

Evaluating Differences in Production and Experimental Estimates of Health Insurance Coverage and Disability in the 2020 American Community Survey

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Abstract

In July 2021, as a result of disruptions to data collection stemming from the COVID-19 pandemic, the Census Bureau announced that the standard 2020 1-year American Community Survey (ACS) data products would not be released. Although the U.S. Census Bureau adapted data collection in response to the pandemic throughout 2020, the interviewed households in the 2020 ACS were more educated, had higher incomes, and were more likely to reside in single-family housing units than in previous years (Asiala, et al. 2021; Rothbaum, et al. 2021). This paper examines differences in the ACS 1-year estimates of health insurance coverage and disability using standard production method weighting (PMW) and the experimental methods using entropy balanced weighting (EBW) described in Rothbaum, et al. (2021). It also compares changes in ACS 1-Year estimates in health coverage and disability between 2019 and 2020 under both weighting regimes. Finally, it explores how changes in the distribution of population characteristics across weighting regimes may have impacted observed differences in production and experimental ACS estimates of health coverage and disability.

INTRODUCTION

In July 2021, as a result of disruptions to data collection stemming from the COVID-19 pandemic, the U.S. Census Bureau announced that the standard 2020 1-year American Community Survey (ACS) data products would not be released. Although the U.S. Census Bureau adapted data collection to the changing circumstances of the pandemic throughout 2020, the interviewed households in the 2020 ACS were more educated, had higher incomes, and were more likely to reside in single-family housing units than in previous years. While the ACS weighting includes adjustments for non-response bias, these adjustments were not adequate to mitigate the challenges of data collection, the decline in overall response rates, and differential non-response during the pandemic (Asiala, et al. 2021; Rothbaum, et al. 2021).¹ Thus, even after standard weighting corrections, nonresponse bias affected many estimates, including ACS estimates of health insurance coverage, in 2020.

Challenges to data collection for household surveys during the COVID pandemic and the effects of those challenges on estimates of health insurance coverage were not unique to the ACS. COVID-related changes to data collection affected collection of the 2020 Current Population

¹ More information related to the U.S. Census Bureau's adaptations to 2020 ACS data collection during the COVID-19 pandemic, and the effects of data collection on 2020 ACS data quality, is available in Asiala, M. et al. (2021).

Survey Annual Social and Economic Supplement (fielded between February and April of 2020, just as the pandemic shutdowns commenced), and the National Health Interview Survey, impacting sources often used to benchmark the ACS (Berchick, Mykyta and Stern 2020; Dahlhamer, Bramlett, Maitland and Blumberg 2021).

An analytical report highlighting how 2020 ACS data collection impaired the quality of the 1-year estimates was released in October 2021 (Asiala et al. 2021). In November 2021, a technical report was released that reflected U.S. Census Bureau efforts to mitigate pandemic-related disruptions to data collection and modify weighting to adjust for data collection adaptations throughout 2020 and address known sources of non-response bias (Rothbaum, et al. 2021).²

In this paper, we examine the ACS 1-year estimates of health insurance coverage and disability using standard production method weighting (PMW) and the experimental methods using entropy balanced weighting (EBW) described in the technical report. In addition, we compare changes in ACS 1-Year estimates in health coverage and disability between 2019 and 2020 under both weighting regimes.³ Further, we discuss how changes in the distribution of population characteristics across weighting regimes may have impacted observed differences in PMW and EBW ACS estimates of health coverage and disability.

BACKGROUND

Changes in health insurance coverage over time are shaped by a variety of factors, including demographic change, such as population aging, shifts in economic conditions, and policy changes that impact access to care. In the U.S., the COVID-19 pandemic may have affected demographic composition through increased mortality, as well as mortality differences between groups. Further, the shutdowns associated with the COVID-19 pandemic resulted in an economic recession and attendant job losses (Ansell and Mullins 2021).⁴ At the same time, the passage of stimulus policies may have assisted families and bolstered wellbeing during the pandemic.

Taken together, the changes brought about by COVID-19 likely impacted health insurance coverage. Job losses associated with the pandemic may have led to a decline in employment-based coverage. Yet, the drop in coverage might have been tempered if employment loss was concentrated in jobs and industries less likely to provide health coverage. Even with layoffs,

² It should be noted that the estimates released with the Rothbaum, et al. (2021) Technical Paper are considered experimental. Although the experimental weights adjust for some of the non-response bias for certain topics, potential data quality issues remain for some topics (Rothbaum, et al. 2021).

³ The U.S. Census Bureau reviewed this working paper for unauthorized disclosure of confidential information and approved the disclosure avoidance practices applied to this release: CBDRB-FY22-POP001-0087.

⁴ The National Bureau of Economic Research dated the COVID-19 related recession from February 2020 to April 2020. Additional information is available at <https://www.nber.org/research/data/us-business-cycle-expansions-and-contractions>.

some employers that did offer health benefits may have continued to cover employees, and COBRA policies may have buttressed workers against loss of coverage. Despite this, between 2018 and 2020, the percentage of people with employment-based coverage dropped an estimated 0.6 percentage points to 61.6 percent according to the Current Population Survey Annual Social and Economic Supplement (CPS ASEC) (Keisler-Starkey and Bunch 2021). In terms of public coverage, the Center for Medicaid and Medicare Services (CMS) documented an increase in Medicaid and Children’s Health Insurance Program (CHIP) enrollment throughout 2020 suggesting that the proportion of people with public coverage likely increased during the pandemic (Center for Medicaid and Medicare Services 2021).⁵ At the same time, concerns about potential medical and hospitalization costs due to the pandemic might have induced people to purchase coverage directly or through the Marketplace. As such, it is hard to predict how the COVID-19 pandemic affected overall health coverage rates. Any change in the overall coverage rate (or the uninsured rate) would depend on the extent to which changes in private coverage (such as employment-based or direct purchase coverage, including Marketplace coverage) offset any increase in public coverage (such as Medicaid).

Changes in disability prevalence over time may reflect population aging, as disability rates increase with age. Further, increased diagnosis of disabilities as well as growing public awareness have likely resulted in increased self-reporting of disability over time. Yet, the COVID-19 pandemic may also have impacted recent disability estimates. First, the effects of long COVID include fatigue, cognitive difficulties, muscle weakness that may limit mobility, and organ damage, potentially increasing reports of disability (Centers for Disease Control and Prevention 2021). Yet, little is known about the prevalence of long COVID, particularly for the more severe effects which may be more likely to impair daily activity. Further, the risk of COVID mortality may be positively associated with disability, which may result in lower disability prevalence due to differential mortality (Gleason, et al. 2021). Thus, it is also hard to predict how the COVID-19 pandemic impacted disability prevalence between 2019 and 2020.

Adjusting for survey non-response with the PMW and EBW

In a typical survey year, ACS production weighting methods adjust weights to match U.S. population estimates for age, race and Hispanic origin, and sex, and further adjust for differences in response rates by Census tract and building type. These adjustments mitigate nonresponse bias based on these characteristics, and ensure the weighted sample is representative of the U.S. population.

As noted above, the impact of COVID-19 on ACS data collection in 2020 is documented in the analytic paper *An Assessment of the COVID-19 Pandemic’s Impact on the 2020 1-Year ACS Data* (Asiala, et al. 2021). Challenges arising from changes to data collection during the COVID-19

⁵ Additional information about trends in Medicaid and CHIP coverage are available in the Center for Medicaid and Medicare Services, [Medicaid & CHIP and the COVID-19 Public Health Emergency: Preliminary Medicaid and CHIP Data Snapshot - Services through May 31, 2021](#).

pandemic resulted in lower overall response rates, and differential nonresponse to the 2020 ACS. Specifically, the interviewed households in the 2020 ACS were more educated, had higher incomes, and were more likely to live in single-family housing units than in previous years (Asiala, et al. 2021). The adjustments used in PMW did not fully mitigate the unique differential nonresponse to the 2020 ACS during pandemic data collection, and impacted health insurance estimates in the 2020 1-Year production ACS.

To adjust for differential nonresponse, a set of experimental weights was created for the 2020 ACS. The details of the methodology used to create these weights and their effects on select ACS 1-year estimates are reported in the technical paper *Addressing Nonresponse Bias in the American Community Survey During the Pandemic Using Administrative Data* (Rothbaum, et al. 2021). As described in Rothbaum, et al. (2021), researchers from the Census Bureau leveraged data on household income, employment, program participation, and household structure from administrative records from the IRS, SSA, and other sources, as well as third-party and decennial census data for both respondent and nonrespondent households to construct EBW weights incorporating adjustments that accounted for this differential non-response. As a result of these adjustments, some sample characteristics (including some characteristics associated with health insurance coverage and disability) differed across weighting methods (Appendix Table 2).

