that shows that housing is another ubiquitous force (i.e., we all live in some type of housing, except the homeless) that ultimately influences health.[7]

SEEING THE CAUSES

These three articles in this issue of *AJPH* do their part to make the invisible visible. Economic forces, policies that shape our criminal justice system, and available housing all shape population health. And yet they seldom feature in the public conversation about health, which is dominated by medical approaches and cures. Economic policies, the criminal justice system, and housing are all—however invisible—drivers of population health. Efforts to improve these are as much "medicine" as are the drugs that act on the molecular mechanisms of disease. That we as a society invest so much more in medical approaches and cures than in the causes of poor health suggests that we are not doing as well as we should be at making all the causes of health visible. These articles and others like them in *AJPH* are a step in the right direction. AJPH

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