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How the Minimum Wage Affects the Health Insurance Coverage, Safety Net Program Participation, and Health of Low-Wage Workers and Their Families

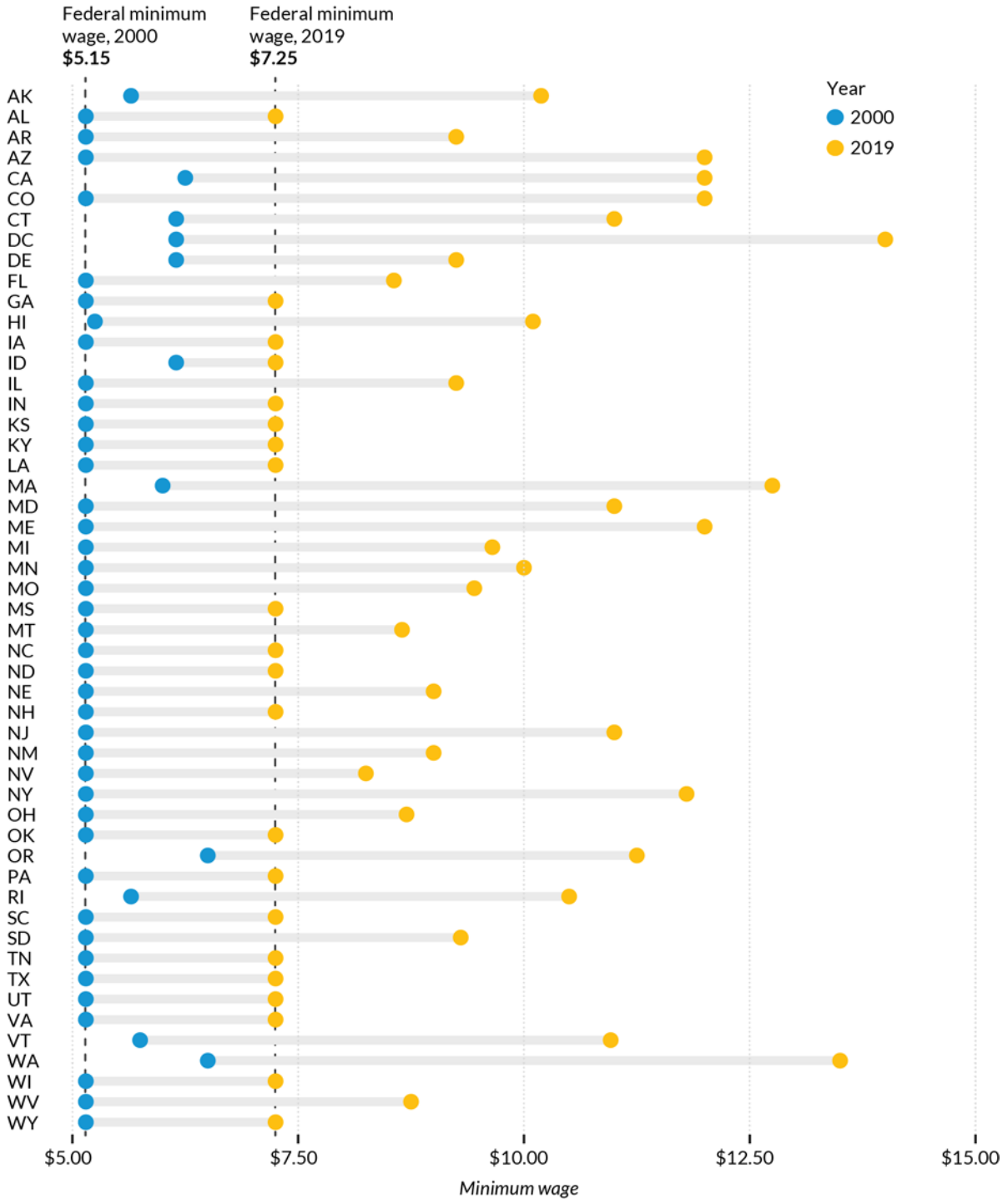
A Review of Recent Literature

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In President Biden's first month in office, the administration proposed more than doubling the current federal minimum wage from \$7.25 to \$15 per hour as part of a pandemic relief package. Ultimately, this provision was withdrawn from the final relief package, and the federal minimum wage remains at \$7.25, the same rate in place since 2009.¹ Though the federal minimum wage has not risen in more than a decade, many states and localities have raised their minimum wages. In 2010, 14 states had minimum wages that exceeded the federal rate, and by 2019, 23 states had minimum wages above the federal rate (figure 1). Currently, eight states (California, Connecticut, Delaware, Illinois, Maryland, Massachusetts, New Jersey, and New York) and Washington, DC, have implemented or enacted legislation that would phase in a state minimum wage of \$15.²