DATA AND METHODS

In this paper, we use the 2019 and 2020 ACS production method (PMW) and experimental (EBW) 1-year estimates to compare estimates of change in health insurance coverage by type, as well as change in reported disability. This analysis further examines estimates in health insurance coverage using the different weighting regimes by broad age category. Because EBWs are not applied to people in group quarters, the universe for this analysis includes all people in households. The universe for previously published ACS 1-year estimates is the civilian noninstitutionalized population (CNI), which includes people in noninstitutional group quarters.

Changes in estimates between 2019 and 2020 using EBW are first compared with changes estimated using PMW. Further, we explore how weighting affects sample characteristics and briefly discuss how variations in estimated characteristics may contribute to observed divergences in health coverage and disability estimates across weighting regimes. Wald t-tests are used to test for statistically significant differences.

RESULTS

Health Insurance

Comparing Changes in Production and Experimental ACS Estimates of Health Insurance Coverage by Type between 2019 and 2020

Table 1 reports 2019 and 2020 estimates for health insurance coverage by type using both PMW and EBW methods. As discussed above, the EBW method was designed to address the additional challenges raised by differential non-response in the 2020 ACS resulting from data collection disruptions due to the COVID-19 pandemic.

Comparing annual change in estimates derived using PMW results in conclusions that are inconsistent with external benchmarks and observed changes following previous recessions. For example, Table 1 shows that the uninsured rate in 2020 using PMW was lower than the rate in 2019 by 0.6 percentage points (Column K). This difference in the uninsured rate is larger than the annual decreases between 2016 and 2019, which ranged from 0.1 to 0.3 percentage points (See Appendix Table 1).⁶ In contrast to PMW, the uninsured rate using the experimental weights (EBW) was 0.2 percentage points higher in 2020 than in 2019 (8.8 percent) (Column E of Table 1).

Examining subtype of coverage using PMW in Table 1, the difference in coverage between 2019 and 2020 appears to be driven by an increase in private health insurance coverage, and specifically employer-sponsored coverage.⁷ The 2020 PMW estimate for employer-sponsored coverage is 56.3 percent, 1.0 percentage point higher than the 2019 estimate.

Given the economic recession in the wake of the COVID-19 pandemic, it is unlikely that employer-sponsored coverage was so much higher in 2020 when compared with 2019. Indeed, although employment-based coverage has been increasing annually since 2013, the year-to-year increases have been about 0.2 to 0.3 percentage points. Notably, during and following the last recession, employment-based coverage *declined* by 2.2 percentage points between 2008 and 2009, and by 1.7 percentage points between 2009 and 2010.⁸ Thus, a decline in employer-

⁶ More information about ACS 1-year health insurance estimates for the civilian noninstitutionalized population is available from Health Insurance Historical Tables -HII Series (census.gov), Table HIC-4_ACS. *Health Insurance Coverage Status and Type of Coverage by State, 2008-2019*.

⁷ Strikingly, the increases in private and employment-based coverage between 2019 and 2020 reflected in the 2020 ACS using production weighting methods was similar in magnitude to the increases in private and employment-based coverage between 2018 and 2019 reported in the 2020 CPS ASEC. Like the 2020 ACS, data collection for the 2020 CPS ASEC (which is fielded between February and April of each year) was impacted by the COVID-19 pandemic. As a result, the 2020 CPS ASEC suffered from non-response bias, with respondents being more likely to be white, non-Hispanic, with higher educational attainment, and higher incomes than in prior years. More information on the impact of COVID-19 on the 2020 CPS ASEC is available in Berchick, Mykyta, and Stern (2020), and Rothbaum and Bee (2020).

⁸ The National Bureau of Economic Research dated the previous recession (“the Great Recession”) from December 2007 to June 2009. Additional information is available at <https://www.nber.org/research/data/us-business-cycle-expansions-and-contractions>.

sponsored coverage would likely be expected during the COVID recession, rather than the large magnitude increase using PMW methods.

In contrast to these results, EBW estimates of private coverage declined by 0.6 percentage points, driven by a drop of employment-based coverage of 0.8 percentage points to 55.4 percent. Although this is a sizable drop in employment-based coverage, it is smaller in magnitude than the annual declines in production ACS estimates during the Great Recession in 2008-2009 and 2009-2010.

Using the PMW, the percentage of people with Medicaid coverage was 18.9 percent, which would suggest that Medicaid coverage fell 0.8 percentage points between 2019 and 2020.

Typically, enrollment in Medicaid and other means-tested programs *rise* during economic downturns, such as the COVID recession (Benitez et al., 2020; Buchmueller et al., 2019). Indeed, stimulus payments and unemployment insurance kept many families and individuals out of poverty in 2020 using the supplemental poverty measure (Fox and Burns 2021). Therefore, in light of the COVID-19 pandemic and its associated economic shock in 2020, one would also expect an increase in Medicaid enrollment in 2020. Indeed, Medicaid and CHIP enrollment, as reported by the CMS, increased from about 70.7 million to about 80.5 million people between February 2020 and January 2021, an increase of about 10 million people (Center on Medicaid and Medicare Services 2021). Yet, 2020 PMW estimates suggest the number of people with Medicaid coverage *declined* by 2.4 million (0.8 percentage points). Therefore, the 2020 PMW estimates are not consistent with CMS administrative records.

In contrast to estimates reported for PMW, the percentage of people with Medicaid *increased* by 0.2 percentage points to 19.8 percent using EBW, consistent with the documented increase in Medicaid enrollment in 2020.

Figure 1 highlights the change in health insurance coverage by type between 2019 and 2020 using the PMW and the EBW. As seen in Figure 1, the high-level estimates (the uninsured rate and the percentage of people with any health coverage) move in opposite directions across weighting methods, with the percentage uninsured appearing to decline using PMW and increasing using EBW. Among the subtypes of coverage, the 2019 to 2020 change in employment-based coverage and Medicaid also move in opposite directions driving the differences in overall coverage changes.

Examining Production and Experimental ACS Estimates of Health Insurance Coverage in 2020

We can also examine the divergence in 2020 ACS health insurance coverage estimates derived using both weighting methods. Column M of Table 1 reports the magnitude of these differences.

At 8.8 percent, the estimated uninsured rate using the EBW was 0.2 percentage points higher than the estimated uninsured rate using the PMW. However, there were larger differences in estimates of both private and public coverage between the two weighting methods. For

example, private coverage was 0.8 percentage points lower, and public coverage was 0.8 percentage points higher using EBW compared with PMW.

Health insurance status is associated with several individual and household characteristics. Due to differences in the weighting strategies (PMW and EBW), sample characteristics differed across methods. Appendix Table 2 shows selected weighted characteristics for the 2019 and 2020 ACS under both weighting regimes. Therefore, in order to understand the differences between the PMW estimates and EBW estimates of health insurance coverage, we examine differences in sample characteristics associated with health coverage under both weighting regimes.

The 0.8 percentage point divergence in private coverage between the two methods was primarily driven by differences in estimates of employment-based coverage. For example, at 55.4 percent using EBW, employment-based coverage was 1.0 percentage point lower than the PMW estimate.

For many working-age adults, health coverage is related to work status. Although the percentage of employed people declined under both the EBW and PMW weighting regimes between 2019 and 2020 by 2.6 percentage points and 1.9 percentage points respectively, the EBW estimate of the percentage of employed people was 0.6 percentage points lower (59.4 percent) relative to the PMW estimate (60.0 percent). The lower proportion of employed people using EBW methods may have contributed to lower estimates of employment-based coverage compared with the PMW. Strikingly, although the percentage of employed persons appeared to *decline* between 2019 and 2020 using the PMW weighting methods, the estimated percentage of people covered by employment-based coverage appeared to *increase* by 1.0 percentage points (Table 1).

Marital status is also associated with health coverage as people may be covered as a dependent on their spouse's plan. Differences in estimates of marital status across weighting regimes may have contributed to observed differences in estimates of health coverage, particularly the 0.8 percentage point difference in private coverage. Indeed, the percentage of adults aged 19 and older who were married was 0.6 percentage points lower using EBW compared with the PMW, which is more consistent with lower rates of private coverage among adults using EBW (see Table 2).

The difference in Medicaid estimates using the production weights and experimental weights was quite sizable at 0.9 percentage points, suggesting that differences in estimates of Medicaid coverage drove the difference in public coverage rates between the weighting methods.

Family resources may determine the ability to afford private health insurance, and families below certain income-to-poverty ratios may qualify for public health insurance options such as

Medicaid.⁹ Based on family IPR, the weighted population was less economically advantaged using the EBW than they were under the PMW method. For example, as seen in Appendix Table 2, the estimated percentage of people with family incomes below poverty was 0.6 percentage points higher under the EBW method (11.7 percent) compared with the PMW (11.2 percent). Similarly, the percentage of people with family incomes between 100 and 399% of poverty was 0.8 percentage points higher using EBW weights than using PMW weights (45.7 percent v. 44.9 percent). Although the percentage of people in poverty was lower in 2020 than in 2019 under both weighting regimes, the magnitude of the decline was larger using the PMW than it was under the EBW method (1.0 percentage points v. 0.2 percentage points). Using PMW, the percentage of people in the 100 to 399% of poverty group also seemed to decline by 1.3 percentage points between 2019 and 2020, while there was no statistically significant change in this group using EBW. The differences by IPR group using the different weighting regimes may contribute to the higher estimates of public coverage (0.8 percentage points) and Medicaid coverage (0.9 percentage points) using EBW methods.

