

A Public Health of Consequence: Review of the August 2016 Issue of *AJPH*

In this issue of *AJPH*, Bor's¹ invited editorial focuses on the role of natural experiments in helping guide inference and thinking in public health. Bor suggests that with the appropriate cautions and caveats, we need not leave the results from nonrandomized trials at the doorstep. We can and should invite them in. In particular, he argues convincingly that natural experiments present an opportunity to study hard-to-randomize exposures, with real potential for translation into policy—a core aim of a public health of consequence. Bor makes the case that this returns public health (to some extent) to its roots, studying hard to assess macro-level changes that stand to influence the health of populations. We find Bor's argument compelling, and of a piece with the argument made by Westreich et al.² in a recent issue of *AJPH* about our need to move beyond the traditional “hierarchy of evidence” to a broader, more imaginative use of the potential methodological arsenal that can help us understand the forces that drive the health of populations.

In this issue of *AJPH*, two articles well illustrate the point made by Bor—how capitalizing on a natural experiment can help guide inference for generating generalizable knowledge.

The first of these articles concern perhaps the most prominent

macro-level health policy intervention of the past decade: the implementation of the Affordable Care Act (ACA). Buchmueller et al.³ assess insurance coverage for different racial/ethnic groups with the introduction of the ACA using the American Community Survey from 2008 to 2014. The need for action on this front is in many ways astonishing. In 2013, 41.3% of Hispanics and 25.8% of Blacks were uninsured, compared with 14.8% of Whites. This threefold difference in insurance coverage should have long provoked outrage at the differential access to health care across the United States. Buchmueller et al. show that with the introduction of the ACA, these gaps narrowed as Hispanics saw more gains in insurance coverage than did Whites. Importantly, this difference was more pronounced in states that implemented the Medicaid expansion. This narrowing in racial/ethnic disparities is heartening, although the wide gaps in coverage between these groups remain alarming. The evaluation of these effects of the ACA, though, highlights the long-tail consequences of macro-level policy change, and how their evaluation can guide us to the full range of consequences of legislation.

In an interesting addition to this discussion, Nguyen et al.⁴ tackle another aspect of the ACA. Despite the many evident benefits of

the ACA, now supplemented by data about narrowing of racial/ethnic differences in coverage, 19 states, mostly in the US south, have not expanded Medicaid under the ACA. Nguyen et al. show that low-income adults with both public and private insurance have substantially better access to care than do adults without insurance, further building the case for insurance coverage and the compelling logic for participation in the full range of benefits available under the ACA. The limited uptake of the ACA remains unfortunately a data-ill-informed political issue, ill-serving the populations who would benefit from its widespread uptake.

On a different issue, Schmidt et al.⁵ tackle the growing wave of medical marijuana laws around the United States. To date, 23 states and the District of Columbia have legalized marijuana for medical purposes, with more states likely to follow suit. While this expansion has come in large part as a response to the growing acceptance of the benefits of medical marijuana for a range of medical conditions,

concerns remain that this shift will result in shifting attitudes about marijuana use (particularly among young people) with subsequent changes in marijuana use and attendant adverse consequences. This, then, represents an unfolding natural experiment nationwide, ripe for analysis. Schmidt et al. assess whether there were associations between living in states with medical marijuana laws and more permissive attitudes toward marijuana. Demonstrating some of the challenges in these types of analyses, Schmidt et al. do find a trend toward more permissive attitudes among states with medical marijuana legislation but note that it is rather difficult to disentangle whether this permissiveness gives rise to a political culture that is likelier to pass marijuana legislation or vice versa. Longer-term longitudinal assessments will be needed to tackle this question more definitively, including, potentially, the adoption of methods that extend beyond the regression approaches adopted in this article. Others in the field⁶ have similarly wrestled with this issue, leaving the result as yet unclear, and fertile ground for future analyses.