FIGURE 1
Federal and State Minimum Wages in 2000 and 2019



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Source: "UKCPR National Welfare Data, 1980–2020," University of Kentucky Center for Poverty Research, accessed July 13, 2022, <http://ukcpr.org/resources/national-welfare-data>.

In this brief, we describe the characteristics of minimum-wage workers, discuss the potential pathways through which the minimum wage may affect the health of workers and their families, and review recent empirical studies in this area. Given the competing influences of higher earnings and, possibly, the loss of work hours or employment, economic theory does not provide a clear answer on the overall effects of a minimum-wage increase on health, health behaviors, and eligibility for public programs and fringe benefits. Though a recent review of the effects of the minimum wage on direct measures of health provides a rigorous meta-analysis of this topic (Leigh, Leigh, and Du 2019), it was restricted to analyses published by mid-2018, and most of the reviewed papers investigated the effects of changes in minimum-wage laws that are incremental and much smaller than the changes currently underway in many states. We review additional papers published after 2018—and after the period of studies reviewed by Leigh, Leigh, and Du (2019)—that provide credible new evidence of the effects of state minimum-wage changes on adult mortality, adult health, and infant and child health. In contrast to Leigh, Leigh, and Du (2019), we also summarize the literature on the effect of minimum-wage increases on eligibility for means-tested public programs and the receipt of fringe benefits from employers. Our key findings are as follows:

- In 2019, about 9.9 million workers had hourly wages at or below the effective minimum wage, defined as the greater of the state minimum wage and the federal minimum wage. Minimum-wage workers were younger, more likely to be women, more likely to have lower educational attainment, and more likely to be Hispanic than all other workers.
- To date, researchers have estimated modest impacts of minimum-wage increases on health. Evidence suggests minimum-wage increases are associated with declines in smoking prevalence and the number of days with health limitations among low-wage workers and lower prevalence of low birth weight among such workers' newborns. Moreover, recent evidence suggests minimum-wage increases reduce rates of mortality due to suicides, alcohol, or drugs and are associated with improved parent-reported health among young children.
- Several recent studies have documented that minimum-wage increases are associated with reduced employer-sponsored insurance (ESI) coverage among low-wage workers. This is consistent with the theory that as the minimum wage rises, employers of minimum-wage workers may cut back on workers' fringe benefits. Although the measured reduction in ESI is not associated with changes in overall coverage, it could affect health care access and affordability.
- Few studies examine the differential effects of minimum-wage increases by worker race or ethnicity. Evidence demonstrates that increases in the minimum wage are associated with reduced racial and ethnic disparities in income. Given the well-documented inequities in health by race and ethnicity, future research on the efficacy of the minimum wage as a policy lever to reduce health inequities is warranted.

Future studies examining the large expansions in the minimum wage currently underway in many states may provide more definitive evidence on the health-related effects of minimum-wage increases. Though this is an area that has received substantial research attention over the past several decades,

recent and forthcoming large changes in minimum wages could produce new, materially different findings about how minimum-wage increases affect the health and health benefits of workers and their family members.

We first provide descriptive information from the Current Population Survey (CPS) on the characteristics of people paid the minimum wage. Next, we summarize the mechanisms by which the minimum wage could affect the health and well-being of workers. Finally, we provide a comprehensive summary of the recent literature on the minimum wage's effects on the health of workers and their families, worker benefits and health insurance coverage, and participation in safety net programs.

Who Works at the Minimum Wage?