Comparing Production and Experimental ACS Estimates of Health Insurance Coverage by Age Group

Age is associated with the likelihood of having health insurance coverage. Older adults (those aged 65 and older) and children (those under the age of 19) are more likely to have health insurance coverage than those aged 19 to 64, in part because their age makes them eligible for certain public health insurance programs. Medicare provides health coverage benefits for most adults aged 65 and older. Children under the age of 19 may qualify for coverage through Medicaid or the Children's Health Insurance Program (CHIP). Table 2 and Figure 2 examine estimates of the uninsured rate, and private and public coverage rates, by broad age group.

Notably, as shown in Appendix Table 2, there was no difference in the weighted distribution by broad age group under the two weighting methods. Both the production and experimental weighting procedures account for age and geography to ensure national representativeness on these characteristics. Thus, any differences in health coverage by age group under the different weighting regimes reflect differences in other individual and household characteristics.

As shown in Table 2, using PMW, the uninsured rate would seem to fall among children under 19 and working-age adults aged 19 to 64 between 2019 and 2020 by 0.3 percentage points (to 5.4 percent) and 0.8 percentage points (to 12.1 percent) respectively, consistent with the overall decline in the uninsured rate under the PMW weighting method.¹⁰ In contrast, the

⁹ The income-to-poverty ratio (IPR) is calculated as the ratio of a family's income to a poverty threshold based on the age of the family head and family size (multiplied by 100). If the ratio is less than 100%, the family is defined as in poverty.

¹⁰ There was no significant change in the uninsured rate among those aged 65 and older between 2019 and 2020 using PMW.

uninsured rate seemed to increase among all broad age groups using the EBW weighting method (Table 2 and Figure 2).

PMW estimates of private coverage rates appeared to increase for children under 19 between 2019 and 2020. Specifically, the percentage of children under 19 with private coverage was an estimated 2.4 percentage points higher in 2020 (62.4 percent). This would have represented the largest increase in private coverage for children since the implementation of the Patient Protection and Affordable Care Act (ACA) in 2014.¹¹ EBW estimates of private coverage also increased for children under 19 between 2019 and 2020, but by a much smaller magnitude (0.2 percentage points). Notably, although both PMW and EBW estimates indicated an increase in private coverage among children under 19 during the pandemic and its associated recession, private coverage among children under 19 *declined* during the Great Recession, by 2.6 percentage points between 2008 and 2009 and by 2.0 percentage points between 2009 and 2010.

In 2020, an estimated 74.4 percent of working-age adults (aged 19 to 64) held private coverage using PMW, which would suggest an increase of large magnitude -- 1.4 percentage points. Although the pandemic might have induced adults to access coverage under the ACA, the estimated change in private coverage using PMW methods was largely driven by employment-based coverage among adults aged 19 to 64. For example, the percentage of adults aged 19 to 64 with direct purchase coverage seemed to increase by 0.5 percentage points (to 11.1 percent) compared with a 1.2 percentage point increase in employment-based coverage (to 64.2 percent) in 2020 using PMW.

In contrast to results using PMW, however, EBW estimates of private coverage for adults *declined* between 2019 and 2020. The percentage of working-age adults with private coverage fell by 0.8 percentage points to 73.5 percent, driven by a 0.9 percentage point decrease (to 62.9 percent) in employment-based coverage among this group. Although there appeared to be no significant change in PMW estimates of the percentage of adults aged 65 and older with private coverage, EBW estimates of private coverage among adults 65 and over seemed to decrease by 1.1 percentage points to 58.3 percent between 2019 and 2020.

In terms of public coverage, the percentage of people in all broad age groups with public health insurance fell between 2019 and 2020 using PMW (Table 2). In contrast, and consistent with CMS reports of a rise in Medicaid and CHIP enrollment in 2020, EBW estimates of public coverage increased 0.5 percentage points for both children under 19 (to 38.1 percent) and working-age adults (to 17.9 percent). However, the percentage of people 65 and over with public coverage decreased by 0.2 percentage points to 96.0 percent using experimental weights.

¹¹ Annual change in private coverage rates for children ranged from 0.3 to 0.5 percentage points during this period under the PMW method. There was no significant change in the percentage of children with private coverage between 2016-2017 and between 2017-2018.

We can also examine differences in 2020 ACS estimates using the production and experimental weights. Although there were no significant differences in production and experimental estimates of the uninsured rate among children under 19 and people 65 and over, the experimental uninsured rate for adults aged 19 to 64 was 0.3 percentage points higher than the production estimate. In terms of private coverage in 2020, experimental estimates were lower than production estimates for both children under 19 and adults aged 19 to 64, but there was no statistically significant difference in estimates of private coverage rates among those 65 and over. For all age groups, experimental estimates of public coverage rates were higher than production estimates of public coverage.

Comparing Production and Experimental ACS Estimates of the Uninsured Rate by State

Health insurance coverage rates varied across states, ranging from 3.0 percent in Massachusetts to 18.4 percent in Texas in 2019. While differences in states' age distribution and economic conditions affect coverage, some of this variation also reflects differences in policy at the state level. For example, the ACA provided the option for states to expand Medicaid eligibility to people whose income-to-poverty ratio fell under a particular threshold. As of January 1, 2020, 35 states and the District of Columbia had expanded Medicaid eligibility ("expansion states"); 15 states had not expanded Medicaid eligibility ("nonexpansion states"). The uninsured rate varied by state Medicaid expansion status, with nonexpansion states typically having higher uninsured rates than expansion states (Keisler-Starkey and Bunch 2021).

Between 2019 and 2020, state policies and data collection adaptations due to the COVID-19 pandemic also likely affected 2020 ACS 1-year state estimates of health coverage. Even with the data collection adaptations described in the analytic report released in October 2021, variation in state COVID restrictions such as the timing and length of shutdowns or stay-at-home orders may have had further impacted data collection and/or nonresponse differentially across states. For example, response rates across states in 2020 varied more than in 2019, ranging from 63.1 percent to 85.2 percent in 2020 compared with 75.4 percent to 92.0 percent in 2019. More than 30 states had response rates below 75 percent in 2020. Within-state differences in response rates between 2019 to 2020 varied between 2.6 percentage points to 20.1 percentage points.¹² Therefore, differences in state level health coverage estimates, as well as changes in state coverage rates between 2019 and 2020, suggest that estimates from the 2020 ACS be interpreted with caution.

Table 3 reports estimates by state of the percentage of people uninsured in 2019 and 2020 using PMW and EBW weighting methods.

¹² Additional information on the ACS sample size and quality measures is available at <https://www.census.gov/acs/www/methodology/sample-size-and-data-quality/>.

The PMW state-level estimates of the percentage uninsured would suggest that 26 states had lower uninsured rates in 2020 compared with 2019; in one state (Oklahoma) the uninsured rate was higher in 2020 than in 2019. In contrast, the EBW estimates suggest that 14 states had lower uninsured rates and 25 states had higher uninsured rates in 2020 compared with 2019.

Notably, 9 of the 26 states that had exhibited declines in the uninsured rate between 2019 and 2020 using PMW methods also saw the EBW uninsured rate decline but by a smaller magnitude.¹³ In addition, 8 states with lower uninsured rates in 2020 relative to 2019 using PMW over the period saw *increases* in their uninsured rate using EBW (Florida, Georgia, Illinois, Minnesota, New Jersey, South Carolina, Texas, and Wisconsin). This is not surprising given that the national estimate of the uninsured rate was 0.6 percentage points lower in 2020 than in 2019 under the PMW but increased 0.2 percentage points using experimental EBW methods.

Only 12 states reported differences in uninsured rates in 2020 between the PMW and the EBW files. For all of these states, the EBW estimate of the uninsured rate was significantly larger than the PMW estimate of the uninsured rate, contributing to the 0.2 percentage point difference in the insured rate between files at the national level.

In summary, changes in the estimated state-level uninsured rate using the EBW and PMW largely reflect the changes revealed at the national level. More states experienced an increase in their estimated uninsured rate using the EBW weighting methods rather than large magnitude declines as seen under the PMW. Yet, caution is necessary in interpreting and using these estimates as these state-level PMW and EBW estimates reflect differences in response rates across states.

Disability

Table 4 shows estimates of overall disability and disability by type and age using PMW methods and experimental EBW methods in 2019 and 2020.