We are heartened both by Bor's commentary and by these articles' grappling with some of the more challenging natural experiments of our time. We look forward to more innovative work

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in the area, toward understanding the macrosocial drivers of population health. *AJPH*

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Could Raising the Minimum Wage Improve the Public's Health?

The minimum wage is once again generating contentious political debates. Virtually all the arguments involve economics, however. Questions pertain to the effects of increases in the minimum wage on poverty, unemployment, automation, job quality, income of low-wage workers, work hours, and income inequality. Rarely, if ever, do debates mention public health. But all these factors—poverty through income inequality—are widely researched in the Social Determinants of Health literature. Omission of public health from the debates, I believe, results from a paucity of research. Whereas some studies address living wages, wage theft, and the Earned Income Tax Credit, few public health researchers or epidemiologists address minimum wages.¹ Moreover, despite the colossal number of minimum wage studies by economists, a meager number consider health.

Hikes in the minimum wage affect many Americans. One estimate indicates that increasing the federal minimum wage to \$12 per hour by 2020 would lift wages for 35.1 million workers, or 25.5% of all workers.² Approximately 28.4 million would be directly affected and 6.7 million indirectly affected through “ripple effects,” whereby workers earning just above the

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minimum wage would also receive raises. In addition, the percentage of workers in low-wage jobs has been increasing for 15 years.¹ Income inequality has been worsening for more than 30 years, not just in the United States, but in most industrialized countries.³ American workers affected by an increase in the minimum wage defy stereotypes: the average age is 36 years, higher percentages are for those aged 55 years and older (15%) than for adolescents (11%), and approximately two thirds are aged 25 years or older.² Whereas estimated effects on employment are controversial, the Congressional Budget Office estimates that a federal hike to \$10.10 per hour in 2016 would result in a 500 000 or 0.3% drop in total employment.⁴ Although no consensus exists, most studies show that increases in the minimum wage reduce poverty.^{2,4}

The studies by Komro et al.⁵ and Tsao et al.⁶ signal welcome turns toward public health research into minimum wages and present consistent findings. Komro et al.⁵ treat rates of low birth weight (LBW) and postneonatal mortality as dependent variables in regressions in which the key independent variable is the difference between the state and federal minimum wage. All variables are aggregate statistics measured across states,

months, and years from 1980 through 2011. Additional covariates include fixed effects for years and states, percentage of African Americans, mean ages of mothers, poverty rates, and cigarette sales. Had all states raised their minimum wages by one dollar in 2014, Komro et al.⁵ estimate 2790 fewer LBW births and 518 fewer neonatal deaths.

There is much to recommend their design. Komro et al.⁵ employ the fixed-effects method that economists advocate. Fixed effects for states and years “sweep out” idiosyncratic state characteristics and national time trends. In addition, Komro et al.⁵ choose dependent variables that could plausibly be affected by an annual increase in the minimum wage. Pregnancies occur within nine months, and a woman's financial, physiological, and psychological well-being could plausibly be affected by an increase in her or her partner's wage within the same year. To their credit, Komro et al.⁵ also estimate the effects of increasing minimum wages in the year before the LBW birth or postneonatal death. By

contrast, incidence of cancer might be a poor choice for a dependent variable because cancer frequently results from years of exposure to carcinogens so that it is less plausible that a one-year change in the minimum wage would affect cancer incidence.

Overall, the Komro et al.⁵ findings are believable, but there are limitations. Variables likely do not contain much variation. Month-to-month variations in LBW and mortality within any state tend to be small. In addition, because increases in the minimum wage typically go into effect in January and are maintained for at least a year, within any given state-year, there is virtually no variation. Time series data that do not contain much variation sometimes provide questionable “statistically significant” results. Finally, because of controversies surrounding the effects of minimum wages on unemployment, the presentation of results with and without an unemployment covariate might have provided insights similar to the insights provided by their inclusion and exclusion of the poverty covariate in their Table 1.

Tsao et al.⁶ produce estimates of the effects of raising the minimum wage to \$15 in New York City

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