Table 1 presents some characteristics of all workers, those who work for hourly pay, and those paid near or below the minimum wage from 2019 CPS Outgoing Rotation Group earnings data. Though CPS data are available through 2022, we chose to use data from before the pandemic disrupted labor markets. In 2019, of the estimated 82.4 million workers who reported working for hourly pay, we estimate that 9.9 million worked at or below the effective minimum wage, defined as the greater of the state minimum wage and the federal minimum wage.³ We estimate about 1.6 million workers were paid hourly wages at or below the *federal* minimum wage (\$7.25 in 2019; data not shown).⁴ Relative to all workers working for hourly pay, minimum-wage workers were younger, more likely to be women, less likely to be non-Hispanic white, and more likely to be Hispanic. Minimum-wage workers were also about 18 percentage points less likely to be married, about 12 percentage points more likely to have a high school degree or less education, and about 8 percentage points less likely to be a parent than all workers working for hourly pay.

Table 1 shows that in the absence of any labor market response, raising the federal minimum wage to \$12 would increase wages for 27.7 percent (23 million) of hourly wage workers and would represent a raise for about 92 percent of minimum-wage workers. Raising the minimum wage to \$15 would result in a pay raise for 49.4 percent (41 million) of these workers.⁵

TABLE 1

Select Characteristics of All Workers, Those Working for Hourly Pay, and Those Paid Near or below the Minimum Wage in the United States, 2019

| | All workers | Hourly wage workers | Hourly wage workers paid near or below the minimum wage |
|--|--------------|---------------------|---|
| Demographic characteristics | | | |
| Average age | 42.3 | 39.6 | 33.9 |
| Female | 47.0% | 50.3% | 59.1% |
| Non-Hispanic white | 62.1% | 56.7% | 48.4% |
| Non-Hispanic Black | 11.5% | 13.7% | 12.7% |
| Non-Hispanic other race | 8.8% | 7.9% | 10.2% |
| Hispanic | 17.6% | 21.8% | 28.7% |
| Married | 55.7% | 47.1% | 29.6% |
| High school education or less | 33.9% | 45.4% | 57.3% |
| Parent | 34.1% | 31.2% | 22.8% |
| % of hourly wage workers whose wages would increase under a | | | |
| \$12 minimum wage | n/a | 27.7 | 91.5 |
| \$15 minimum wage | n/a | 49.4 | 100.0 |
| Estimated number of workers (millions) | | | |
| | 157.5 | 82.4 | 9.9 |

Source: 2019 Current Population Survey Outgoing Rotation Group earnings data.

Notes: n/a = not applicable; all workers include both hourly wage and non-hourly wage workers. Excludes respondents in the armed forces. Workers paid near or below the minimum wage work for hourly rates below the applicable minimum wage (based on their state of residence) with an additional \$0.50 added to account for potential measurement error. Estimates of the share of workers affected by minimum-wage changes assume no effects on other labor market factors, such as labor force participation, employment, or hours worked.

How Minimum-Wage Increases Can Affect Health

In this section we describe several of the main mechanisms by which changes in the minimum wage might affect workers' health and show that economic theory does not provide a clear answer about the direction of the effects of minimum-wage changes. Understanding these underlying mechanisms helps identify which are relevant when reviewing the empirical findings.

First, holding work hours and safety net program eligibility constant, minimum-wage increases directly raise worker earnings, which could translate into improved health.⁶ Increased income can help low-income workers and their families purchase goods and services that could directly improve health, such as health care services, prescription medicines, high-quality food and safe water, and educational and housing investments. Higher earnings may also make it easier for people to pay for rent, mortgage, tuition, or credit card payments, thereby reducing financial stress and improving mental health. Increased income provides the means to acquire the material conditions necessary for good health, but it can also improve “social participation” (e.g., by making workers feel in control of life events; Marmot 2002). The sum of these effects is higher quality of life, greater well-being, and improved health. In fact, considerable evidence from another income-enhancing policy, the earned income tax credit (EITC), has

shown that increased income is associated with improved mental health and better long-term health trajectories (Boyd-Swan et al. 2016; Braga, Blavin, and Gangopadhyaya 2020; Evans and Garthwaite 2014; Gangopadhyaya et al. 2020).

