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SUMMARY

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Changes in Employment and Employer-Sponsored Health Insurance Levels During the COVID-19 Pandemic

The Coronavirus Disease 2019 (COVID-19) pandemic and related recession led to massive job loss in early 2020, with some lasting labor market effects. Because a majority of Americans receive their health insurance through an employment setting (either directly through their own employer or through a spouse's or parent's employer), these large and persistent job losses raise questions about the extent to which similar declines in employer-sponsored insurance (ESI) coverage occurred.

CRS analysis shows that between March 2019 and March 2021, employment levels fell from 85.0% of the working-age population (persons aged 19 to 64) to 82.9% of the working-age population, a decrease of almost 6.0 million jobs. Over this period, the percentage of all working-age adults enrolled in ESI dropped from 62.2% to 61.6% (a decrease of approximately 1.2 million adults with ESI coverage), which is a smaller decline than some studies published early in the pandemic predicted.

The extent to which job losses contribute to a decline in ESI coverage depends on various factors. These factors include, among others, whether the lost jobs offered ESI, whether individuals who lost their jobs were enrolled in ESI, and whether formerly covered individuals who lost their jobs were able to enroll in ESI coverage through a spouse's or parent's employer.

The small percentage-point decline in ESI coverage among the working-age population (relative to employment loss) between March 2019 and March 2021 can be partially explained by the fact that job loss over that period was, in the aggregate, concentrated in jobs that were less likely to include an offer of health insurance coverage. The number of workers reporting their employer did not offer health insurance fell by 3.4 million, a 10.1% loss, which exceeds the decline in the number of workers reporting their employer did offer ESI (2.6 million, a 2.7% loss) between March 2019 and March 2021.

Although COVID-19-related layoffs were widespread, some worker groups were more affected than others. As such, this report evaluates employment loss and its composition (i.e., the extent to which lost jobs had offered ESI), as well as the relationship between job loss and ESI offer rates and coverage across industries and selected demographic groups.

Top-level findings from analyses by industry and demographics include the following:

- The four industries with the lowest ESI offer rates in 2019 (all of which were below the overall ESI rate) account for nearly half of the decrease in employment between March 2019 and March 2021.
- Job loss was not exclusive to those without ESI offers: overall and within industries, employment declined to varying degrees among both jobs that offered ESI and those that did not.
- Across the different demographic groups, ESI coverage rates generally rose or remained stable among workers and declined or remained stable among the broader working-age adult population.
- Working-age adults with lower levels of educational attainment were particularly vulnerable to loss of ESI coverage during the analysis period.

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Introduction

The onset of the Coronavirus Disease 2019 (COVID-19) pandemic resulted in a short but deep recession and led to massive job loss in early 2020.[1] Despite a relatively rapid partial recovery, some labor market impacts persisted for several months.[2] Because a majority of working-age adults (i.e., persons aged 19 to 64) receive their health insurance through an employment setting, some have raised concerns about whether these large and lasting job losses led to a decline in employer-sponsored health insurance (ESI) coverage. Given the unique characteristics of the pandemic job loss, analyzing the extent to which this job loss contributed to ESI declines may help federal policymakers retrospectively evaluate certain COVID-19-related ESI policies and inform the policy debate should similar job loss situations subsequently occur.

This report examines the composition of employment change over the March 2019-March 2021 period—the extent to which net employment loss comprised jobs that included an offer of ESI coverage (*ESI jobs*) and those that did not (*non-ESI jobs*)—and how it relates to ESI offer rates among working adults and ESI coverage rates for both workers and the broader working-age population, which includes both workers and nonworkers.[3]

CRS analysis shows that employment levels fell from 85.0% of the working-age adult population in March 2019 to 82.9% in March 2021 (a decrease of 6.0 million jobs). During this period, the percentage of all working-age adults enrolled in ESI dropped from 62.2% to 61.6% (a decrease of 1.2 million adults with ESI coverage), which is a smaller decline in ESI coverage than studies published early in the pandemic predicted.[4] Among *employed* working-age adults, however, ESI coverage rates *increased* from 73.9% to 74.9%.

This analysis suggests that the rise in the coverage rate among employed adults is in part due to attrition; that is, the ESI coverage rate increased among workers because a sufficiently large share of workers *without* ESI coverage lost work and therefore were no longer included in the calculation. Of the estimated 6.0 million jobs lost between March 2019 and March 2021, roughly 57% (3.4 million) were jobs that did not include an offer of ESI coverage.

Pandemic conditions led to swift and significant job loss in all industries but affected some sectors more than others. This report considers industry-level differences in the rates at which

[1] The National Bureau of Economic Research (NBER) identified a recession lasting from February 2020 to April 2020.

[2] For example, in June 2022 employment in the leisure and hospitality sector remained 1.1 million below the January 2020 level, At the aggregate labor market level, the employment-population ratio was close to but still below its January 2020 value (59.9 in June 2022 and 61.1 in January 2020), and the unemployment rate was close to but still above the January 2020 rate (3.6 in June 2022 and 3.5 in January 2020).

[3] Enrollment in employment-sponsored insurance (ESI) is conditional upon many factors, including an individual's employment status (or that of a spouse or parent), whether the individual's employer offers this benefit to its employees, and, if so, whether the individual is eligible for such coverage. Other factors, such as the affordability of the ESI relative to the individual's income and the costs and benefits of the ESI offered through an employer relative to the alternate plans the individual is eligible for, also influence individual's enrollment decisions. Given these distinctions, the extent to which job losses contribute to ESI loss can depend on whether the lost jobs were jobs that offered ESI, the extent to which individuals were enrolled in ESI, and the ability of a terminated individual to subsequently enroll in ESI coverage through a spouse's or parent's employer (among other factors). Finally, changes in ESI offer rates have potential spillover effects on ESI coverage rates among the broader working-age population (e.g., resulting from one family member losing an ESI-offering job, which causes other family members to lose ESI access).

[4] For a discussion of studies that estimated changes in ESI coverage at earlier points of the pandemic, see footnote 26 and footnote 27. ESI enrollment (coverage) and offer rates presented in this report are calculated by the Congressional Research Service (CRS) using data from the U.S. Census Bureau's Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC). Additional details on these data are in the "Data Used in This Report" section of this report.

workers are offered ESI and the extent to which employment loss during the pandemic varied across industries. For example, leisure and hospitality employment fell markedly early in the pandemic and had not fully recovered by March 2021. Such a loss is notable in the context of ESI coverage because the leisure and hospitality sector, historically, has a relatively low ESI offer rate (51.5% in 2019, compared with 74% across all industries in that year). More generally, the four industries with the lowest ESI offer rates in 2019 (all of which were below the overall ESI rate) account for nearly half of the decrease in employment between March 2019 and March 2021.

Job loss during the pandemic was not exclusive to those without ESI offers; overall and within industries, employment declined to varying degrees among both jobs that offered ESI and those that did not. For example, in two of the three industries with the largest declines in employment levels between March 2019 and March 2021, ESI jobs made up 57.6% of the decrease (leisure and hospitality industry) and 80% of the decrease (education and health services), respectively.

The report also examines how ESI offer and coverage rates changed during the pandemic for workers and all working-age adults in selected demographic groups: race, Hispanic ethnicity, sex, and educational attainment. Across the demographic groups, coverage rates generally tended to rise or remain stable among workers and to decline or remain stable among the broader working-age adult population. This analysis reveals that working-age adults with lower levels of educational attainment were particularly vulnerable to loss of ESI coverage.

This report begins with a description of the data used before presenting national, industry-level, and demographic analyses.[5] It concludes with four appendixes: The first contains a supplementary data table that describes ESI coverage rates by age. The second contains supplementary data tables that describe the composition of job loss (e.g., ESI jobs versus non-ESI jobs). The third provides additional tables that describe ESI coverage rates for several demographic characteristics. The fourth discusses methods used to assess the statistical significance of some estimates presented in this report.

Data Used in This Report

The U.S. Census Bureau's Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC) is the primary data source used in this analysis to examine health insurance coverage in March 2019 and March 2021. The CPS-ASEC is a large-scale household survey of the noninstitutionalized U.S. population (the 50 states and the District of Columbia) conducted annually by the Census Bureau, largely in March.[6] The ASEC, a supplement to the Census Bureau's "basic" CPS,[7] is designed to collect detailed information on income, poverty, and health insurance at the individual and household levels. Data from the monthly basic CPS (i.e., without the supplement) are used in this report to examine general labor force patterns; CPS-ASEC data

[5] This report examines changes in ESI coverage in aggregate for workers and the working-age population. It does not attempt to track individuals who became uninsured during the pandemic or transitioned between different types of coverage (e.g., from ESI to public coverage).

[6] Most sample participants are interviewed in March, but some are interviewed in February and April. Individuals living in Puerto Rico and the U.S. territories and institutionalized individuals (e.g., those residing in correctional facilities, skilled-nursing facilities, and members of the Armed Forces living on post without a civilian in their household) are excluded from the population covered by the Annual Social and Economic Supplement (ASEC).

[7] The U.S. Census Bureau's "basic" Current Population Survey (CPS) survey is conducted monthly and is a source of official labor force statistics.

are used to estimate employment levels when presented in data tables that include measures of ESI coverage or offer rates, such as in **Table 1**.[8]

Among other questions, the CPS-ASEC asks about household members' health insurance coverage at the time of the survey interview and during the preceding calendar year. It also asks whether individuals were receiving coverage through an ESI plan (through either their own employer or that of a spouse or parent) at the time of the interview and whether they had received such coverage in the preceding year. The analysis in this report is based on estimates of respondents' *current coverage* (i.e., their coverage at the time of the survey interview). The use of this point-in-time measure allows an analysis of changes in ESI between two specific time periods. By contrast, CPS-ASEC questions about ESI coverage during the preceding calendar year measure only if the individual had no coverage or had ESI coverage for at least part of the year.

When collecting information on current coverage, the CPS-ASEC also asks employed respondents whether their employers offer health insurance and, if so, whether the worker is eligible to accept the offer. Another benefit of using the current coverage measure is that it allows for the construction of the ESI offer measure (i.e., the share of workers who are offered and are eligible for ESI).

As a result, in this report, *ESI coverage* or *ESI enrollment* refers to individuals' enrollment in ESI (through either their own employer or that of a spouse or parent) at the time survey respondents were interviewed. It does not represent the total number of people who had ESI coverage for the entire year or the total number of people who had ESI at any point in the year. ESI enrollment includes those enrolled in Consolidated Omnibus Budget Reconciliation Act of 1985 (COBRA; P.L. 99-272) continuation coverage.