Comparing Production and Experimental ACS Estimates of Disability by Type

ACS estimates of disability prevalence increased among all people living in households by 0.7 percentage points to 12.6 percent between 2008 and 2019. Yet, this secular increase masks smaller annual increases or decreases in disability. In most years, the change in disability rates does not exceed 0.2 percentage points (Appendix Table 3).¹⁴

As shown in Table 4, using PMW methods, the percentage of people with disability (an estimated 12.6 percent in both years) did not significantly differ between 2019 and 2020. However, the percentage of people with a disability increased by 0.3 percentage points to 12.9

¹³ There was no statistical difference in changes in the uninsured rate between 2019 and 2020 using EMW or PMW methods for Idaho, Maine and Mississippi.

¹⁴ However, between 2012 and 2013, disability for all persons in households increased by 0.4 percentage points.

percent using EBW methods during the same period. In terms of disability subtype, as shown in Figure 3, the percentage of persons with hearing difficulty or with seeing difficulty appeared to increase between 2019 and 2020 using both weighting methods.¹⁵ In contrast, the percentage of those with self-care difficulty or independent living difficulty seemed to decline over the same period under both weighting regimes. Strikingly, although the percentage of people with cognitive difficulty or ambulatory difficulty each seemed to decrease between 2019 and 2020 using the PMW method, there was a slight increase in these subtypes using the EBW method (Figure 3).¹⁶

We can also examine the differences in 2020 ACS disability estimates using the PMW and the EBW methods. Table 4 reports the magnitude of these differences. As shown, the percentage of people with disability using EBW (12.9 percent) is 0.3 percentage points higher than that obtained using PMW (12.6 percent). Indeed, for the experimental file, with the exception of difficulty hearing and difficulty seeing, the EBW estimate for the other four disability subtypes was higher than the corresponding PMW estimate.¹⁷

As for health insurance, we examine the differences in the weighted sample distribution under the production and experimental weighting regimes in order to examine differences between the 2020 ACS disability estimates using the PMW and the EBW.

Although age is associated with disability, both weighting regimes adjust for age, and as a result there is no significant difference in the age distribution by broad age group across the weighting methods. Thus, it is harder to gauge the impact of data collection changes due to COVID-19 on disability estimates.

However, poverty status is also associated with disability. For example, people in a lower IPR group may be more likely to have conditions comorbid with disability status. Higher rates of diabetes among those with lower incomes may also lead to differences in vision difficulties or ambulatory difficulties as the disease advances (Beckles and Chou 2016; Gaskin, et al. 2014). Moreover, people in lower IPR groups may also forgo care that would prevent or treat disability as a result of perceived cost and may have fewer resources to access or pay for assistive devices which reduce difficulties with daily activities than their counterparts in a higher IPR group (Burgard and King 2014).

¹⁵ Note that the universe for seeing and hearing difficulty includes all people; the universe for self-care, cognitive and ambulatory difficulty includes people ages 5 and older; and the universe for independent living difficulty includes people ages 15 and older.

¹⁶ It should be noted that the standard errors of estimates in the experimental file are smaller than those for the production file. Although weighting adjustments for nonresponse may be expected to increase variance, if inputs used to adjust for nonresponse are correlated with a survey variable, standard errors may be reduced. The experimental weights used administrative records on income, household structure and program benefits to adjust for non-response. As a result, standard errors for disability are reduced under the experimental weighting method because income-to-poverty ratio and program receipt are correlated with disability. More information is available in Rothbaum, et al. (2021).

¹⁷ The percentage of people with hearing difficulty was lower in the experimental file than in the production file.

As noted above, the percentage of people with an IPR below poverty was 0.6 percentage points higher and the percentage of people with an IPR between 100 and 399% of poverty was 0.8 percentage points higher using EBW methods compared with the estimates derived under the PMW methodology (Appendix Table 2). This difference could contribute to the 0.3 percentage point difference in disability rate under the different weighting regimes. Strikingly, the proportion of those in poverty using both the PMW and EBW appeared to fall between 2019 and 2020, even while the EBW estimate of disability increased during this period. While there is some evidence that the social safety net alleviated the adverse impact of the pandemic on economic wellbeing (Fox and Burns 2021), this result may further reflect the impact of non-response bias on the IPR distribution under PMW methods.

CONCLUSION

This paper examined differences in 2020 ACS 1-year estimates of health insurance and disability, as well as changes in these estimates between 2019 and 2020, using PMW and experimental EBW weighting methods. It also highlighted how differences in estimates under the two weighting regimes may reflect differences in the distribution of characteristics under both methods. This paper does not attempt to measure the impact of COVID on health insurance coverage or disability prevalence.

In summary, for disability, the EBW estimates yielded higher rates of disability than the PMW estimates, perhaps because the EBW method adjusted for income and public program receipt, and these characteristics are associated with disability. There were fewer differences between the PMW and EBW in the direction of change for disability subtypes between 2019 and 2020.

Examining health insurance, the percentage of people with any coverage was lower using EBW compared with PMW as differences in employment-based coverage were only partially offset by differences in Medicaid coverage. Further, changes between years for most subtypes moved in opposite directions, with declines in private and increases in public coverage using EBW, and the reverse under the PMW weighting regime.

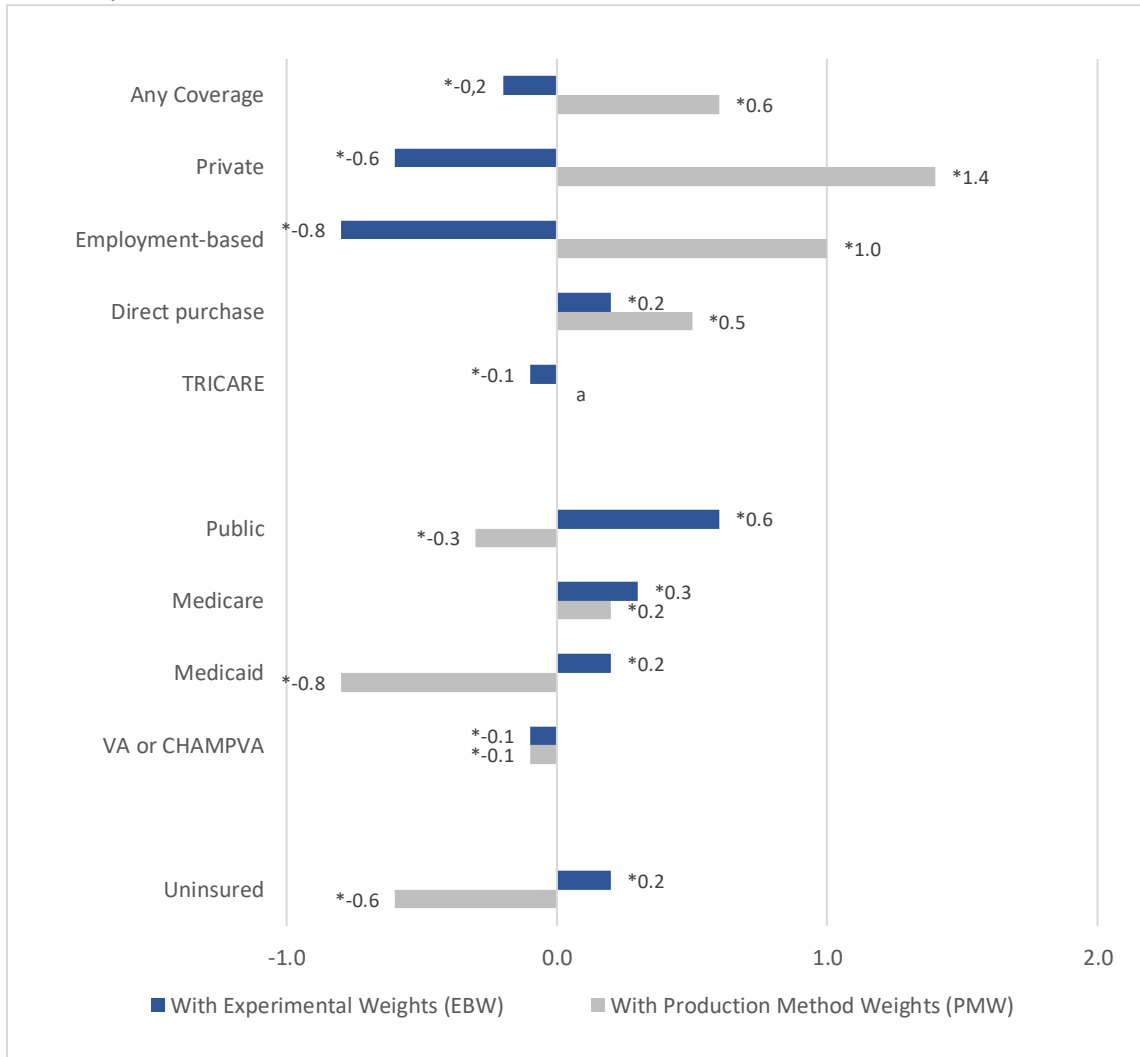
In general, although EBW estimates in health insurance coverage presented here appear to move in expected directions given the COVID-19 pandemic (e.g. a decline in employment-sponsored coverage coupled with an increase, as documented elsewhere, in Medicaid coverage between 2019 and 2020), neither set of estimates meets the U.S. Census Bureau's quality standards for full release. Data users should evaluate which set of estimates best suits their research purposes. However, researchers must recognize the impact of data collection on 2020 ACS 1-year PMW and EBW estimates and use caution in working with these estimates.