Higher earnings could also, however, result in the loss of eligibility for Medicaid or for premium subsidies and cost-sharing reductions for individual plans on the Affordable Care Act (ACA) Marketplace, which could negatively affect health. Gangopadhyaya and colleagues (2019) estimated that the effects of a large minimum-wage increase to \$15 could result in a significant number of workers losing Medicaid eligibility in New Jersey, which expanded Medicaid under the ACA and has income eligibility rates up to 138 percent of the federal poverty level. However, many Medicaid-eligible workers in this group were not enrolled in Medicaid, which suggests minimum-wage increases may have a small impact on Medicaid disenrollment.

More broadly, the risk of losing Medicaid benefits is likely greater in nonexpansion states; income eligibility limits are much lower in such states, and smaller changes in the minimum wage could result in a significant share of residents losing Medicaid eligibility. Depending on what workers' wages were before a minimum-wage increase, the increase in wages could be offset by a loss of Medicaid benefits, which could leave workers worse off overall, especially if their prevailing household income was near an eligibility cutoff.

Higher earnings could also, however, result in the loss of eligibility for or reduction in other means-tested safety net provisions that phase out with income, such as the Supplemental Nutrition Assistance Program (SNAP), the child and dependent care tax credit, and the EITC. For example, interactions between the EITC and the minimum wage will unambiguously raise earnings for minimum-wage workers, but depending on where household earnings are on the EITC schedule, the marginal earned dollar may be complemented by a greater total credit (if household earnings are in the "phase-in" range for EITC benefits), offset the credit (if household earnings are in the "phase-out" range), or keep the credit unchanged (if household earnings are in the "plateau" range).⁷ Thus, higher earnings for minimum-wage workers should not affect take-home earnings net of the EITC, meaning this is not a channel through which we would expect changes in health.

Higher earnings could affect health behaviors through several mechanisms, but economic theory does not have a clear prediction of higher earnings' impact on health behaviors. On the one hand, as earnings rise, low-wage workers could move away from purchasing inexpensive and unhealthy goods (e.g., sugar-sweetened beverages and other goods people purchase more of when their incomes are constrained) and toward purchasing healthier and more expensive goods (e.g., salads, health care services, and other goods people purchase more of when their incomes are less constrained). Greater earnings could lower people's stress and anxiety over paying for basic needs and incentivize workers to improve health behaviors because they raise the opportunity cost of poor health. On the other hand, greater purchasing power may enable low-wage workers to purchase more goods that harm health, such as alcohol and tobacco products. In addition, the consumption of healthy goods and investments in health might decline if minimum-wage increases result in higher prices or reduce employment among people with low incomes.

Finally, minimum-wage increases could result in job losses or losses of work hours, potentially lowering earnings for some workers. The effects of the minimum wage on employment or hours worked have been intensely debated, with some studies identifying relatively large negative effects (Jardim et al. 2017; Neumark and Wascher 1992, 1994, 1995, 2000; Neumark, Salas, and Wascher 2014) and others finding no effects on employment (Allegretto et al. 2017; Card and Krueger 1994; Cengiz et al. 2019; Dube, Lester, and Reich 2010). The loss of work or work hours will directly reduce income, which will have the reverse effect of the earnings mechanisms described above. A reduction in work hours could, however, lower work-related stress and potentially improve physical well-being if workers use nonwork time to engage in health investments such as exercise.

Employers may be unable to provide higher wages for workers while maintaining preexisting employee fringe benefits, such as ESI coverage. Consequently, minimum-wage increases could result in employers scaling back fringe benefits, which could adversely affect worker health as well.

Review of Recent Literature

In this section we summarize the empirical studies that examine the effects of the minimum wage on health and safety net program participation. Most of the evidence to date suggests minimum-wage increases have had modest health benefits and mixed effects on program participation.