Analysis Period

This report considers the impact of the COVID-19 pandemic on ESI by comparing ESI offer and coverage rates in March 2019 with those rates in March 2021. Although the pandemic started in early 2020, ESI offer and coverage rates in March 2020 are not included in this analysis for two reasons. First, changes in employment status are expected to be a driving force behind COVID-19-related changes to ESI, and the large-scale job losses associated with the pandemic were concentrated in April 2020 (**Figure 1**). Due to the timing of the CPS-ASEC, which is administered mainly in March, the survey sample of observations measuring current coverage would include responses generally collected before large-scale job losses occurred.

Second, the pandemic disrupted data collection for the 2020 and 2021 CPS-ASEC, resulting in survey response rates that were lower than in months preceding the pandemic. (Similarly, the response rate for the basic CPS was 73% in March 2020 and 76% in March 2021; the pre-pandemic response rate for the basic monthly CPS was regularly above 80%). Census Bureau research reveals that not only were the ASEC response rates muted in 2020 and 2021, but the pattern of nonresponse was not uniform across the earnings distribution (lower-earning households *were less likely* to respond to the CPS) and other characteristics correlated with ESI coverage (e.g., employment status). Census Bureau analyses indicated that changes in the nonresponse pattern may have affected CPS-ASEC ESI estimates for 2020, meaning the

[8] Both the basic CPS and the CPS-ASEC can be used to produce nationally representative estimates of employment. However, because the basic CPS collects information for a single month and the CPS-ASEC collects information over the February-March period, and because the two surveys use a separate set of weights to calculate national estimates, there are some differences in employment estimates included in this report.

magnitude of change in ESI coverage from the 2019 CPS-ASEC to the 2020 CPS-ASEC was overstated.[9] The 2021 sample also was found to have nonresponse bias, but to a lesser degree than in 2020.[10] The Census Bureau has indicated that comparisons between the 2021 CPS-ASEC and the 2019 CPS-ASEC provide for "the most consistent comparisons."[11]

Population Examined in This Report

In large part, this report focuses on the working-age adult population—that is, persons aged 19 to 64 years. This group has relatively high labor force participation rates, and members of this group are more likely than members of other age groups to have ESI, either through their own employers or through a family member's employer (**Table A-1**).

The report excludes from its analysis individuals under the age of 19 and those over the age of 64. Individuals under the age of 19 with ESI are likely to be a dependent on the ESI policy (e.g., to have ESI provided through a parent's employer); as a result, in most instances, job loss among this younger population would have minimal impact on their ESI coverage rates. Those aged 65 and over generally are eligible for Medicare and may have the option to retire from the workforce, which can create differences in how this population interacts with the labor force and ESI, relative to the working-age adult population.[12]

Terminology Used in the Report

Working-age adults refers to individuals between the ages of 19 and 64.

Employed or *workers* refers to individuals aged 19 to 64 who are employed at the time of the survey. Both terms exclude self-employed workers.

Job loss refers to a decrease in the number of employed individuals (generally from March 2019 to March 2021).

ESI enrollment or ESI coverage refers to enrollment in employer-sponsored health insurance (either through an individual's own employer or as a dependent on a family member's employer) at the time survey respondents were interviewed (generally March of a given year, but some interviews are conducted in February and in April). Neither term represents the total number of people who had ESI coverage for the entire year or the total number of people who had ESI coverage at any point in the year. Enrollment in ESI includes those enrolled in Consolidated Omnibus Budget Reconciliation Act of 1985 (COBRA) continuation coverage.

ESI offer refers to employed individuals who were offered and were eligible to accept ESI through their own employers. Specifically, these individuals are identified as those who were (1) enrolled in ESI as the policyholder through their own employers, (2) enrolled in ESI as a dependent and reported that they were offered and eligible for ESI through their own employers but did not take it up, or (3) not enrolled in ESI but reported that they were offered and eligible for ESI through their own employers.

[9] Edward R. Berchick, Laryssa Mykyta, and Sharon M. Stern, *The Influence of COVID-19-Related Data Collection Changes on Measuring Health Insurance Coverage in the 2020 CPS ASEC*, U.S. Census Bureau, SEHSD Working Paper 2020-13, September 15, 2020, at https://www.census.gov/content/dam/Census/library/working-papers/2020/demo/sehsd-wp2020-13.pdf.

[10] Jonathan Rothbaum and Charles Hokayem, *How Did the Pandemic Affect Survey Response: Using Administrative Data to Evaluate Nonresponse in the 2021 Current Population Survey Annual Social and Economic Supplement*, U.S. Census Bureau, September 14, 2021, at https://www.census.gov/newsroom/blogs/research-matters/2021/09/pandemic-affect-survey-response.html.

[11] Katherine Keisler-Starkey and Lisa N. Bunch, *Health Insurance Coverage in the United States: 2020*, U.S. Census Bureau, September 2021, p. 2, at https://www.census.gov/content/dam/Census/library/publications/2021/demo/p60-274.pdf.

[12] For an overview of Medicare, see CRS Report R40425, *Medicare Primer*.

COVID-19 Health Insurance Policy Landscape

In response to the COVID-19 pandemic and corresponding recession, Congress enacted policies that addressed comprehensive health insurance coverage access and affordability issues. These policies focused on ESI in the context of COBRA continuation coverage, subsidized individual health insurance coverage on the exchanges, and Medicaid.[13] Collectively, these policies appeared to have had a minimal impact on the ESI estimates over the period analyzed in this report.[14]

The CPS-ASEC considers COBRA continuation coverage a type of ESI.[15] As such, the American Rescue Plan Act of 2021 (ARPA; P.L. 117-2) COBRA premium assistance, which fully subsidized COBRA coverage for certain individuals from April 1, 2021, through September 30, 2021, could have affected CPS-ASEC ESI estimates. However, COBRA premium assistance was available only during a small portion of the 2021 survey period. Considering those surveyed for the 2021 CPS-ASEC were interviewed generally in March 2021—with only some interviews conducted in April 2021, when the premium assistance was first available—the ARPA COBRA premium assistance likely had a limited effect on the findings in this report.[16]

COVID-19-related policies regarding individual market coverage and Medicaid likely also had little effect on ESI estimates analyzed in this report. In general, individuals who are working and receive an adequate and affordable offer of ESI would not qualify for financial assistance (e.g., premium tax credits, or PTCs) in the individual market on the exchanges.[17] As such, the ARPA expansion of eligibility for and amount of the PTC applicable to certain exchange plans for tax years 2021 and 2022 likely had minimal effect on the ESI estimates used in this analysis.

Similarly, COVID-19 Medicaid policies were not intended to directly incentivize individuals to forego ESI in order to receive Medicaid coverage, though some policies may have resulted in individuals retaining Medicaid coverage (and potentially delaying subsequent ESI enrollment, if available) for longer than they would have absent such policies.[18] The extent to which Medicaid policies affected ESI estimates in this report appears minimal, as the CPS-ASEC found only a

[13] Congressional COVID-19-related policies regarding Consolidated Omnibus Budget Reconciliation Act of 1985 (COBRA) continuation coverage, individual market coverage, and Medicaid were included in the Families First Coronavirus Response Act (FFCRA; P.L. 116-127); the Coronavirus Aid, Relief, and Economic Security Act (P.L. 116-136); the Consolidated Appropriations Act, 2021 (Division N, Title II, Subtitle A, the Continued Assistance for Unemployed Workers Act of 2020; P.L. 116-260); and the American Rescue Plan Act of 2021 (P.L. 117-2).

[14] Other federal policies, such as those that helped employers maintain employment levels during the COVID-19 pandemic and corresponding recession, may have indirectly affected ESI coverage rates during the period analyzed in this report.

[15] COBRA continuation coverage allows employees of certain employers to temporarily continue their ESI, if the employees lose such coverage due to a specified qualifying event (e.g., termination or reduction in hours). An employee's spouse and/or dependents also may qualify for COBRA continuation coverage. For more information on COBRA continuation coverage, see CRS Report R40142, *Health Insurance Continuation Coverage Under COBRA*.

[16] Those enrolling in COBRA continuation coverage prior to the availability of COBRA premium assistance would have been responsible for paying up to the entire ESI premium (i.e., the employee's share of premiums and the employer's share of premiums), plus an administrative fee.

[17] Premium tax credits are financial assistance that reduces the amount individuals pay for health insurance coverage through an individual market exchange. For 2022, if the employee's premium contribution toward the employer's self-only plan exceeds 9.61% of household income, such a plan is considered unaffordable for premium credit eligibility purposes. If a plan's actuarial value is less than 60%, the plan is considered inadequate for premium credit eligibility purposes. For more information on the premium tax credit, see CRS Report R44425, *Health Insurance Premium Tax Credit and Cost-Sharing Reductions*.

[18] For example, see the "Temporary Increase of Medicaid FMAP" in FFCRA.

0.4% increase in Medicaid enrollment from March 2019 to March 2021 (among all surveyed individuals).[19]

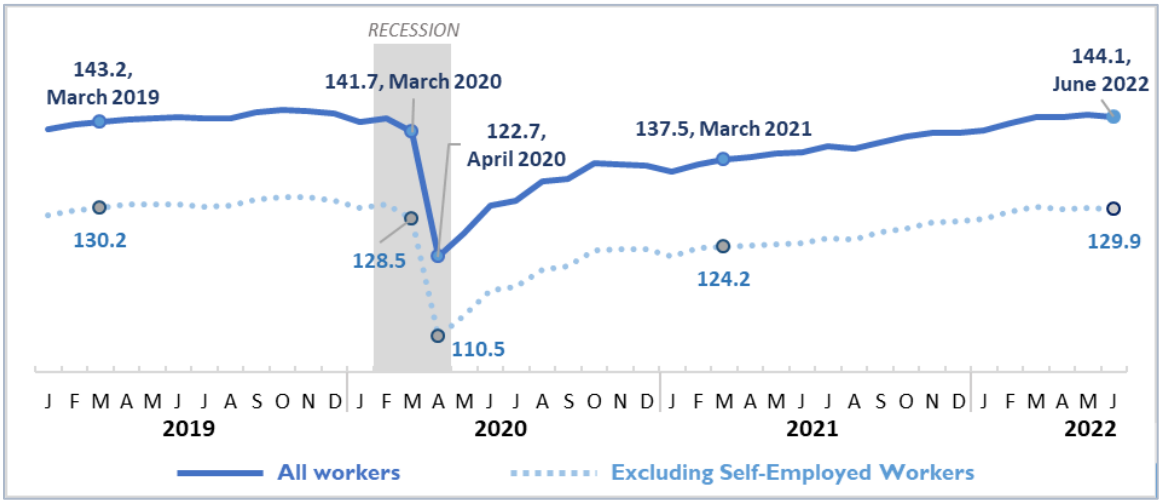
National Employment Levels and ESI Offer and Coverage Rates

The COVID-19 pandemic dramatically disrupted economic activity in early 2020 and led to widespread and massive employment loss. The number of employed working-age adults dropped sharply in April 2020 (**Figure 1**) in response to the pandemic and the associated recession. Employment among this group of workers rebounded partially between May and October 2020, as many workers on temporary layoff were recalled and other nonemployed workers found new jobs. The pace of employment growth slowed thereafter, and gradually returned to pre-pandemic in early 2022.