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Figure 1. Percentage point change in health insurance coverage by type and weighting method, 2019 to 2020



*The change in coverage type between 2019 and 2020 is significant at the 90% confidence level.

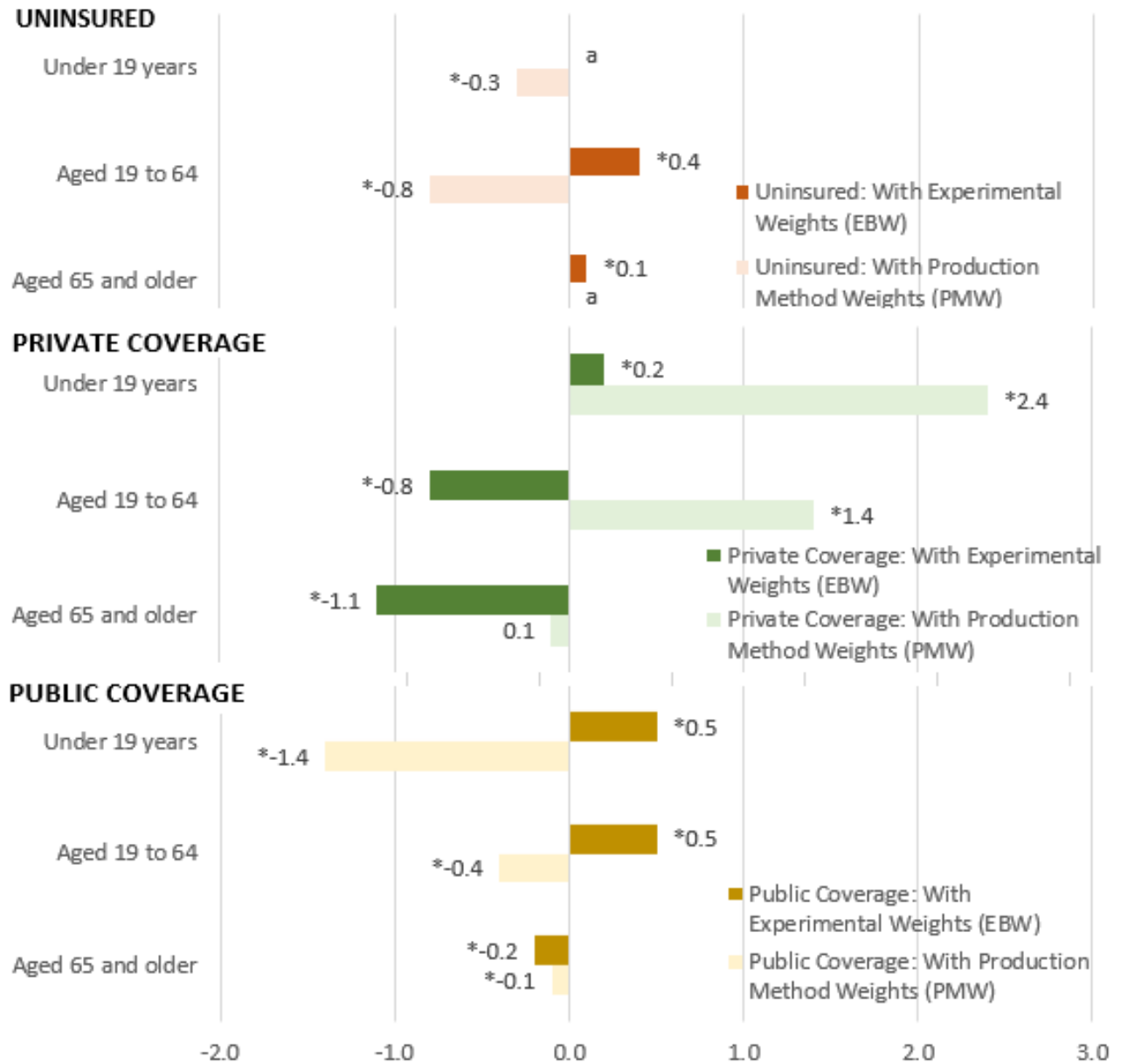
a The difference rounds to 0 and is not statistically significant.

b The difference rounds to 0, but is positive and statistically significant.

c The difference rounds to 0, but is negative and statistically significant.

Source: U.S. Census Bureau 2019 and 2020 ACS 1-Year Production and Experimental Estimates

Figure 2. Percentage point change in health insurance coverage by type, age group and weighting method, 2019 to 2020

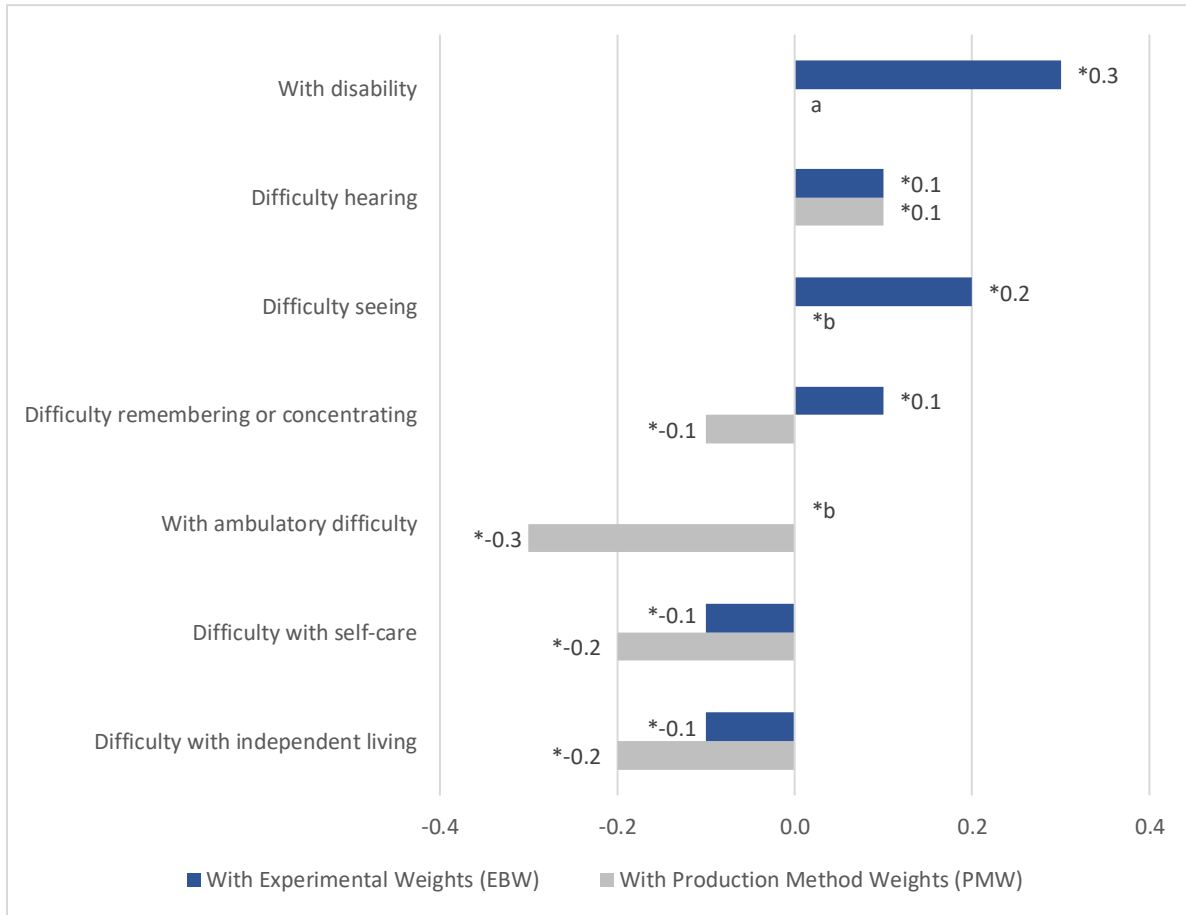


*The change in coverage type between 2019 and 2020 is significant at the 90% confidence level.

- a The difference rounds to 0 and is not statistically significant.
- b The difference rounds to 0, but is positive and statistically significant.
- c The difference rounds to 0, but is negative and statistically significant.

Source: U.S. Census Bureau 2019 and 2020 ACS 1-Year Production and Experimental Estimates

Figure 3. Percentage point change in reported disability status by type and weighting method, 2019 to 2020



*The change in coverage type between 2019 and 2020 is significant at the 90% confidence level.