Minimum Wage and Health

A 2019 literature review found 33 studies that assessed the effects of minimum-wage laws on various health outcomes in the US, Canada, the UK, and the rest of Europe (Leigh, Leigh, and Du 2019). Among these studies, only 15 met the criteria of using direct measurements of health and being a high-quality study based on Cochrane Review guidelines (Armstrong et al. 2007).⁸ These 15 studies covered more than 20 outcomes, including self-reported health, number of “bad” health days out of the previous 30 days, smoking, binge drinking, and birth weights. Some of the most credible studies come from the UK and compare workers whose wages increased in response to the new UK minimum wage with similar workers whose wages did not increase because their incomes were slightly above the threshold or because their firms did not increase wages to meet the threshold.⁹ Though these studies are informative about the relationship between higher earnings and health among low-wage workers, studies from other countries may not generalize to the US given differences in wage distributions, workforce characteristics, health system types (e.g., the single-payer National Health Service in the UK versus ESI coverage, the primary vehicle for coverage in the US), and the basis of means-testing eligibility for public insurance coverage and other safety net programs. Other high-quality study designs, usually from the US, compare workers in low-wage or low-skill jobs with a comparison group of workers in middle-to-high-wage or high-skill jobs.

There are four main conclusions about the effects of the minimum wage on health (Leigh and Du 2018; Leigh, Leigh, and Du 2019). First, increases in minimum wages are associated with decreases in specific behaviors and indicators of poor health. For example, a 10.0 percent increase in minimum

wages led to a 1.6 percent reduction in smoking prevalence among adult women (Horn, Maclean, and Strain 2017), a \$1 increase led to a 1.1 percent decrease in the prevalence of low birth weight (Wehby, Dave, and Kaestner 2019), and a \$1 increase led to a 16.1 percent reduction in absences from work due to illness among employed adults (Du and Leigh 2018).¹⁰ Second, some evidence suggests that increases in minimum wages are associated with increases in general overall health as measured by self-reported health, bad health days, and unmet medical needs combined. For example, several studies have found positive effects of minimum-wage increases on self-reported health and that such increases reduced workers' number of days absent from work because of illness (Leigh and Du 2018; Lenhart 2017; Reeves et al. 2017). Third, most studies, however, cannot say that minimum-wage increases significantly improve health outcomes with much certainty (i.e., they fail to reject the null hypothesis that minimum wages have no effects on most health outcomes). One reason for the numerous statistically insignificant findings and lack of consistent findings across studies could be conflicting findings on the effects of minimum-wage increases on unemployment and work hours. Another explanation is that higher earnings can positively or negatively affect health and health behaviors in various ways, as described earlier in this paper. Fourth, Leigh, Leigh, and Du (2019) did not find evidence that increases in minimum wages harmed health. In other words, in the worst-case scenario, minimum wage increases have no effect on health outcomes.

Three additional high-quality studies published since 2018 directly assess the effects of minimum-wage laws on health outcomes in the US. Applying a difference-in-differences design to a sample of children under age 17 in households with lower educational attainment from the 2003, 2007, and 2011–12 rounds of the National Survey of Children's Health,¹¹ Wehby and colleagues (2020) assessed the effects of minimum-wage increases on various child health outcomes, including parent-rated poor child health,¹² indicators for overweight and obesity based on percentiles of the body mass index distribution (for children ages 10 and above only), and the number of missed school days in the past 12 months due to illness or injury. Overall, the authors found that increases in the minimum wage during childhood are associated with a significant improvement in child health, mostly from birth to age 5. For example, a \$1 increase in the minimum wage in each of these five years is associated with an 8.7 percent increase in the probability of very good or excellent health, a 14 percent decrease in the three-question index measure of poor health, and a 15.6 percent decrease in missed school days for children between ages 6 and 12. This evidence is consistent with a cumulative effect of investments in child health undertaken during early life. Increases in the minimum wage during other periods of a child's life were found to be associated with improvements in health that were mostly small in magnitude and not statistically significant.

Dow and colleagues (2019) used Centers for Disease Control and Prevention Multiple Cause of Death data for 1999 to 2017 and difference-in-differences and event study approaches to estimate the effects of changes in a state's EITC and minimum wage on deaths due to drug overdose, suicide, and alcohol-related causes. Overall, the authors found that a 10 percent minimum-wage increase reduces nondrug suicides among adults with a high school degree or less education by 2.75 percent, and a 10 percent increase in the EITC reduces suicides by 3.0 percent. Women and young people with more

exposure to the policies had the largest reductions in suicides, especially in response to minimum-wage increases. Other causes of death were not affected by these policy changes.