Between March 2019 and March 2021, employment levels among persons aged 19 to 64 fell from 143.2 million workers to 137.5 million workers.[20] Among non-self-employed workers in the same age group, employment levels fell from 130.2 million workers to 124.2 million workers over the same period.

Figure 1. Number of Employed Workers, January 2019-June 2022

(employment in millions)



Sources: Congressional Research Service (CRS) calculations using monthly data from the U.S. Census Bureau's Current Population Survey (CPS). Recession data are from the National Bureau of Economic Research.

Notes: Rates among persons aged 19-64. Data are not seasonally adjusted.

[19] Katherine Keisler-Starkey and Lisa N. Bunch, *Health Insurance Coverage in the United States: 2020*, U.S. Census Bureau, September 2021, p. 32, at https://www.census.gov/content/dam/Census/library/publications/2021/demo/p60-274.pdf.

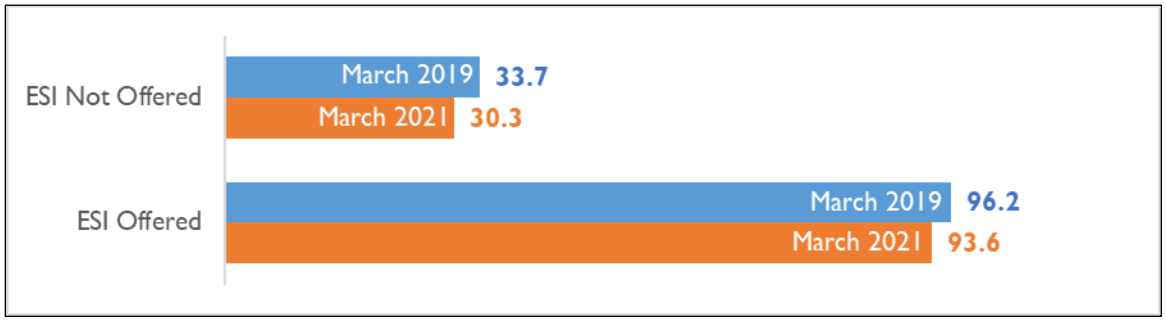
[20] As a share of the population aged 19 to 64 years, CRS calculates that employment fell from 85.0% in March 2019 to 82.9% in March 2021. Data from the monthly basic CPS.

Changes in ESI Versus Non-ESI Jobs

Over half of the jobs lost during the March 2019-March 2021 period were jobs that did not offer ESI to their employees. As shown in **Figure 2**, the number of workers reporting that their employers *did not* offer health insurance (or that the workers were not eligible for such offers) fell by 3.4 million, a 10.1% loss. This decline is greater than the decline in the number of workers reporting ESI offers (-2.6 million, a 2.7% loss) between March 2019 and March 2021.

Figure 2. Employed Workers by Employer-Sponsored Insurance (ESI) Offer, March 2019 and March 2021

(employment in millions)



Sources: CRS estimates using the Current Population Survey Annual Social and Economic Supplement (CPS-ASEC) and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

Notes: The sample comprises workers aged 19 to 64 who were employed at the time of the survey. Self-employed individuals are excluded. An *offer* of employer-sponsored insurance means the individual's employer offers health insurance coverage to its employees and the individual is eligible for such coverage.

Changes in ESI Offer Rates for Workers

Among the employed, access to ESI plans through their own employers (ESI offer rates) increased from 74.0% (March 2019) to 75.5% (March 2021) (**Table 1**).[21] The rise in ESI offer rates among employed workers could have resulted from a relatively higher rate of job loss among workers who did not receive an offer of ESI through their jobs. Put another way, if ESI jobs make up a smaller share of total job loss than the initial ESI offer rate, the ESI offer rate will rise. For example, if overall employment declined but the number of ESI jobs did not change (i.e., ESI jobs made up 0% of total employment loss), then the ESI offer rate would increase (see **text box** and **Figure 4**).

Relationship Between the Composition of Job Loss and the ESI Offer Rate

The ESI offer rate describes the share of jobs at a given point in time for which workers are offered and eligible to accept ESI. That is,

$$\textit{ESI Offer Rate} = (\text{ESI Jobs}) / (\text{Total Jobs})$$

Over time, employment levels change. The effect of such changes on the ESI offer rate depends on the ESI job share of the change of employment (change in ESI jobs over the overall change in employment):

[21] *Employed workers* are individuals employed at the time of the survey, but the category excludes self-employed individuals. An *offer* of employer-sponsored insurance (*ESI offer*) means the individual's employer offers health insurance coverage to its employees and the individual is eligible for such coverage. The *ESI offer rate* describes the share of employed workers who report both that their employers offer ESI and that the individuals are eligible to accept the offer.

ESI Share of Employment Change = (Change in ESI Jobs) / (Change in Total Jobs).

The relationship between the ESI share of employment change and the ESI offer rate in the first measurement year (i.e., the base year) determines how the ESI offer rate changes from the base year to the comparison year.

Specifically, if the ESI share of employment change is

- greater than the initial ESI offer rate, then the ESI offer rate will fall.
- equal to the initial ESI offer rate, then the ESI offer rate will not change.
- less than the initial ESI offer rate, then the ESI offer rate will rise.

For example, consider an industry with 100,000 workers and an initial ESI offer rate of 70% (i.e., 70,000 workers are offered and eligible for ESI, and 30,000 workers are not). Employment falls by 10% (a 10,000 job loss) and ESI jobs make up 60% of that loss (i.e., the number of workers reporting ESI offers declines by 6,000 and the number of workers reporting no ESI offers declines by 4,000). Because the ESI share of lost jobs (60% in this example) is less than the initial ESI offer rate (70%), the ESI offer rate rises to 71.1% (64,000 ESI jobs/90,000 total jobs), despite ESI jobs making up a larger share of total job loss. For an illustrative graphic of this concept, see **Figure 4**.

The rise in ESI offer rates also may have been due, in part, to changes in employer behavior (e.g., a higher share of employers offering ESI as a benefit).[22] The exit from the market of firms that are less likely to offer ESI (e.g., small employers, firms operating in low-offer-rate industries) could have contributed to a higher share of employers offering ESI.

Survey results published by the Kaiser Family Foundation show a similar share of firms overall offering health insurance in 2019 and 2021.[23] The Bureau of Labor Statistics Employee Benefits Survey found an overall increase in the percentage of private industry establishments offering *healthcare benefits* from March 2019 to March 2021, with industry-level variation.[24]

Changes in ESI Coverage Rates

Among the employed, ESI enrollment increased from 73.9% to 74.9% over the March 2019-March 2021 period (**Table 2**). However, the percentage of all *working-age adults* enrolled in ESI dropped from 62.2% to 61.6% (approximately 1.2 million adults) over the same period (**Table A-1**).[25] Although 1.2 million adults losing ESI is not insignificant, it was less than some forecasts

[22] ESI offer rates measured at the employee/worker level (as opposed to the firm level) also can rise if employers expand ESI offers to a broader group of employees (e.g., an employer that already offers insurance to its full-time employees expands coverage to part-time workers). CRS was not able to find evidence that such a change in employer behavior did or did not occur between 2019 and 2021.

[23] The Kaiser Family Foundation survey found no change in overall offer rates at the firm level, though it is possible employers changed behavior at the industry level that canceled out in aggregate. Gary Claxton et al., *2021 Employer Health Benefits Survey*, Kaiser Family Foundation, November 10, 2021, pp. 42-43, at https://files.kff.org/attachment/Report-Employer-Health-Benefits-2021-Annual-Survey.pdf.

[24] The Bureau of Labor Statistics uses the term *healthcare benefits* to refer to preventive and protective medical, dental, vision, or prescription drug coverage. U. S. Bureau of Labor Statistics, *National Compensation Survey: Employee Benefits in the United States, March 2019*, September 2019, p. 179, at https://www.bls.gov/ncs/ebs/benefits/2019/employee-benefits-in-the-united-states-march-2019.pdf; and U.S. Bureau of Labor Statistics, *National Compensation Survey: Employee Benefits in the United States, March 2021*, September 2021, p. 187, at https://www.bls.gov/ncs/ebs/benefits/2021/employee-benefits-in-the-united-states-march-2021.pdf.

[25] Individuals who lose their ESI need to identify another source of health insurance to remain insured. Other health insurance options available to these individuals may include coverage through a spouse's or parent's employer, COBRA continuation coverage, individual health insurance coverage (i.e., direct purchase coverage), and Medicaid. For estimates on how enrollment in these coverage types changed from March 2019 to March 2021, see Figure B-5 in Katherine Keisler-Starkey and Lisa N. Bunch, *Health Insurance Coverage in the United States: 2020*, U.S. Census Bureau, September 2021, p. 32, at https://www.census.gov/content/dam/Census/library/publications/2021/demo/p60-274.pdf.

made in the early months of the pandemic,[26] and it was below some estimated losses for various periods in 2020.[27] The smaller decline found in this report may be attributed, in part, to the longer period of analysis; by including data for 2021, this report captures more of the partial rebound in employment than earlier studies, which could contribute to the smaller estimated decline in ESI coverage among working-age adults. That said, in comparison to some studies that use data sources other than the CPS-ASEC to examine health insurance enrollment from early 2019 to early 2021, studies that use the CPS-ASEC show a smaller loss in ESI coverage.[28]

Employment Levels and ESI Offer and Coverage Rates, by Industry

Pandemic conditions led to swift, significant job loss in all industries but affected some sectors more than others. For example, leisure and hospitality employment fell by about 4.6 million workers (aged 19-64) between March and April 2020 (from 10.8 million to 6.2 million), representing more than a quarter of the 18 million workers who lost employment over that period.[29] Despite some recovery, there were still 2.1 million fewer workers employed in the leisure and hospitality sector in March 2021 than in March 2020.

These losses are notable in the context of ESI coverage in the current workforce because the leisure and hospitality sector historically has had a relatively low ESI offer rate (51.5% in 2019, compared with 74% across all industries in that year; see **Table 1)**. More generally, the four

[26] For example, the State Health Access Data Assistance Center estimated that 22.3 million individuals were at risk of losing their health insurance during the five weeks leading up to April 18, 2020 (Ezra Golberstein et al., *Estimates of the Impact of COVID-19 on Disruptions and Potential Loss of Employer-Sponsored Health Insurance (ESI)*, State Health Access Data Assistance Center, April 2020, at https://www.shadac.org/sites/default/files/publications/UMN%20COVID-19%20ESI%20loss%20Brief_April%202020.pdf). In another example, the Kaiser Family Foundation estimated that roughly 28.4 million workers and their dependents could have lost their ESI due to job loss that occurred from March 1, 2020, through May 2, 2020 (Rachel Garfield et al., *Eligibility for ACA Health Coverage Following Job Loss*, Kaiser Family Foundation, May 13, 2020, at https://www.kff.org/coronavirus-covid-19/issue-brief/eligibility-for-aca-health-coverage-following-job-loss/).