- a The difference rounds to 0 and is not statistically significant.
- b The difference rounds to 0, but is positive and statistically significant.
- c The difference rounds to 0, but is negative and statistically significant.

Source: U.S. Census Bureau 2019 and 2020 ACS 1-Year Production and Experimental Estimates

Table 1. Percentage of People by Health Insurance Coverage and Type Using ACS Production and Experimental Weights, 2019 and 2020

Universe: All Persons in Households

(Numbers in thousands, standard errors in percentage points. For information on confidentiality protection, sampling error, nonsampling error, and definitions, refer to https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2020.pdf and https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2019.pdf)

	With Experimental Weights (EBW)						With Production Weights (PMW)						Difference within 2020— EBW less PMW	
	2020 (N=321,460)		2019 (N=320,155)		Difference 2020 less 2019		2020 (N=321,460)		2019 (N=320,155)		Difference 2020 less 2019			
	(A) %	(B) SE	(C) %	(D) SE	(E) %	(F) SE	(G) %	(H) SE	(I) %	(J) SE	(K) %	(L) SE	(M) %	(N) SE
Any Coverage	91.2	0.01	91.4	0.01	*-0.2	0.01	91.4	0.04	90.8	0.04	*0.6	0.06	*-0.2	0.04
Private ^{1, 2}	68.1	0.02	68.7	0.02	*-0.6	0.03	68.8	0.06	67.5	0.09	*1.4	0.10	*-0.8	0.06
Employment-based ¹	55.4	0.02	56.2	0.02	*-0.8	0.03	56.3	0.06	55.4	0.08	*1.0	0.10	*-1.0	0.06
Direct purchase ¹	13.8	0.01	13.6	0.01	*0.2	0.01	13.5	0.04	13.0	0.03	*0.5	0.05	*0.3	0.04
TRICARE ¹	3.0	z	3.1	z	*-0.1	0.01	3.0	0.02	3.0	0.02	a	0.03	a	0.02
Public ^{1, 3}	35.9	0.02	35.2	0.01	*0.6	0.02	35.1	0.04	35.4	0.04	*-0.3	0.06	*0.8	0.05
Medicare ¹	18.5	0.01	18.1	0.01	*0.3	0.01	18.3	0.01	18.1	0.01	*0.2	0.02	*0.1	0.02
Medicaid ¹	19.8	0.02	19.5	0.01	*0.2	0.02	18.9	0.04	19.7	0.05	*-0.8	0.06	*0.9	0.04
VA or CHAMPVA ^{1, 4}	2.2	z	2.4	z	*-0.1	z	2.2	0.01	2.3	0.01	*-0.1	0.02	*0.1	0.01
Uninsured^{1, 5}	8.8	0.01	8.6	0.01	*0.2	0.01	8.6	0.04	9.2	0.04	*-0.6	0.06	*0.2	0.04

*Changes between the estimates are statistically different from zero at the 90 percent confidence level.

z The standard error rounds to 0.

a The difference rounds to 0 and is not statistically significant.

b The difference rounds to 0, but is positive and statistically significant.

c The difference rounds to 0, but is negative and statistically significant.

¹ The estimates by type of coverage are not mutually exclusive; people can be covered by more than one type of health insurance during the year.

² Private health insurance includes coverage provided through an employer or union, coverage purchased directly, or TRICARE.

³ Public health insurance coverage includes Medicaid, Medicare, CHAMPVA (Civilian Health and Medical Program of the Department of Veterans Affairs), and care provided by the Department of Veterans Affairs and the military.

⁴ Includes CHAMPVA, as well as care provided by the Department of Veterans Affairs and the military.

⁵ In the ACS, individuals are considered uninsured if they are uninsured at the time of interview.

Source: U.S. Census Bureau 2019 and 2020 ACS 1-Year Production and Experimental Estimates

Table 2. Percentage of People by Health Insurance Status and Type of Coverage using ACS Production and Experimental Weights, by Age Group: 2019 and 2020

(Numbers in thousands, standard errors in percentage points. For information on confidentiality protection, sampling error, nonsampling error, and definitions, refer to https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2020.pdf and https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2019.pdf)

	With Experimental Weights (EBW)						With Production Weights (PMW)						Difference within 2020-EBW less PMW	
	2020 (N=321,460)		2019 (N=320,155)		Difference 2020 less 2019		2020 (N=321,460)		2019 (N=320,155)		Difference 2020 less 2019		%	SE
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE		
UNINSURED¹	8.8	0.01	8.6	0.01	*0.2	0.01	8.6	0.04	9.2	0.04	*-0.6	0.06	*0.2	0.04
Under age 19	5.4	0.01	5.4	0.01	z	0.01	5.4	0.06	5.7	0.05	*-0.3	0.07	a	0.06
Aged 19 to 64	12.4	0.01	12.0	0.01	*0.4	0.02	12.1	0.05	12.9	0.06	*-0.8	0.07	*0.3	0.05
Aged 65 and older	0.8	z	0.7	z	*0.1	0.01	0.8	0.02	0.8	0.02	a	0.02	a	0.02
PRIVATE COVERAGE²	68.1	0.02	68.7	0.02	*-0.6	0.03	68.8	0.06	67.5	0.09	*1.4	0.10	*-0.8	0.06
Under age 19	61.4	0.03	61.2	0.02	*0.2	0.04	62.4	0.09	60.0	0.14	*2.4	0.17	*-1.0	0.10
Aged 19 to 64	73.5	0.02	74.3	0.02	*-0.8	0.03	74.4	0.07	73.0	0.08	*1.4	0.10	*-1.0	0.07
Aged 65 and older	58.3	0.02	59.3	0.02	*-1.1	0.03	58.1	0.12	58.2	0.09	-0.1	0.15	0.2	0.12
PUBLIC COVERAGE³	35.9	0.02	35.2	0.01	*0.6	0.02	35.1	0.04	35.4	0.04	*-0.3	0.06	*0.8	0.05
Under age 19	38.1	0.03	37.7	0.02	*0.5	0.04	36.9	0.12	38.4	0.12	*-1.4	0.17	*1.2	0.12
Aged 19 to 64	17.9	0.02	17.4	0.01	*0.5	0.02	17.2	0.05	17.6	0.04	*-0.4	0.06	*0.7	0.05
Aged 65 and older	96.0	0.01	96.3	0.01	*-0.2	0.01	95.8	0.04	95.9	0.03	*-0.1	0.05	*0.2	0.04

*Changes between the estimates are statistically different from zero at the 90 percent confidence level.

z The standard error rounds to 0.

a The difference rounds to 0 and is not statistically significant.

b The difference rounds to 0, but is positive and statistically significant.

c The difference rounds to 0, but is negative and statistically significant.

¹ In the ACS, individuals are considered uninsured if they are uninsured at the time of interview.

² Private health insurance includes coverage provided through an employer or union, coverage purchased directly, or TRICARE.

³ Public health insurance coverage includes Medicaid, Medicare, CHAMPVA (Civilian Health and Medical Program of the Department of Veterans Affairs), and care provided by the Department of Veterans Affairs and the military.

Source: U.S. Census Bureau 2019 and 2020 ACS 1-Year Production and Experimental Estimates

Table 3. Percentage Uninsured by State Using ACS Production and Experimental Weights, 2019 and 2020

Universe: All Persons in Households

(Numbers in thousands, standard errors in percentage points. For information on confidentiality protection, sampling error, nonsampling error, and definitions, refer to https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2020.pdf and https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2019.pdf)