Buszkiewicz, Hill, and Otten (2020) used data from the 2008–15 National Health Interview Surveys to examine the effects of state minimum-wage increases on adult health outcomes, including body mass index, obesity, hypertension diagnosis, diabetes diagnosis, self-reported health, and psychological distress. The authors examined the impact of the current and the two-year-lagged minimum wages on these health factors and used a triple-difference model that uses within-state respondents with some college or more education as comparisons with respondents with a high school degree or less education who are expected to be more affected by changes in the minimum wage. The authors found little evidence that minimum-wage increases affected these outcomes among adults ages 25 to 64.

One weakness of the existing literature is the lack of attention to how findings might differ across populations (e.g., race or ethnicity). For example, only two of the high-quality studies from Leigh, Leigh, and Du (2019)—Averett, Smith, and Wang (2017) and Andreyeva and Ukert (2018)—estimated the effects of minimum wages on health outcomes by race and ethnicity. Averett, Smith, and Wang (2017) found that a \$1 increase in the US minimum wage is associated with a 1.7 percentage-point reduction in reporting fair or poor health among white teenage women, with no positive health effects among the other race-sex groups. Using 1993–2015 data from the Behavioral Risk Factor Surveillance System, Andreyeva and Ukert (2018) found that increases in the minimum wage have an ambiguous effect on health and health behaviors. On the one hand, the authors found that minimum-wage increases adversely affect health behavior (e.g., by increasing the probability of being obese and decreasing daily fruit and vegetable intake) among adults who are white, older, or married. On the other hand, the authors found that increases in the minimum wage led to fewer days with health-related functional limitations, which was especially pronounced among adults who are nonwhite, middle aged, or married.

Two other high-quality papers published after the Leigh, Leigh, and Du (2019) review also investigate the effects of minimum-wage increases on health by race and ethnicity. Dow and colleagues (2019) found that state minimum-wage increases and state EITC expansions were effective in reducing deaths from drug overdoses, alcohol, and suicide among both non-Hispanic white adults and people of color. Buszkiewicz, Hill, and Otten (2020) found little association between state minimum-wage increases and health outcomes, although the authors' subgroup analysis indicated that increases in the minimum wage were associated with higher body mass index and obesity rates among people of color. The authors concluded that the mostly null results are not surprising because the relationship between income and health is mediated by several pathways (e.g., access to health care and health behaviors), and the incremental increase in the minimum wage might not be sufficient to change certain health outcomes. Although not explicitly assessed in their study, the authors suggested that the adverse effects of minimum-wage increases on obesity among people of color could be attributable to racial discrimination in hiring (e.g., losses of employment caused by the minimum wage disproportionately affecting people of color; Pager and Shepherd 2008).

Minimum Wage, Fringe Benefits, and Public Program Participation

Leigh, Leigh, and Du (2019) focused exclusively on studies that assessed the effects of minimum-wage increases on direct measures of health. However, another body of literature examines how minimum-wage increases affect fringe benefits and enrollment in public programs, which may affect health care access and affordability and health.

As previously discussed, economic theory predicts that minimum-wage increases might induce employers to pull back on nonwage benefits, including health insurance coverage. Dworsky and colleagues (2022) used 2005–16 CPS Annual Social and Economic Supplement data to assess whether minimum-wage increases were associated with changes in enrollment in ESI coverage for workers. The authors estimated that a \$1 increase in the minimum wage was associated with a reduction in ESI of about 0.99 percentage points among low-income workers and their dependents. Clemens, Kahn, and Meer (2018) similarly used 2011–16 American Community Survey data and found that increases in state-level minimum wages significantly lower the likelihood of having ESI for workers in low-wage occupations. Specifically, they found that a \$1 increase in the minimum wage lowers the probability of having ESI by 2 percentage points (4 percent) for very low-wage workers and by 1.2 percentage points (2.5 percent) for low-wage workers. The authors estimated the monetary value of the reduction in ESI coverage and concluded that among workers in very low-paying occupations who experience the greatest wage gains following minimum-wage increases, the decline in ESI offsets about 9 percent of the wage gains associated with the minimum-wage hike. Workers in low- and medium-paying jobs experience greater offsets (16 and 70 percent), primarily because workers in these occupations experience smaller wage gains from minimum-wage increases.