[27] For example, an Urban Institute and Robert Wood Johnson Foundation report estimated 3.3 million non-elderly adults lost ESI from April/May to mid-July 2020 (Anuj Gangopadhyaya, Michael Karpman, and Joshua Aarons, *As COVID-19 Recession Extended into Summer 2020, More Than 3 Million Lost Employer-Sponsored Health Insurance Coverage and 2 Million Became Uninsured*, Urban Institute and Robert Wood Johnson Foundation, September 17, 2020, at https://www.urban.org/research/publication/covid-19-recession-extended-summer-2020-more-3-million-adults-lost-employer-sponsored-health-insurance-coverage-and-2-million-became-uninsured). In another example, a Commonwealth Fund and Employee Benefit Research Institute report estimated that between February and June 2020, 14.6 million workers lost a job with ESI or were a dependent on an ESI policy associated with a lost job (Paul Fronstin and Stephen A. Woodbury, *How Many Americans Have Lost Jobs with Employer Health Coverage During the Pandemic?*, Employee Benefit Research Institute and Commonwealth Fund, October 7, 2020, at https://www.commonwealthfund.org/publications/issue-briefs/2020/oct/how-many-lost-jobs-employer-coverage-pandemic).

[28] Stacey McMorrow et al., *Bolstered by Recovery Legislation, the Health Insurance Safety Net Prevented a Rise in Uninsurance Between 2019 and 2021*, Urban Institute and Robert Wood Johnson Foundation, March 2022, p. 7, at https://www.urban.org/sites/default/files/2022-03/bolstered-by-recovery-legislation-the-health-insurance-safety-net-prevented-a-rise-in-uninsurance_0.pdf.

[29] The decline in the leisure and hospitality sector started before April 2020. Therefore, total employment loss in this sector was larger over the January 2020 (11.1 million) to April 2020 (6.2 million) period than over the March 2020 to April 2020 period.

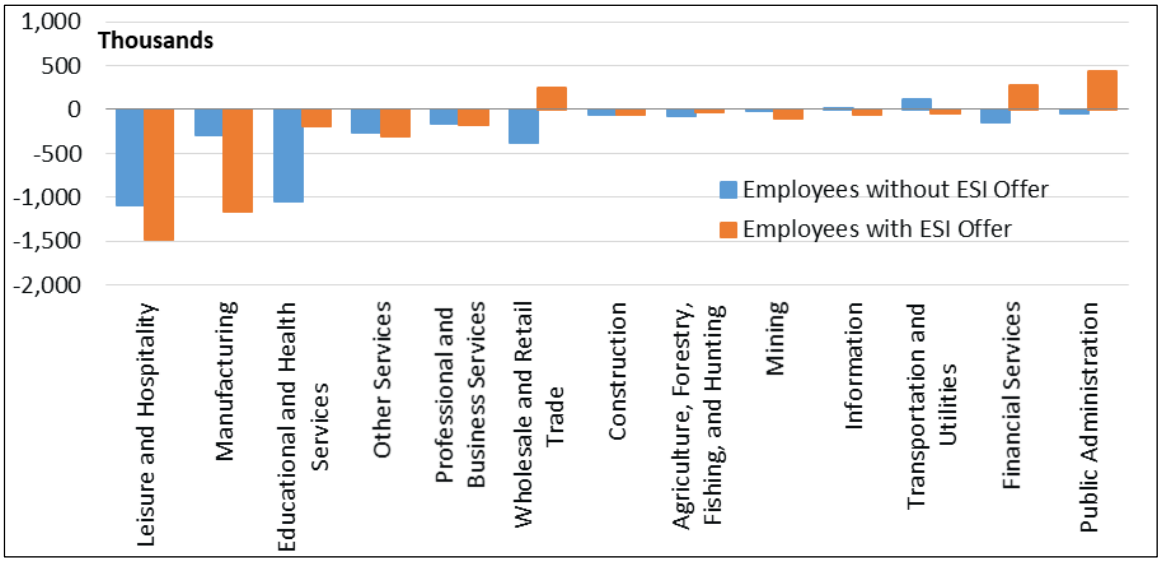
industries with the lowest ESI offer rates in 2019 (all of which were below the overall ESI rate) account for about half of the decrease in employment between March 2019 and March 2021.[30]

Changes in ESI Versus Non-ESI Jobs

Industry-level data suggest losses were not consistently concentrated on jobs that did not offer ESI. These data illustrate that employment losses across ESI and non-ESI jobs occurred at different rates across sectors (i.e., losses were not proportional to initial ESI offer rates).[31] The three industries with the largest decreases in employment between March 2019 and March 2021 were the leisure and hospitality industry, manufacturing industry, and education and health services industry; collectively, these three industries accounted for roughly 87% of the decrease in employment over this period. In the leisure and hospitality industry, jobs without an ESI offer accounted for 42.4% of the decrease in employment from March 2019 to March 2021 (jobs with an ESI offer accounted for 57.6% of the decrease). In the manufacturing industry, jobs without an ESI offer made up 19.9% of the decrease in employment from March 2019 to March 2021 (jobs that offered ESI accounted for 80.1% of the decrease in employment). In the education and health services industry, jobs without an ESI offer accounted for 84.2% of the decrease in employment from March 2019 to March 2021 (jobs that offered ESI comprised only 15.8% of the decrease in employment). (**Figure 3** and **Table B-1**.)

Figure 3. Change in Total Number of Employees With and Without ESI Offers, by Industry, March 2019 and March 2021

(change in thousands)



Source: CRS estimates using the CPS-ASEC and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

Notes: Rates among persons aged 19-64. Industries are ordered by the total change in employment. *Employees* refers to currently employed individuals but excludes self-employed individuals. An *offer* of employer-sponsored

[30] Over the same period, some industries with relatively high ESI offer rates increased employment (such as public administration, which had the highest ESI offer rates in 2019).

[31] For example, if job losses were proportional to ESI offer rates within a given industry, an industry that had a 55% ESI offer rate would see 55% of the job loss in that industry attributable to jobs that offered ESI and 45% attributable to jobs that did not offer ESI.

insurance means the individual's employer offers health insurance coverage to its employees and the individual is eligible for such coverage.

Changes in ESI Offer Rates for Workers

Assuming employers did not markedly change the extent to which they offered ESI during the analysis period, the extent to which decreases in employment were concentrated in jobs that did not include an offer of ESI could have impacted industry ESI offer rates among remaining employed individuals. As noted, the loss of large numbers of workers without an ESI offer would lead to a rise in ESI offer rates among the remaining workforce, all else being equal. The inverse is also true: the loss of large numbers of workers *with an offer of ESI* would lead to a decline in ESI offer rates among the remaining workforce, all else being equal.

Between March 2019 and March 2021, ESI offer rates increased for some industries (e.g., education and health services, wholesale and retail trade, financial services, public administration) and fell for others (e.g., leisure and hospitality, transportation and utilities, information) (**Table 1**). For the three industries that saw the largest declines in employment levels from March 2019 to March 2021, the change in ESI offer rates over the same period varied in terms of both the magnitude and the direction of change (**Table 1**). The leisure and hospital industry saw a decrease in its ESI offer rate (-1.8 percentage points), the manufacturing industry saw a slight increase in its ESI offer rate (0.6 percentage point), and the education and health services industry saw a relatively larger increase in its ESI offer rate (2.5 percentage points). Of the three, only the ESI offer rate change for education and health service jobs was statistically significant.

Table 1. Employment and ESI Offer Rates Among Working-Age Employees in March 2019 and March 2021, by Industry

Industry	Employment (in thousands)				ESI Offer Rate			
	2019	2021	Change		2019	2021	Change	
Public Administration	6,725.7	7,115.4	389.7	**	89.6%	90.9%	1.3 pts	
Mining	680.9	578.6	-102.3	*	86.2%	84.8%	-1.4 pts	
Manufacturing	14,430.7	12,985.2	-1445.5	***	85.0%	85.6%	0.6 pts	
Information	2,386.2	2,345.0	-41.2		83.9%	83.2%	-0.7 pts	
Financial Services	8,660.8	8,799.6	138.8		83.0%	84.8%	1.9 pts	*
Education and Health Services	32,263.8	31,025.2	-1238.7	***	78.5%	81.0%	2.5 pts	***
Transportation and Utilities	7,409.2	7,489.4	80.2		78.2%	76.8%	-1.4 pts	
Professional and Business Services	14,991.2	14,655.2	-336		77.0%	77.5%	0.6 pts	
Wholesale and Retail Trade	16,189.4	16,063.6	-125.9		68.5%	70.6%	2.1 pts	**
Construction	8,026.1	7,918.6	-107.4		61.8%	62.0%	0.1 pts	
Other Services	5,512.9	4,948.3	-564.6	***	54.0%	54.0%	0.0 pts	
Leisure and Hospitality	11,466.7	8,907.2	-2559.4	***	51.5%	49.7%	-1.8 pts	
Agriculture, Forestry, Fishing, and Hunting	1,203.5	1,096.8	-106.7		45.6%	46.8%	1.2 pts	
All Industries	**129,947.3**	**123,928.1**	**-6019.1**	***	**74.0%**	**75.5%**	**1.5 pts**	***

Source: CRS estimates using the CPS-ASEC (ESI coverage) and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