	Medicaid Expansion State? ¹	With Experimental Weights (EBW)					With Production Weights (PMW)					Difference within 2020 - EBW less PMW
		2020 (N=321,460)		2019 (N=320,155)		Difference 2020 less 2019	2020 (N=321,460)		2019 (N=320,155)		Difference 2020 less 2019	
		%	SE ¹	%	SE ¹		%	SE ¹	%	SE ¹		
United States	X	8.8	0.01	8.6	0.01	*0.2	8.6	0.04	9.2	0.04	*-0.6	*0.2
Alabama	N	9.6	0.08	9.2	0.05	*0.4	9.4	0.23	9.7	0.17	-0.3	0.2
Alaska	^B Y	11.3	0.21	12.6	0.18	*-1.2	11.4	0.59	12.0	0.50	-0.5	-0.1
Arizona	Y	11.1	0.06	10.6	0.05	*0.5	10.9	0.29	11.2	0.20	-0.4	0.2
Arkansas	Y	8.4	0.09	8.3	0.07	0.1	8.4	0.26	9.2	0.25	*-0.8	0.1
California	Y	7.1	0.02	7.2	0.01	*-0.1	6.9	0.08	7.7	0.07	*-0.8	0.1
Colorado	Y	8.4	0.07	7.5	0.04	*0.9	8.4	0.24	8.0	0.18	0.4	a
Connecticut	Y	4.6	0.06	5.0	0.05	*-0.4	4.9	0.20	6.0	0.20	*-1.1	-0.2
Delaware	Y	6.3	0.15	6.0	0.11	*0.3	6.5	0.45	6.6	0.39	a	-0.2
District of Columbia	Y	3.4	0.18	3.0	0.07	*0.4	3.2	0.39	3.4	0.38	-0.2	0.2
Florida	N	12.3	0.04	12.1	0.03	*0.2	12.2	0.18	13.1	0.13	*-0.9	0.1
Georgia	N	13.0	0.07	12.5	0.05	*0.5	12.6	0.19	13.3	0.18	*-0.7	*0.4
Hawaii	Y	3.7	0.06	3.6	0.04	0.1	3.9	0.31	3.9	0.23	a	-0.2
Idaho	^E Y	9.7	0.15	10.1	0.11	*-0.5	9.5	0.36	10.7	0.33	*-1.2	0.1
Illinois	Y	7.1	0.03	6.7	0.02	*0.3	7.0	0.13	7.4	0.12	*-0.4	a
Indiana	^B Y	7.5	0.05	8.2	0.03	*-0.7	7.3	0.15	8.7	0.17	*-1.4	0.2
Iowa	Y	4.9	0.07	4.5	0.04	*0.4	4.8	0.18	5.0	0.19	-0.2	0.1
Kansas	N	8.8	0.09	9.0	0.09	-0.2	8.5	0.25	9.2	0.24	*-0.7	0.3
Kentucky	Y	5.8	0.05	6.0	0.04	*-0.2	5.5	0.20	6.4	0.19	*-0.9	0.2
Louisiana	^C Y	8.2	0.07	8.1	0.06	0.1	8.2	0.23	8.9	0.18	*-0.7	a
Maine	^E Y	7.5	0.10	8.0	0.09	*-0.5	7.3	0.31	8.1	0.32	*-0.8	0.2
Maryland	Y	5.7	0.05	5.6	0.04	0.1	5.6	0.19	6.0	0.15	-0.4	0.1
Massachusetts	Y	2.7	0.02	2.7	0.02	a	2.5	0.11	3.0	0.09	*-0.5	0.1
Michigan	^A Y	5.3	0.03	5.4	0.02	*-0.1	5.2	0.12	5.8	0.11	*-0.5	a
Minnesota	Y	4.9	0.05	4.6	0.03	*0.3	4.6	0.14	4.9	0.15	*-0.3	*0.3
Mississippi	N	11.7	0.10	12.2	0.10	*-0.5	11.6	0.36	12.9	0.32	*-1.3	a
Missouri	N	10.1	0.07	9.5	0.04	*0.6	9.7	0.17	10.0	0.19	-0.2	*0.4
Montana	^B Y	8.7	0.16	8.3	0.11	*0.5	8.6	0.48	8.3	0.33	0.4	0.1
Nebraska	N	7.9	0.10	7.6	0.08	*0.3	7.6	0.35	8.2	0.26	-0.5	0.3
Nevada	Y	11.9	0.10	10.8	0.08	*1.1	11.1	0.32	11.4	0.28	-0.3	*0.8
New Hampshire	^A Y	6.1	0.13	6.1	0.08	a	6.5	0.44	6.3	0.35	0.2	-0.4
New Jersey	Y	7.6	0.05	7.1	0.03	*0.5	7.3	0.14	7.9	0.13	*-0.6	*0.3
New Mexico	Y	9.7	0.12	9.7	0.11	a	9.7	0.40	9.9	0.34	-0.2	a
New York	Y	5.1	0.02	4.9	0.01	*0.2	5.1	0.09	5.2	0.06	-0.1	a
North Carolina	N	10.6	0.05	10.6	0.04	-0.1	10.6	0.16	11.2	0.16	*-0.7	a
North Dakota	Y	7.1	0.26	6.7	0.12	0.5	7.0	0.40	6.7	0.41	0.3	0.1
Ohio	Y	6.7	0.03	6.2	0.02	*0.5	6.4	0.14	6.6	0.12	-0.2	*0.3

Table 3. Percentage Uninsured by State Using ACS Production and Experimental Weights, 2019 and 2020
(continued)

	Medicaid Expansion State? ¹	With Experimental Weights (EBW)					With Production Weights (PMW)					Difference within 2020 EBW less PMW
		2020 (N=321,460)		2019 (N=320,155)		Difference 2020 less 2019	2020 (N=321,460)		2019 (N=320,155)		Difference 2020 less 2019	
		%	SE ¹	%	SE ¹		%	SE ¹	%	SE ¹		
Oklahoma	N	15.3	0.07	14.1	0.07	*1.1	14.8	0.22	14.2	0.21	*0.6	*0.5
Oregon	Y	6.6	0.05	6.8	0.05	*-0.2	6.4	0.23	7.2	0.20	*-0.8	0.2
Pennsylvania	^A Y	6.3	0.03	5.7	0.02	*0.6	6.0	0.14	5.8	0.10	0.2	*0.4
Rhode Island	Y	3.7	0.10	3.9	0.08	*-0.2	4.0	0.35	4.1	0.36	-0.2	-0.3
South Carolina	N	10.4	0.08	10.2	0.07	*0.2	9.9	0.27	10.8	0.20	*-0.9	*0.5
South Dakota	N	9.6	0.19	9.1	0.12	*0.5	9.1	0.41	9.8	0.44	-0.7	0.5
Tennessee	N	10.1	0.06	9.4	0.05	*0.7	9.9	0.20	10.1	0.18	-0.2	0.2
Texas	N	17.5	0.05	17.0	0.03	*0.5	17.0	0.19	18.3	0.14	*-1.3	*0.5
Utah	^E Y	8.5	0.11	9.0	0.07	*-0.5	8.2	0.31	9.7	0.31	*-1.4	0.3
Vermont	Y	4.0	0.13	4.1	0.09	-0.1	3.8	0.33	4.4	0.29	-0.6	0.2
Virginia	^D Y	7.2	0.05	7.3	0.04	*-0.1	7.0	0.15	7.8	0.16	*-0.8	0.1
Washington	Y	6.3	0.04	6.4	0.03	*-0.2	5.9	0.14	6.6	0.15	*-0.7	*0.4
West Virginia	Y	6.6	0.10	6.4	0.05	*0.3	6.7	0.30	6.6	0.27	0.1	-0.1
Wisconsin	N	5.6	0.04	5.4	0.03	*0.3	5.3	0.15	5.7	0.13	*-0.4	*0.3
Wyoming	N	11.2	0.34	11.3	0.22	-0.1	10.5	0.67	12.3	0.78	*-1.8	0.7

*Statistically different from zero at the 90 percent confidence level.

z The standard error rounds to 0.

a The difference rounds to 0 and is not statistically significant.

b The difference rounds to 0, but is positive and statistically significant.

c The difference rounds to 0, but is negative and statistically significant.

^A Expanded Medicaid eligibility after January 1, 2014, and on or before January 1, 2015; ^B Expanded Medicaid eligibility after January 1, 2015, and on or before January 1, 2016; ^C Expanded Medicaid eligibility after January 1, 2016, and on or before January 1, 2017; ^D Expanded Medicaid eligibility after January 1, 2018, and on or before January 1, 2019.; ^E Expanded Medicaid eligibility after January 1, 2019, and on or before January 1, 2020.

¹ A standard error (SE) measures the variability of an estimate due to sampling and provides the basis for calculating the MOE.

Source: U.S. Census Bureau 2019 and 2020 ACS 1-Year Production and Experimental Estimates

Table 4. Percentage With Disability Using ACS Production and Experimental Weights, 2019 and 2020

Universe: All Persons in Households

(Numbers in thousands, standard errors in percentage points. For information on confidentiality protection, sampling error, nonsampling error, and definitions, refer to https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2020.pdf and https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2019.pdf)

	With Experimental Weights (EBW)					With Production Weights (PMW)					Difference within 2020 EBW less PMW
	2020 (N=321,460)		2019 (N=320,155)		Difference 2020 less 2019	2020 (N=321,460)		2019 (N=320,155)		Difference 2020 less 2019	
	%	SE	%	SE		%	SE	%	SE		
With disability¹	12.9	0.01	12.6	0.01	*0.3	12.6	0.03	12.6	0.02	a	*0.3
Difficulty hearing¹	3.6	z	3.4	z	*0.1	3.6	0.01	3.6	0.01	*0.1	*c
Difficulty seeing¹	2.4	z	2.2	z	*0.2	2.3	0.01	2.3	0.01	*b	a
Difficulty remembering or concentrating²	5.2	0.01	5.1	z	*0.1	5.0	0.02	5.1	0.02	*-0.1	*0.2
With ambulatory difficulty²	6.7	0.01	6.6	0.01	*b	6.5	0.02	6.8	0.02	*-0.3	*0.1
Difficulty with self-care²	2.5	z	2.5	z	*-0.1	2.4	0.01	2.6	0.01	*-0.2	*0.1
Difficulty with independent living³	5.5	0.01	5.6	0.01	*-0.1	5.4	0.02	5.6	0.02	*-0.2	*0.2

* Changes between the estimates are statistically different from zero at the 90 percent confidence level.

z The standard error rounds to 0.

a The difference rounds to 0 and is not statistically significant.

b The difference rounds to 0, but is positive and statistically significant.

c The difference rounds to 0, but is negative and statistically significant.