Using 1988–2005 CPS data, Marks (2011) considered differences between firms subjected and not subjected to nondiscrimination laws for self-insured firms that govern the provision of health insurance.¹³ The author found that increases in minimum wages are not associated with changes in ESI among self-insured firms subjected to nondiscrimination laws, whereas low-wage workers in firms not subjected to these laws face a disproportionate reduction in the availability and generosity of ESI after a minimum-wage increase. Simon and Kaestner (2004) assessed minimum-wage changes from 1979 to 2000 and found no association between minimum-wage changes and fringe benefit generosity for workers. Thus, though more recent studies demonstrate a clear negative relationship between minimum-wage increases and fringe benefits for low-income workers, studies of earlier expansions in the minimum wage are less conclusive. These differences in findings may be attributable to varying effects over time, differences in the magnitudes of minimum-wage increases, differences in methods applied by researchers, or other factors. Clearly, future research on this topic would provide an important contribution to the evidence base.

Increased income could also make minimum-wage earners ineligible for means-tested programs such as Medicaid, SNAP, and Temporary Assistance for Needy Families. Though small changes in minimum-wage policies are unlikely to have a major impact on eligibility for these programs, a more significant hike in the minimum wage to \$15 per hour could have more binding effects on means-tested programs. Some research suggests smaller increases in the minimum wage reduce receipt of public

benefits, but other studies have been less conclusive, with findings varying across methodologies, assumptions, and the contexts in which wage hikes take place (Acs et al. 2014; Page, Spetz, and Millar 2005; Reich and West 2015; Sabia and Nguyen 2015, 2018; West and Reich 2014). For example, Sabia and Nguyen (2015) found that federal and state minimum-wage increases from 1979 to 2013 had no measurable impact on enrollment in SNAP, Medicaid, Temporary Assistance for Needy Families, and WIC (Special Supplemental Nutrition Program for Women, Infants, and Children) among working-age adults. In contrast, exploiting state- and federal-level increases in the minimum wage between 1990 and 2012, Reich and West (2015) found that a 10 percent minimum-wage increase reduced SNAP enrollment by between 2.4 and 3.2 percent and reduced program expenditures by 1.9 percent.

Recent studies have also predicted the likely effects of a \$15 minimum wage on Medicaid. The Congressional Budget Office estimated that the Raise the Wage Act of 2021, which would raise the federal minimum wage to \$15 per hour by June 2025, would lift 0.9 million people's incomes above the federal poverty level. However, it would also result in higher prices for goods and services and would reduce employment by 1.4 million workers. Consequently, Medicaid and Children's Health Insurance Program spending would increase because the effects of increases in the price of health care services and increases in enrollment in both programs among people who become unemployed would outweigh the effects of decreases in enrollment among people with higher incomes (CBO 2019). The Congressional Budget Office also found that spending on SNAP and child nutrition programs would decline because increases in income for low-income households would reduce both the number of beneficiaries and their average benefit amounts.¹⁴ Gangopadhyaya and colleagues (2019) assessed the likely impact on Medicaid eligibility and enrollment of New Jersey's minimum-wage increase from \$8.85 in 2019 to \$15 by 2024. The authors estimated that 24,000 Medicaid-enrolled workers could lose income eligibility under a \$15 minimum wage, which represents less than 5 percent of the estimated average annual number of nonelderly, nondisabled adults enrolled in the state's Medicaid program. The authors also found that all workers losing Medicaid eligibility would be in the income range to qualify for subsidized coverage in the ACA Marketplace.

Conclusion

Though the effects of the minimum wage on health have been extensively studied over several decades, most of these studies focus on changes in the minimum wage that are incremental and smaller than those that have been implemented or considered in recent years. Generally, it is difficult to detect the effects of small changes in the minimum wage on health and, indeed, much of the literature has failed to find statistically significant effects of the minimum wage on the health of workers and their families. Still, several recent and high-quality studies suggest minimum-wage increases could improve measures of child well-being and have a meaningful impact on reducing rates of mortality related to drugs or suicide. Recently proposed, and in many states passed, legislation will result in unprecedented increases in minimum wages that will likely have strong, measurable economic consequences. Consequently, we anticipate that these recent, large increases in minimum wages will raise the potential for larger and more meaningful economic and health impacts on low-wage workers and their families.