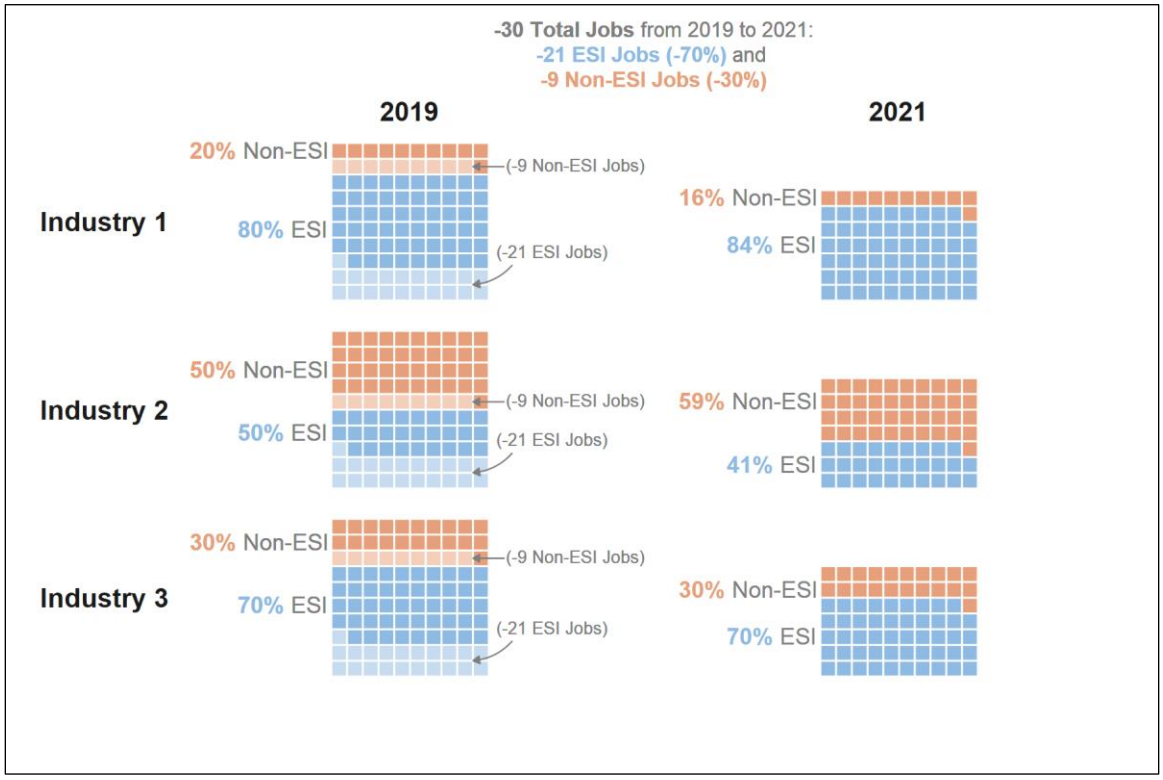
Notes: Numbers may not sum precisely due to rounding. Data are sorted in descending order by the share of workers reporting ESI offers in March 2019. Rates among persons aged 19-64 years and those reporting employed industry. *Employees* refers to individuals employed at the time of the survey. Self-employed individuals are excluded. An *offer* of ESI means the individual's employer offers health insurance coverage to its employees and the individual is eligible for such coverage. The statistical significance of changes reported in this table is indicated as follows: ***=1% level, **=5% level, and *=10% level. See **Appendix D** for information about statistical significance tests.

Employment losses in the education and health services sector were concentrated among workers without ESI offers (only 15.8% of the decrease in employment was attributed to jobs that offered ESI), and the industry-level offer rate increased between March 2019 and March 2021 (**Figure 3** and **Table B-1**).

The extent to which job loss between March 2019 and March 2021 contributed to changes in ESI offer rates also depends on industry-level ESI offer rates in 2019 (i.e., the base level, see **text box**). For example, although about 80% of manufacturing industry employment losses comprised jobs that offered ESI, the ESI offer rate did not decline. In this instance, the offer rate did not fall because the manufacturing ESI offer rate was so high to begin with (85.0% in 2019). For the rate to fall, jobs with ESI offers would have needed to make up more than 85% of total manufacturing jobs lost (see illustrative examples in **Figure 4**).

In the leisure and hospitality industry, employment losses were slightly more concentrated on workers with an ESI offer—slightly more than half of losses (57.6% of the decrease in employment) were jobs with an ESI offer. Inversely from the manufacturing industry, the percentage of leisure and hospitality job loss that consisted of ESI-offering jobs was larger than the March 2019 ESI offer rate in the industry (51.5%), which contributed to the 1.8 percentage point-decrease in the ESI offer rate from March 2019 to March 2021.

Figure 4. Illustrative Examples of How ESI Offer Base Levels Affect ESI Offer Rate Changes



Source: CRS.

Notes: Each square represents one employee. Each industry had 100 employees in 2019. Between 2019 and 2021, each industry saw 70% of the employment change consist of ESI jobs.

Changes in ESI Coverage Rates for Workers

Changes in ESI offer rates across industries do not necessarily translate to similar changes in the ESI *coverage* rates among workers in those industries. From March 2019 to March 2021, some industries (e.g., education and health services) saw increased offer rates and increased enrollment rates. In other industries (e.g., transportation and utilities), offer rates did not rise and enrollment rates declined during this period (**Table 1** and **Table 2**). Still other industries (e.g., financial services) saw increased offer rates but unchanged enrollment rates. This disconnect may be partially attributable to the potential for an employee's ESI offer to impact the coverage status of employees in two separate industries (e.g., via family coverage offered by one employer to a married couple working in two distinct industries). It also may be attributable to changes in factors that may affect employee decisions to take up an ESI offer (e.g., the ESI becomes too expensive, as judged by the employee; a family member's employer coverage becomes available and/or more attractive due to premium, plan design, or other criteria; the employee prefers receiving higher take-home pay as opposed to using some wages for health insurance premiums). In addition, given the movement of workers between jobs between 2019 and 2021 (e.g., due to reemployment following a permanent job loss in 2020), some workers employed in March 2021 may not yet have met ESI eligibility criteria.

Table 2. ESI Coverage Rates Among Working-Age Employees in March 2019 and March 2021, by Industry

Industry	ESI Coverage Rate			
	2019	2021	Change	
Public Administration	86.2%	87.0%	0.8 pts	
Mining	86.7%	87.6%	0.9 pts	
Manufacturing	82.6%	82.2%	-0.4 pts	
Information	84.4%	85.4%	1.0 pts	
Financial Services	84.0%	84.0%	0.0 pts	
Education and Health Services	79.9%	81.5%	1.6 pts	***
Transportation and Utilities	75.9%	73.7%	-2.2 pts	*
Professional and Business Services	76.1%	77.7%	1.6 pts	*
Wholesale and Retail Trade	68.5%	70.0%	1.6 pts	*
Construction	59.7%	59.3%	-0.4 pts	
Other Services	58.5%	59.1%	0.6 pts	
Leisure and Hospitality	52.6%	51.3%	-1.2 pts	
Agriculture, Forestry, Fishing, and Hunting	45.4%	43.9%	-1.5 pts	
All Industries	**73.9%**	**74.9%**	**1.0 pts**	***

Source: CRS estimates using the CPS-ASEC (ESI coverage) and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. Data are sorted to align with the ordering of **Table 1**. Rates among persons aged 19-64 years and those reporting employed industry. *Employees* refers to individuals employed at the time of the survey. Self-employed individuals are excluded. An *offer* of ESI means the individual's employer offers health insurance coverage to its employees and the individual is eligible for such coverage. The statistical significance of changes reported in this table is indicated as follows: ***=1% level, **=5% level, and *=10% level. See **Appendix D** for information about statistical significance tests.

Employment and ESI Offer and Coverage Rates, by Demographic Groupings

Workers' ESI coverage rates vary across demographic groups. To some extent, that variation correlates with demographic differences in industry-level employment.[32] For example, whereas 73.9% of all workers (aged 19-64) had ESI coverage in 2019, only 56.1% of employed Hispanic workers and 40.9% of workers without a high school diploma had coverage.[33] In terms of employment, Hispanic workers are disproportionately employed in leisure and hospitality sector jobs and construction jobs—industries with relatively low ESI offer rates (**Table 1**)—as are workers with lower educational attainment.[34] Employment losses also varied across worker groups: Hispanic female workers, non-Hispanic Black female workers, and workers with lower levels of educational attainment, in particular, lost work disproportionately.[35] These patterns suggest pandemic-related job loss could exacerbate existing health insurance disparities among demographic groups.[36] Against this backdrop, the following section examines how ESI offer and coverage rates changed between March 2019 and March 2021 for adults and for workers in selected demographic groups—namely, race and Hispanic ethnicity, sex, and educational attainment.

[32] Some estimates discussed in this section are shown in data tables (where so, table numbers are referenced), and others are not.

[33] Due to sample size limitations, this report groups all individuals of Hispanic ethnicity into a single "Hispanics" group. However, some studies have shown that labor market and other outcomes can vary across persons of different origins. For example, research by the Center for Economic Policy and Research reveals that workers of Puerto Rican descent had an unemployment rate of 11.2% in 2014, whereas this rate was 7.3% for Ecuadorians and 4% for Uruguayans. Cherrie Bucknor, *Hispanic Workers in the United States*, Center for Economic and Policy Research, 2016, at https://cepr.net/images/stories/reports/hispanic-workers-2016-11.pdf. Similar variations among subgroups exist among all working-age adults: whereas overall 62.2% of persons aged 19-64 had ESI coverage in 2019, only 46.3% of Hispanic adults and less than 30% of adults without a high school diploma had coverage.

[34] By comparison, 77.9% of non-Hispanic workers and 89.2% of workers who held advanced degrees had ESI coverage in 2019. Non-Hispanic workers and workers with advanced degrees were largely employed in industries with above-average ESI offer rates in that year.

[35] For example, CRS calculations indicate that whereas overall female employment was 4.6% lower in March 2021 when compared with March 2019, Hispanic female employment and non-Hispanic Black female employment declined by 4.9% and 6.6%, respectively, over the same period. Employment declined by more than 16% for workers without a high school diploma, whereas it *increased* by 3.6% for workers with an advanced degree. The impacts of pandemic on female employment in 2020 are discussed in CRS Report R46632, *The COVID-19 Pandemic: Labor Market Implications for Women*.

[36] For example, analysis published in September 2020 by Avalere, a health care consulting firm, predicted the loss of ESI would impact Black and Hispanic populations disproportionately, due to higher rates of job loss and greater obstacles to obtaining insurance coverage through other channels. Robin Duddy-Tenbrunsel et al., *COVID-19 Projected to Worsen Racial Disparities in Health Coverage*, Avalere, September 2020, at https://avalere.com/press-releases/covid-19-projected-to-worsen-racial-disparities-in-health-coverage.

ESI Offer and Coverage Rates by Race and Hispanic Ethnicity

Employment declined between March 2019 and March 2021 for Hispanic workers (4.1% loss) and for workers in each racial group considered in this section: non-Hispanic White workers (4.9% loss), non-Hispanic Black workers (6.0% loss), and non-Hispanic Asian workers (2.7% loss).[37] Employment losses for Hispanic workers and non-Hispanic Black workers were driven largely by declines in female employment (4.9% loss and 6.6% loss, respectively).[38] Employment loss for each race and ethnicity group comprised both jobs that offer ESI (*ESI jobs*) and those that do not; however, ESI job loss was particularly pronounced for non-Hispanic Black workers.