¹ Universe includes all ages

² Universe includes ages 5 and over

³ Universe includes ages 15 and over

Source: U.S. Census Bureau 2019 and 2020 ACS 1-Year Production and Experimental Estimates

Appendix Table 1. Health Insurance Coverage by Selected Type Using ACS Production Weights, 2008-2020

Universe: All Persons in Households

(Numbers in thousands, standard errors in percentage points. For information on confidentiality protection, sampling error, nonsampling error, and definitions, refer to https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2020.pdf and https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2019.pdf)

Year	Total	Uninsured ¹			Private Coverage ²			Employment-Based Insurance			Public Coverage ³			Medicaid		
		%	SE	Difference	%	SE	Difference	%	SE	Difference	%	SE	Difference	%	SE	Difference
2008	295,813	14.6	0.05		69.7	0.07		58.8	0.06		27.2	0.03		15.0	0.03	
2009	298,729	15.1	0.05	*0.6	67.6	0.08	*-2.2	56.6	0.06	*-2.2	28.5	0.03	*1.3	16.1	0.04	*1.0
2010	301,362	15.5	0.05	*0.4	65.9	0.08	*-1.7	54.9	0.06	*-1.7	29.7	0.03	*1.2	17.0	0.04	*0.9
2011	303,586	15.1	0.05	*-0.4	65.2	0.07	*-0.6	54.6	0.06	*-0.3	30.5	0.04	*0.8	17.6	0.04	*0.6
2012	305,885	14.8	0.04	*-0.4	65.2	0.06	-0.1	54.6	0.05	a	31.2	0.03	*0.6	17.8	0.03	*0.2
2013	308,099	14.5	0.04	*-0.2	65.1	0.07	-0.1	54.0	0.06	*-0.6	31.6	0.03	*0.4	17.8	0.03	a
2014	310,793	11.7	0.04	*-2.8	66.4	0.07	*1.3	54.2	0.06	*0.2	33.3	0.03	*1.7	19.2	0.03	*1.3
2015	313,348	9.4	0.04	*-2.3	67.5	0.07	*1.1	54.4	0.06	*0.2	34.8	0.03	*1.5	20.4	0.04	*1.2
2016	315,048	8.6	0.03	*-0.8	67.9	0.07	*0.4	54.7	0.06	*0.2	35.5	0.04	*0.7	20.8	0.04	*0.4
2017	317,632	8.7	0.04	*0.2	67.7	0.08	*-0.2	55.0	0.07	*0.3	35.5	0.04	a	20.5	0.05	*-0.3
2018	319,076	8.9	0.03	*0.1	67.6	0.08	-0.1	55.2	0.07	*0.2	35.6	0.04	*0.2	20.4	0.04	*-0.1
2019	320,155	9.2	0.04	*0.3	67.5	0.08	-0.1	55.4	0.08	*0.2	35.4	0.04	*-0.2	19.7	0.05	*-0.7
2020 ⁴	321,460	8.6	0.04	*-0.6	68.8	0.06	*1.4	56.3	0.06	*1.0	35.1	0.04	*-0.3	18.9	0.04	*-0.8

*Statistically different from zero at the 90 percent confidence level.

z The standard error rounds to 0.

a The difference rounds to 0 and is not statistically significant.

b The difference rounds to 0, but is positive and statistically significant.

c The difference rounds to 0, but is negative and statistically significant.

¹ In the ACS, individuals are considered uninsured if they are uninsured at the time of interview.

² Private health insurance includes coverage provided through an employer or union, coverage purchased directly, or TRICARE.

³ Public health insurance coverage includes Medicaid, Medicare, CHAMPVA (Civilian Health and Medical Program of the Department of Veterans Affairs), and care provided by the Department of Veterans Affairs and the military.

⁴ 2020 ACS estimates using production weights are not official estimates and should be interpreted with caution.

Source: U.S. Census Bureau 2008 through 2020 ACS 1-Year Production Estimates

Appendix Table 2. Selected Characteristics Using ACS Production and Experimental Weights, 2019 and 2020

Universe: All Persons in Households

(Numbers in thousands, standard errors in percentage points. For information on confidentiality protection, sampling error, nonsampling error, and definitions, refer to https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2020.pdf and https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2019.pdf)

	With Experimental Weights						With Production Weights						Difference within 2020 EBW less PMW	
	2020 (N=321,460)		2019 (N=320,155)		Difference 2020 less 2019		2020 (N=321,460)		2019 (N=320,155)		Difference 2020 less 2019			
	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE	%	SE
Age														
Under age 19	23.6	0.01	23.9	0.01	*-0.3	0.01	23.6	0.01	23.9	0.01	*-0.3	0.01	a	0.01
Aged 19 to 64	59.5	0.01	59.7	0.01	*-0.2	0.01	59.5	0.01	59.7	0.01	*-0.2	0.01	a	0.01
Aged 65 and older	16.8	0.01	16.4	0.01	*0.4	0.01	16.8	0.01	16.4	0.01	*0.4	0.01	a	0.01
Marital Status (<i>Universe: 19 years and older</i>)														
Married	52.7	0.03	53.5	0.03	*-0.8	0.04	53.4	0.06	52.0	0.06	*1.4	0.09	*-0.6	0.07
Not married	47.3	0.03	46.5	0.03	*0.8	0.04	46.6	0.06	48.0	0.06	*-1.4	0.09	*0.6	0.07
Employment Status (<i>Universe: 16 years and older</i>)														
Employed	59.4	0.02	62.1	0.01	*-2.6	0.02	60.0	0.04	62.0	0.03	*-1.9	0.05	*-0.6	0.04
Unemployed	4.3	z	2.9	z	*1.4	0.01	4.1	0.02	2.9	0.01	*1.2	0.02	*0.2	0.02
Not in labor force	36.3	0.02	35.0	0.01	*1.3	0.02	35.9	0.03	35.2	0.03	*0.7	0.05	*0.3	0.04
Income-to-Poverty Ratio (<i>In poverty universe</i>)														
Below 100 percent of poverty	11.7	0.01	11.9	0.01	*-0.2	0.01	11.2	0.04	12.1	0.05	*-1.0	0.06	*0.6	0.04
Between 100 and 399 percent of poverty	45.7	0.02	45.7	0.02	a	0.03	44.9	0.07	46.3	0.06	*-1.3	0.09	*0.8	0.07
At or above 400 percent of poverty	42.6	0.03	42.3	0.02	*0.2	0.04	43.9	0.07	41.6	0.08	*2.3	0.11	*-1.3	0.07

*Statistically different from zero at the 90 percent confidence level.

z The standard error rounds to 0.

a The difference rounds to 0 and is not statistically significant.

b The difference rounds to 0, but is positive and statistically significant.

c The difference rounds to 0, but is negative and statistically significant.

Source: U.S. Census Bureau 2019 and 2020 ACS 1-Year Production and Experimental Estimates

Appendix Table 3. Percent of People with Any Disability Using Production Method Weights, 2008 to 2020

Universe: All Persons in Households

(Numbers in thousands, standard errors in percentage points. For information on confidentiality protection, sampling error, nonsampling error, and definitions, refer to https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2020.pdf and https://www2.census.gov/programs-surveys/acs/tech_docs/accuracy/ACS_Accuracy_of_Data_2019.pdf)

Year	Total	Percent of People with Any Disability		
		%	SE	Difference
2008	295,813	11.9	0.02	
2009	298,729	11.8	0.02	*-0.1
2010	301,362	11.8	0.02	a
2011	303,586	12.1	0.02	*0.2
2012	305,885	12.1	0.02	a
2013	308,099	12.5	0.02	*0.4
2014	310,793	12.5	0.02	*0.6
2015	313,348	12.5	0.02	a
2016	315,048	12.7	0.02	*0.2
2017	317,632	12.6	0.02	*-0.1
2018	319,076	12.5	0.02	*-0.1
2019	320,155	12.6	0.02	*0.1
2020 ¹	321,460	12.6	0.03	a

* Changes between the estimates are statistically different from zero at the 90 percent confidence level.

z The standard error rounds to 0.

a The difference rounds to 0 and is not statistically significant.

b The difference rounds to 0, but is positive and statistically significant.

c The difference rounds to 0, but is negative and statistically significant.

¹ 2020 ACS estimates using production weights are not official estimates and should be interpreted with caution.

Source: U.S. Census Bureau 2008 through 2020 ACS 1-Year Production Estimates