Notes

- ¹ Jacob Pramuk, “\$15 Minimum Wage Not Allowed in Biden’s COVID Relief Bill, Senate Official Says,” CNBC, February 25, 2021, <https://www.cnbc.com/2021/02/25/15-minimum-wage-decision-biden-covid-relief-bill.html>.
- ² See “State Minimum Wages,” National Conference of State Legislatures, accessed June 24, 2022, <https://www.ncsl.org/research/labor-and-employment/state-minimum-wage-chart.aspx>. Delaware enacted legislation to raise the minimum wage to \$15 in June 2021. See Randall Chase, “Delaware Lawmakers Give Final Approval to \$15 Minimum Wage,” AP News, June 17, 2021, <https://apnews.com/article/delaware-minimum-wage-government-and-politics-business-69517f1137156ecc5a1233cd698f665a>.
- ³ We identify respondents working for wages fewer than 50 cents above the legislated minimum wage as earning approximately the minimum wage.
- ⁴ Our estimates match official statistics reported by the US Bureau of Labor Statistics using the same underlying data. See BLS (2020).
- ⁵ The Congressional Budget Office estimated that a \$15 minimum wage would increase wages for approximately 17 million workers and for an additional 10 million workers whose wages would have otherwise been slightly above the \$15 rate in 2025 (CBO 2021). It also estimated that about 1.4 million workers would lose their jobs because of the minimum-wage increase. Our estimates of the number of workers affected by similar changes in the minimum wage are considerably higher than the Congressional Budget Office’s estimates for two primary reasons. First, we do not incorporate labor market responses from employers that affect the demand for work. Second, we evaluate these changes as having occurred in 2019, when prevailing wages were lower than predicted 2025 rates, meaning the same nominal increase in the minimum wage would affect a larger segment of the population.

In practice, some workers who currently earn \$15 or more per hour could be affected by this minimum-wage increase if their wages increase in response.
- ⁶ In fact, strong empirical evidence shows that increases in the minimum wage increase worker earnings (Allegretto et al. 2017; Card and Krueger 1994; Cengiz et al. 2019; Dube, Lester, and Reich 2010).
- ⁷ Rothstein and Zipperer (2020) reviewed economic theory underpinning interactions between the minimum wage and the EITC.
- ⁸ Leigh, Leigh, and Du (2018) had strict inclusion and exclusion criteria based on the quality of each study’s methodological approach and use of direct health outcome measures. See table 1 in Leigh, Leigh, and Du (2018) for additional detail.
- ⁹ Lenhart (2017) found that the introduction of the UK national minimum wage significantly improved self-reported health status and reduced the presence of health conditions. Other studies have found mixed results on the effects of the UK national minimum wage on mental health (Kronenberg, Jacob, and Zucchelli 2017; Reeves et al. 2017).
- ¹⁰ Several estimates in this section are reported as the effect of increasing the minimum wage by \$1. To help contextualize the magnitude of such a policy change, we estimate that a \$1 increase in the minimum wage in all states equals approximately an 11 percent increase in the average minimum wage in 2019.
- ¹¹ The highest level of education attained by anyone in the household is high school.
- ¹² This measure is set to 1 if the respondent replies “yes” to any of the following three questions: Does the child need medication because of a medical or health condition? Does the child use more medical care than other children of the same age? Is the child limited in ability to do things because of a medical or health condition?
- ¹³ As stated in Marks (2011), “Nondiscrimination rules in section 105 of the Internal Revenue Tax Code state that in order to receive tax-exempt status for the health insurance plans of highly compensated employees, self-insured firms must offer health insurance plans that do not discriminate in favor of highly compensated

employees (Collins 1999). As Gruber (1998) notes, for firms covered under the nondiscrimination rules ‘it is impossible to selectively offer insurance to only some employees, without making it a workplace wide option.’”

¹⁴ This effect outweighs the increases in enrollment resulting from reductions in employment and increases in the price indexes used to calculate benefit amounts.

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