Changes in ESI Offer Rates for Workers

In both March 2019 and March 2021, Hispanic workers had the lowest ESI offer rates and non-Hispanic White workers had the highest ESI offer rates. ESI offer rates increased for all worker groups (Hispanic and non-Hispanic racial groups) as employment fell. As discussed in the previous section, ESI offer rates rise if the ESI share of employment loss is less than the initial ESI offer rate,[39] which was the case for each group of workers. Consequently, ESI offer rates rose to varying degrees between March 2019 and March 2021, despite marked loss in ESI jobs for some groups. About 60% of the reduction in employment for non-Hispanic Black workers comprised jobs that offered ESI. Comparatively and over the same time period, 46.9% of the reduction in jobs among non-Hispanic White working-age adults were jobs that offered ESI and about 40% of the reduction in employment among Hispanic working-age adults comprised jobs that offered ESI (**Table 3**). ESI employment *increased* modestly for non-Hispanic Asian workers (resulting in ESI jobs having a negative share of job loss [-0.9%], **Table 3**).

Table 3. ESI Offer Rates in March 2019 and March 2021 and ESI and Non-ESI Job Share of Employment Change, by Race and Hispanic Ethnicity

Race and Hispanic Ethnicity	ESI Offer Rate				Share of Total Employment Loss Between March 2019 and March 2021	
	2019	2021	Change		ESI Jobs	Non-ESI Jobs
Hispanic (any race)	61.8%	62.7%	0.9 pts		40.6%	59.4%
Non-Hispanic White	77.5%	79.1%	1.5 pts	***	46.9%	53.1%
Non-Hispanic Black	75.3%	76.3%	1.0 pts		60.3%	39.7%
Non-Hispanic Asian	74.8%	78.0%	3.3 pts	***	-0.9%	100.9%
Total	**74.0%**	**75.5%**	**1.5 pts**	***	**43.4%**	**56.6%**

[37] This report presents the following race and ethnicity groupings: non-Hispanic White only; non-Hispanic Black only; non-Hispanic Asian only; and Hispanic, any race. Groups such as non-Hispanic White only, non-Hispanic Black only, and non-Hispanic Asian only represent individuals who reported to the Census Bureau that they are of a single race (i.e., not mixed-race) and are not of Hispanic origin. Because Hispanic persons can be of any race, CRS also examined the employment and health insurance trends of Black only persons (inclusive of Black Hispanics) and Asian only persons (inclusive of Asian Hispanics). The ESI coverage and offer trends for these groupings did not present trends that were materially distinct from what is presented in this report.

[38] **Appendix C** highlights changes in ESI coverage from March 2019 to March 2021 by race and Hispanic ethnicity and sex.

[39] As noted, this is because the remaining jobs with ESI offers will form a larger share of the new (lower) employment level. ESI offer rate changes also are conditional on the base level ESI offer rate.

Source: CRS estimates using the CPS-ASEC and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. Rates among employed workers aged 19-64 years (excluding self-employed workers). Non-Hispanic White, non-Hispanic Black, and non-Hispanic Asian groups represent individuals who reported to the Census Bureau that they were of a single race (i.e., not mixed-race) and were not of Hispanic origin. An *offer* ESI means the individual's employer offers health insurance coverage to its employees and the individual is eligible for such coverage. The statistical significance of changes reported in this table is indicated as follows: ***=1% level, **=5% level, and *=10% level. See **Appendix D** for information about statistical significance tests. The share of total employment loss for ESI jobs represents the amount of change in ESI jobs relative to the total job loss (i.e., the summation of changes in ESI jobs and non-ESI jobs) for the reference group.

The loss of ESI-offering jobs for the different racial and Hispanic ethnicity groups reflects, in part, changes in the industrial composition of employment brought about by the pandemic and the extent to which the workers' groups are concentrated in industries. In particular, the level of employment in the leisure and hospitality industry, a low ESI-offer industry, declined by 18% (non-Hispanic Asian workers) to 27% (non-Hispanic Black workers). At the same time, changes in public administration employment levels (a higher ESI-offer industry) varied by race and Hispanic ethnicity; employment in that industry increased by between 4% (non-Hispanic Asian workers) and 13% (Hispanic workers), mitigating the effect of jobs lost in low ESI-offer industries on overall offer rates to varying degrees.

Changes in ESI Coverage Rates

For employed workers in each group, the rise in ESI offer rates was met with a corresponding increase in ESI coverage (**Table 4**). For workers in aggregate and for some groups (i.e., Non-Hispanic White workers and Non-Hispanic Asian workers), the increase in coverage rates was smaller than the increase in offer rates. A smaller increase is not unexpected, as some workers may decline ESI offers for various reasons (e.g., they are receiving coverage through a spouse's plan, they consider the ESI to be too expensive, they prefer greater take-home pay).

Among the broader adult population (i.e., persons aged 19 to 64, regardless of employment status), ESI coverage declined for most groups (rates increased for non-Hispanic Asian adults). The coverage rate for non-Hispanic Black adults had the largest percentage-point decline. As discussed earlier, large losses in employment, particularly jobs that offered ESI, are expected to bring down ESI coverage among the broader adult population if formerly employed workers (and their dependents) lose their coverage and do not reenroll under another plan (e.g., through an ESI plan offered through their spouse's or parent's employer). ESI losses in a population also can occur for other reasons affecting the employed, such as fewer employers offering health insurance and fewer employees being eligible for, or electing, such coverage.

Table 4. ESI Coverage Rates in March 2019 and March 2021, by Hispanic Ethnicity and Selected Racial Groups

Race and Hispanic Ethnicity	Working-Age Adults				Employed Working-Age Adults			
	2019	2021	Change		2019	2021	Change	
Hispanic (any race)	46.3%	45.9%	-0.4 pts		56.1%	57.6%	1.5 pts	
Non-Hispanic White	69.1%	68.3%	-0.8 pts	*	80.4%	81.2%	0.7 pts	*
Non-Hispanic Black	53.9%	52.7%	-1.1 pts		69.2%	70.3%	1.1 pts	
Non-Hispanic Asian	63.7%	66.7%	3.0 pts	**	74.9%	78.0%	3.1 pts	**
Total	**62.2%**	**61.6%**	**-0.6 pts**	*	**73.9%**	**74.9%**	**1.0 pts**	***

Source: CRS estimates using the CPS-ASEC (ESI coverage) and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. Rates among persons aged 19-64, excluding self-employed persons. Non-Hispanic White, non-Hispanic Black, and non-Hispanic Asian groups represent individuals who reported to the Census Bureau that they were of a single race (i.e., not mixed-race) and were not of Hispanic origin. *Employed* refers to currently employed individuals but excludes self-employed individuals. The statistical significance of changes reported in this table is indicated as follows: ***=1% level, **=5% level, and *=10% level. See **Appendix D** for information about statistical significance tests.

ESI Offer and Coverage Rates, by Sex

Female employment declined markedly relative to male employment early in the pandemic.[40] To a large degree, female employment recovered during the pandemic, such that losses over the March 2019-March 2021 period for females and males were both 4.6%.[41] Despite a common employment loss rate over the analysis period, the composition of employment loss (with regard to jobs that offer ESI and those that do not) differed by sex.

Changes in ESI Offer Rates for Workers

For both females and males, ESI jobs lost as a share of total employment loss were below the ESI offer rate in March 2019; consequently, ESI offer rates rose for each group (**Table 5**). However, jobs with ESI offers (*ESI jobs*) made up a much larger share of employment loss for males than for females. Specifically, ESI jobs made up about 60% of losses for males and about 26% of losses for females. As a result, the increase in the ESI offer rate for female workers (2.3 percentage points) was larger than that for males (0.7 percentage points).

Table 5. ESI Offer Rates in March 2019 and March 2021 and the ESI and non-ESI Job Share of Employment Change, by Sex

Sex	ESI Offer Rate				Share of Total Employment Loss Between March 2019 and March 2021	
	2019	2021	Change		ESI Jobs	Non-ESI Jobs
Female	72.6%	74.8%	2.3 pts	***	25.6%	74.4%
Male	75.4%	76.2%	0.7 pts	**	60.2%	39.8%
Total	**74.0%**	**75.5%**	**1.5 pts**	***	**43.4%**	**56.6%**

Source: CRS estimates using the CPS-ASEC and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. Rates among employed workers aged 19-64 years, excluding self-employed workers. An *offer* of ESI means the individual's employer offers health insurance coverage to its employees and the individual is eligible for such coverage. The statistical significance of changes reported in this table is indicated as follows: ***=1% level, **=5% level, and *=10% level. See **Appendix D** for information about statistical significance tests. The share of total employment loss for ESI jobs represents the amount of change in ESI jobs relative to the total job loss (i.e., the summation of changes in ESI jobs and non-ESI jobs) for the reference grouping.

[40] Female employment declined by 17.8% between January 2020 and April 2020. Male employment declined by 14.3% during that time. See CRS Report R46632, *The COVID-19 Pandemic: Labor Market Implications for Women*.

[41] These rates describe losses for females and males in aggregate. Some subgroups (such as female persons of color) had higher rates of job loss over this period. For more information, see **Appendix A** and **Appendix C**.

Changes in ESI Coverage Rates

As ESI offer rates increased among employed females and males from March 2019 to March 2021, so did ESI coverage rates (**Table 6**). Coverage increased for employed females by 1.3 percentage points and for employed males by 0.7 percentage points during that period. Among the broader adult population (i.e., considering employed and non-employed adults aged 19-64), ESI coverage declined by less than a percentage point for both groups.

Table 6. ESI Coverage Rates in March 2019 and March 2021, by Sex

Sex	All Working-Age Adults				Employed Working-Age Adults			
	2019	2021	Change		2019	2021	Change	
Female	62.0%	61.5%	-0.5 pts		74.1%	75.4%	1.3 pts	***
Male	62.4%	61.6%	-0.8 pts	*	73.8%	74.5%	0.7 pts	*
Total	**62.2%**	**61.6%**	**-0.6 pts**	*	**73.9%**	**74.9%**	**1.0 pts**	***

Source: CRS estimates using CPS-ASEC (ESI coverage) and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. Rates among persons aged 19-64 years and those reporting their sex. *Employed* refers to currently employed individuals but excludes self-employed individuals. The statistical significance of changes reported in this table is indicated as follows: ***=1% level, **=5% level, and *=10% level. See **Appendix D** for information about statistical significance tests.

ESI Offer and Coverage Rates by Educational Attainment

The 4.6% decline in employment between March 2019 and March 2021 was driven by large losses among less-educated workers. Employment declined by about 16% among workers without a high school diploma and by about 8% for both workers with a high school diploma and workers with some postsecondary education but no bachelor's degree. Employment increased by nearly 4% for workers with an advanced degree, and the change in employment for those with a bachelor's degree (2.2%) was not significant at the 90% level.

Changes in ESI Offer Rates for Workers

Workers who had not completed high school had the lowest ESI offer rates in both March 2019 and March 2021, and workers with advanced degrees had the highest offer rates in both years. The industry composition of employment across educational attainment groups contributed to these patterns. For example, workers with lower levels of educational attainment (particularly females) are more concentrated in leisure and hospitality jobs and in wholesale and retail trade jobs.[42] Workers with higher levels of education have relatively high shares of employment in education and health services jobs and professional and business services jobs, both of which had above-average ESI offer rates in March 2019 and March 2021.

Despite large losses in employment, ESI job loss was more or less proportional to ESI offer rates in March 2019 for workers with a high school degree or less; consequently, ESI offer rates for these workers did not change discernably (**Table 7**). For workers with some postsecondary education (but no bachelor's degree), the ESI job share of employment loss was below the ESI offer rate in March 2019. ESI jobs (and total employment) *increased* for workers with a

[42] Males with lower levels of educational attainment have relatively high shares of employment in manufacturing, which was a high ESI-offer industry in March 2019 and March 2021.

bachelor's degree or higher, pushing up offer rates for these workers over the March 2019 to March 2021 period.

Table 7. ESI Offer Rates in March 2019 and March 2021 and the ESI and Non-ESI Job Share of Employment Change, by Educational Attainment

Educational Attainment	ESI Offer Rate				Share of Total Employment Loss Between March 2019 and March 2021	
	2019	2021	Change		ESI Jobs	Non-ESI Jobs
No High School Diploma	49.6%	49.9%	0.2 pts		48.6%	51.4%
High School Diploma Only	68.2%	68.2%	0.0 pts		67.9%	32.0%
Vocational Education Degree or Some College (including an Associate's Degree)	71.2%	72.3%	1.1 pts	*	59.4%	40.6%
Bachelor's Degree (No Advanced Degree)	81.9%	83.1%	1.2 pts	**	149.4%	-49.4%
Advanced Degree	88.1%	89.3%	1.3 pts	**	114.6%	-14.5%
Total	**74.0%**	**75.5%**	**1.5 pts**	****	**43.4%**	**56.6%**

Source: CRS estimates using the CPS-ASEC and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. Rates among employed workers aged 19-64 years (excluding self-employed workers), who reported their educational attainment. An *offer* of ESI means the individual's employer offers health insurance coverage to its employees and the individual is eligible for such coverage. The statistical significance of changes reported in this table is indicated as follows: ***=1% level, **=5% level, and *=10% level. See **Appendix D** for information about statistical significance tests. The share of total employment loss for ESI jobs represents the amount of change in ESI jobs relative to the total job loss (i.e., the summation of changes in ESI jobs and non-ESI jobs) for the reference group.

Changes in ESI Coverage Rates

Among employed workers, ESI coverage rates increased between March 2019 and March 2021 to a measurable extent for workers with a bachelor's degree (1.1 percentage point increase; see **Table 8**). Among the broader adult population (i.e., persons aged 19 to 64, regardless of employment status), ESI coverage declined for persons with only a high school diploma (2.6 percentage point decrease) and some postsecondary education (1.8 percentage point decrease). Coverage rates among persons with a bachelor's degree or higher were relatively stable during this period.

Table 8. ESI Coverage Rates in March 2019 and March 2021, by Educational Attainment

Educational Attainment	Working-Age Adults				Employed Working-Age Adults		
	2019	2021	Change		2019	2021	Change
No High School Diploma	29.2%	27.9%	-1.3 pts		40.9%	39.7%	-1.2 pts
High School Diploma Only	52.5%	50.0%	-2.6 pts	***	65.5%	64.8%	-0.7 pts

Vocational Education Degree or Some College (including an associate's degree)	63.5%	61.7%	-1.8 pts	***	73.6%	73.7%	0.1 pts	
Bachelor's Degree (no advanced degree)	74.9%	75.6%	0.6 pts		83.3%	84.4%	1.1 pts	*
Advanced Degree	82.2%	82.1%	-0.1 pts		89.2%	90.1%	0.9 pts	

Source: CRS estimates using the CPS-ASEC (ESI coverage) and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. Rates among persons aged 19-64 years and those reporting educational attainment. *Employed* refers to currently employed individuals but excludes self-employed individuals. *High School Diploma Only* includes those with a high school diploma or equivalent. *Vocational Education Degree of Some College* includes those with some college but no degree, those with an associate's degree from an occupation/vocation program, and those with an associate's degree from an academic program. *Advanced Degree* includes those with a master's degree (e.g., MBA), professional school degree (e.g., MD), or doctorate degree (e.g., PhD). The statistical significance of changes reported in this table is indicated as follows: ***=1% level, **=5% level, and *=10% level. See **Appendix D** for information about statistical significance tests.

Summary of Findings

CRS estimates that over the March 2019-March 2021 period, employment levels fell from 85.0% of the working-age adult population to 82.9% (a decrease of 6.0 million jobs). During this period, the percentage of all working-age adults enrolled in ESI fell, whereas among *employed* working-age adults, however, ESI coverage rates increased. The analysis in this report suggests that the rise in the coverage rate among employed adults is in part due to attrition; that is, the ESI coverage rate increased among workers because a sufficiently large share of workers *without* ESI coverage lost work and therefore were no longer included in the calculation.[43]

Industry patterns appear to contribute to the overall loss of ESI-offering jobs. That is, ESI offer rates and coverage rates vary across industries, and some sectors were affected by pandemic-related job loss more than others. The four industries with the lowest ESI offer rates in 2019 (all of which were below the overall ESI rate) account for nearly half of the decrease in employment between March 2019 and March 2021. However, job loss during the pandemic was not exclusive to those without ESI offers; overall and within industries, employment declined to varying degrees among both jobs that offered ESI and those that did not. For example, in two of the three industries with the largest declines in employment levels between March 2019 and March 2021, ESI jobs made up 57.6% of the decrease (leisure and hospitality industry) and 80% of the decrease (education and health services), respectively.

ESI offer and coverage rates changed to varying degrees for workers and working-age adults in selected demographic groups. These changes appear related to demographic differences in industry-level employment, and the extent to which each industry was affected by the pandemic. Notably, Hispanic workers, non-Hispanic Black workers, and workers without a high school diploma had lower ESI coverage than other groups in 2019. Between 2019 and 2021, however, statistically significant increases in ESI coverage for employed working-age adults were observed only for non-Hispanic White workers, non-Hispanic Asian workers, and workers with a bachelor's degree. These patterns raise concerns that pandemic-related job loss may have exacerbated existing health insurance disparities among demographic groups.

[43] Of the estimated 6.0 million jobs lost between March 2019 and March 2021, roughly 57% (3.4 million) were jobs that did not include an offer of ESI coverage.

Appendix A. Additional Tables: Coverage Rates by Age Group

Table A-1. Employer-Sponsored Insurance (ESI) Coverage Rates in March 2019 and March 2021, by Age Group

Age (years)	All Persons (any age)				Employed Workers (aged 16 and older)								Employed Workers with ESI (aged 16 and older)			
	ESI Coverage				ESI Coverage				ESI Policyholder				ESI Policyholder			
	2019	2021	Change		2019	2021	Change		2019	2021	Change		2019	2021	Change	
18 and under	53.8%	53.3%	-0.4 pts		60.7%	62.5%	1.8 pts		2.4%	1.8%	-0.5 pts		3.9%	2.9%	-1.0 pts	
19 to 64	62.2%	61.6%	-0.6 pts	*	73.9%	74.9%	1.0 pts	***	56.1%	57.2%	1.1 pts	***	75.9%	76.4%	0.5 pts	*
65 and older	24.1%	22.4%	-1.7 pts	***	46.5%	50.8%	4.3 pts	***	39.8%	43.7%	3.9 pts	***	85.6%	86.1%	0.5 pts	
Total	**54.0%**	**52.9%**	**-1.1 pts**	***	**72.1%**	**73.3%**	**1.2 pts**	***	**54.0%**	**55.2%**	**1.2 pts**	***	**74.9%**	**75.3%**	**0.4 pts**	

Source: Congressional Research Service estimates using the Current Population Survey Annual Social and Economic Supplement (CPS-ASEC) for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. ESI policyholder rates describe the share of employed workers in each age group who report they are the policyholder for an ESI plan. The 18 and under age group describes persons aged 16-18 for ESI policyholder and ESI coverage. Self-employed workers are excluded from the *employed workers* group. The statistical significance of changes reported in this table is indicated as follows: ***=1% level, **=5% level, and *=10% level. See **Appendix D** for information about statistical significance tests.

Appendix B. Additional Tables: Changes in Number of Employees With and Without Offer of ESI, by Selected Characteristics

Table B-1. Change in Total Number of Working-Age Employees With and Without Offer of Employer-Sponsored Insurance (ESI) Between March 2019 and March 2021, by Industry

(ordered by total change in employment, in thousands)

Industry	Change in Number of Employees with Offer of ESI	Change in Number of Employees Without Offer of ESI	Total Change In Number of Employees
Leisure and Hospitality	-1,474	-1,085	-2,559
Manufacturing	-1,158	-288	-1,446
Educational and Health Services	-196	-1,043	-1,239
Other Services	-305	-260	-565
Professional and Business Services	-176	-160	-336
Wholesale and Retail Trade	+252	-378	-126
Construction	-55	-52	-107
Agriculture, Forestry, Fishing, and Hunting	-36	-71	-107
Mining	-96	-6	-102
Information	-52	+11	-41
Transportation and Utilities	-40	+121	+80
Financial Services	+281	-142	+139
Public Administration	+441	-51	+390
Total	**-2,614**	**-3,406**	**-6,019**

Source: Congressional Research Service (CRS) estimates using the Current Population Survey Annual Social and Economic Supplement (CPS-ASEC) and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. Rates among persons aged 19-64 years and those reporting employed industry. *Employees* refers to currently employed individuals but excludes self-employed individuals. An *offer* of ESI means the individual's employer offers health insurance coverage to its employees and the individual is eligible for such coverage.

Table B-2. Change in Total Number of Employees With and Without Offer of ESI Between March 2019 and March 2021, by Hispanic Ethnicity and Selected Racial Groups

(ordered by total change in employment, in thousands)

Race and Hispanic Ethnicity	Change in Number of Employees with Offer of ESI	Change in Number of Employees Without Offer of ESI	Total Change In Number of Employees
Non-Hispanic White	-1,769	-2,006	-3,775
Hispanic (any race)	-404	-592	-996
Non-Hispanic Black	-571	-376	-947
Non-Hispanic Asian	+3	-352	-349
Total	**-2,742**	**-3,325**	**-6,067**

Source: CRS estimates using the CPS-ASEC and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. Rates among persons aged 19-64 years. Non-Hispanic White, non-Hispanic Black, and non-Hispanic Asian groups represent individuals who reported to the Census Bureau that they were of a single race (i.e., not mixed-race) and were not of Hispanic origin. Total does not include individuals who reported other races or multiple races. *Employees* refers to currently employed individuals but excludes self-employed individuals. An *offer* of ESI means the individual's employer offers health insurance coverage to its employees and the individual is eligible for such coverage.

Table B-3. Change in Total Number of Employees With and Without Offer of ESI Between March 2019 and March 2021, by Sex

(ordered by total change in employment, in thousands)

Sex	Change in Number of Employees with Offer of ESI	Change in Number of Employees Without Offer of ESI	Total Change In Number of Employees
Male	-1,868	-1,234	-3,101
Female	-746	-2,172	-2,918
Total	**-2,614**	**-3,406**	**-6,019**

Source: CRS estimates using the CPS-ASEC and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. Rates among persons aged 19-64 years and those reporting sex. *Employees* refers to currently employed individuals but excludes self-employed individuals. An *offer* of ESI means the individual's employer offers health insurance coverage to its employees and the individual is eligible for such coverage.

Table B-4. Change in Total Number of Employees With and Without Offer of ESI Between March 2019 and March 2021, by Educational Attainment

(ordered by the total change in employment, in thousands)

Educational Attainment	Change in Number of Employees with Offer of ESI	Change in Number of Employees Without Offer of ESI	Total Change In Number of Employees
Vocational Education Degree or Some College (including an associate's degree)	-1,906	-1,301	-3,207

Educational Attainment	Change in Number of Employees with Offer of ESI	Change in Number of Employees Without Offer of ESI	Total Change In Number of Employees
High School Diploma Only	-1,931	-911	-2,843
No High School Diploma	-722	-765	-1,487
Bachelor's Degree (no advanced degree)	+889	-294	+595
Advanced Degree	+1,057	-134	+922
Total	**-2,614**	**-3,406**	**-6,019**

Source: CRS estimates using the CPS-ASEC and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. Rates among persons aged 19-64 years and those reporting educational attainment. *Employees* refers to currently employed individuals but excludes self-employed individuals. An *offer* of ESI means the individual's employer offers health insurance coverage to its employees and the individual is eligible for such coverage.

Table B-5. Change in Total Number of Employees With and Without Offer of ESI Between March 2019 and March 2021, by Race and Hispanic Ethnicity and Sex

(ordered by the total change in employment, in thousands)

Industry	Change in Number of Employees with Offer of ESI	Change in Number of Employees Without Offer of ESI	Total Change In Number of Employees
Non-Hispanic White Male	-1,383	-637	-2,021
Non-Hispanic White Female	-386	-1,368	-1,754
Non-Hispanic Black Female	-330	-235	-565
Hispanic (any race) Female	-109	-396	-505
Hispanic (any race) Male	-296	-195	-491
Non-Hispanic Black Male	-241	-140	-382
Non-Hispanic Asian Male	+33	-229	-196
Non-Hispanic Asian Female	-30	-122	-152
Total	**-2,742**	**-3,325**	**-6,067**

Source: CRS estimates using the CPS-ASEC and the CPS-ASEC Research Files (ESI offers in 2019) for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. Non-Hispanic White, non-Hispanic Black, and non-Hispanic Asian groups represent individuals who reported to the Census Bureau that they were of a single race (i.e., not mixed-race) and were not of Hispanic origin. Total does not include individuals who reported other races or multiple races. *Employees* refers to currently employed individuals aged 19-64 but excludes self-employed individuals. An *offer* of ESI means the individual's employer offers health insurance coverage to its employees and the individual is eligible for such coverage.

Appendix C. Employer-Sponsored Insurance (ESI) Coverage Rates by Race and Hispanic Ethnicity and Sex and by Educational Attainment and Sex

Table C-1 disaggregates the change in ESI coverage rates for the broader population of adult males and females (employed and not-employed adults) by race and Hispanic ethnicity. For both males and females, ESI coverage rates were lowest for Hispanic adults and non-Hispanic Black adults in March 2019 and in March 2021. The largest drop in coverage occurred for non-Hispanic White males and non-Hispanic Black females. For both females and males, coverage rates increased among non-Hispanic Asian adults.[44]

Table C-1. Employer-Sponsored Insurance (ESI) Coverage Rates, by Race and Hispanic Ethnicity and Sex, March 2019 and March 2021

Race and Hispanic Ethnicity	Male				Female		
	2019	2021	Change		2019	2021	Change
Hispanic (any race)	46.4%	46.2%	-0.3 pts		46.1%	45.6%	-0.5 pts
Non-Hispanic White	69.4%	68.1%	-1.4 pts	**	68.7%	68.5%	-0.3 pts
Non-Hispanic Black	53.1%	52.9%	-0.2 pts		54.5%	52.6%	-1.9 pts
Non-Hispanic Asian	64.0%	67.9%	3.9 pts	**	63.4%	65.6%	2.1 pts

Source: Congressional Research Service (CRS) estimates using Current Population Survey Annual Social and Economic Supplement (CPS-ASEC) for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. Rates among persons aged 19-64. Self-employed workers excluded. Non-Hispanic White, non-Hispanic Black, and non-Hispanic Asian groups represent individuals who reported to the Census Bureau that they were of a single race (i.e., not mixed-race) and were not of Hispanic origin. The statistical significance of changes reported in this table is indicated as follows: ***=1% level, **=5% level, and *=10% level. See **Appendix D** for information about statistical significance tests.

Table C-2 disaggregates the change in ESI coverage rates for the broader adult population (employed and not-employed adults) by educational attainment and sex. For both females and males, ESI coverage rates increased with levels of educational attainment in both March 2019 and March 2021. In March 2019, females with less than a bachelor's degree had lower ESI coverage rates than males in the same education groups and females with a bachelor's or advanced degree had higher coverage rates than males in the same education groups. However, between 2019 and 2021, female ESI coverage declined or remained mostly stable in each education category, whereas male coverage rates fell only for those with less than a bachelor's degree. Consequently, in March 2021, the ESI female coverage rates were below male rates for each education category except advanced degrees.[45]

[44] Changes for each female group (and some male groups) were not significant at the 90% level of confidence. One limitation of disaggregating coverage rates along three dimensions (sex, race, and Hispanic ethnicity) is that the survey samples for minority groups (e.g., non-Hispanic Black females) are small, which limits the precision of estimated changes in rates.

[45] With the exception of advanced degrees, the difference in female and male coverage rates were significant at the 95% confidence level or higher for each education group.

Table C-2. ESI Coverage by Educational Attainment and Sex, March 2019 and March 2021

Educational Attainment	Male				Female			
	2019	2021	Change		2019	2021	Change	
No High School Diploma	31.2%	28.9%	-2.3 pts	*	26.7%	26.7%	-0.1 pts	
High School Diploma Only	55.0%	52.0%	-3.0 pts	***	49.6%	47.5%	-2.1 pts	***
Vocational Education Degree or Some College (including an associate's degree)	64.9%	63.0%	-1.8 pts	**	62.3%	60.5%	-1.8 pts	***
Bachelor's Degree (no advanced degree)	74.6%	76.4%	1.7 pts	**	75.2%	74.9%	-0.3 pts	
Advanced Degree	81.0%	81.6%	0.5 pts		83.2%	82.5%	-0.6 pts	

Source: CRS estimates using CPS-ASEC for 2019 and 2021.

Notes: Numbers may not sum precisely due to rounding. Rates among those aged 19-64 and reporting educational attainment. Self-employed workers excluded. *High School Diploma Only* includes those with a high school diploma or equivalent. *Vocational Education Degree of Some College* includes those with some college but no degree, those with an associate's degree from an occupation/vocation program, and those with an associate degree from an academic program. *Advanced Degree* includes those with a master's degree (e.g., MBA), professional school degree (e.g., MD), or doctorate degree (e.g., PhD). The statistical significance of changes reported in this table is indicated as follows: ***=1% level, **=5% level, and *=10% level. See **Appendix D** for information about statistical significance tests.

Appendix D. Statistical Significance of the Estimated Change in Health Insurance and Employment Indicators

The statistical significance of estimated changes in employer-sponsored health insurance offers and coverage between March 2019 and March 2021 is reported at the 10%, 5% and 1% levels.[46] Such statistical tests require standard error estimates. However, standard methods for incorporating the effect of survey design on variance (and thus standard error) estimates cannot be applied to Current Population Survey (CPS) Annual Social and Economic Supplement (ASEC) data, because the Census Bureau does not publish strata and cluster information in the public use files. This missing information is problematic because stratification and clustering have been shown to affect variance estimates. In general, stratification results in efficiency gains (smaller standard errors) to the extent that it produces a sample with better coverage of subgroups than a simple random draw. Clustering, however, tends to increase standard errors due to intra-cluster correlation (i.e., outcomes and characteristics within a given geographic cluster will tend to be correlated).[47] In theory, when survey design involves both stratification and clustering, the net effect on standard errors is ambiguous. However, in practice, the efficiency gains from stratification tend to be quite small when compared with losses due to clustering, with the net effect of larger standard errors (relative to simple random sample). As a result, failure to account for the complex survey design used by the Census Bureau can result in downward biased standard errors.[48] To address these issues, the Congressional Research Service (CRS) calculated standard errors using replicate weights provided by the Census Bureau, which provide needed information about the survey's complex sample design, and the successive difference replication (SDR) method in the statistical software program Stata.[49]

In some instances, significance levels are similarly reported for changes in employment levels between March 2019 and March 2021, based on CPS monthly data. The Census Bureau does not provide replicate weights for the basic monthly files. CRS attempted to minimize the (downward) estimated variance bias by creating proxy variables for the strata and clusters employed in the CPS design. To do so, CRS followed methods developed by the Center for Economic and Policy Research.[50]

[46] Significance at the 5% level indicates a 5% risk of concluding that an indicator (such as ESI offers) changed between 2019 and 2021 when there is no actual change.

[47] A helpful discussion of the effects of stratification and clustering on standard errors is in Dean Jolliffe, "Estimating Sampling Variance from the Current Population Survey: A Synthetic Design Approach to Correcting Standard Errors," *Journal of Economic and Social Measurement*, vol. 28, no. 4 (2002/2003), pp. 239-261.

[48] An illustration using CPS-ASEC data to estimate health insurance coverage is in Michael Davern et al., "Unstable Inferences? An Examination of Complex Survey Sample Design Adjustments Using the Current Population Survey for Health Services Research," *Inquiry*, vol. 43, no. 3 (Fall 2006), pp. 283-297.

[49] Successive difference replication methods are documented in Robert E. Fay and George F. Train, "Aspects of Survey and Model-Based Postcensal Estimation of Income and Poverty Characteristics for States and Counties," *American Statistical Association, Proceedings of the Government Statistics Section*, 1995, pp. 154-159, at https://www.census.gov/library/working-papers/1995/demo/fay-01.html.

[50] These methods are described at Center for Economic and Policy Research (CEPR) data, "CPS Basic FAQ," at https://ceprdata.org/cps-uniform-data-extracts/cps-basic-programs/cps-basic-faq.

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