Technical Appendix
March 2020 CPS Auxiliary Data

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Technical Appendix: March 2020 CPS Auxiliary Data

Cathi Callahan and Rodelle Williams

Actuarial Research Corporation

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Overview of the 2020 CPS Auxiliary Data

The Current Population Survey Annual Social and Economic Supplement (CPS ASEC) (also called the March CPS) is the data source most often used for estimating health insurance coverage in the United States. The March CPS underwent major enhancements and revisions for 2014, but prior to 2019, only some of the changes had been released to the research community, and none had been added to the basic March dataset released by Census.[1] The 2019 ASEC was the first production file to contain the reformatted data. However, several important characteristics of employer sponsored health insurance (ESI) are still not captured by the survey. To address these limitations, the U.S. Department of Labor (DOL) Employee Benefits Security Administration (EBSA) annually produces an auxiliary data file, which contains recoded and imputed employment and health insurance variables, and a bulletin with summary tables based on the enhanced data.

While last year's auxiliary data file represented a break in time series and estimates from it should not be compared to previous years, the 2020 data was expected to allow for two years of consistent data. The emergence of the COVID-19 public health emergency in the spring of 2020 occurred as interviews began for the ASEC. Specifically, interviews for the ASEC began on March 15, 2020 and, due to COVID-19, were performed via telephone only rather than a combination of phone and in-person. This resulted in a higher non-response rate compared to prior years, and as such, multi-year comparisons are not possible at this time.[2]

For the March 2020 Auxiliary Data, we have updated our data sources to reflect the newest available information.[3] This technical appendix describes the current imputations and edits performed in order to provide detailed estimates of ESI for calendar year (CY) 2019.

The imputations performed can be broken down into two main categories: (1) access to coverage and (2) coverage characteristics. The access to coverage category captures whether an employer provides coverage, as well as details about those that do, including employer size (number of employees) and sector (private, Federal, or state/local). Coverage characteristics include funding type, plan type, and estimates of retiree and COBRA coverage. Starting with the CY 2010 Auxiliary Data, we imputed a variable for actuarial value, the average proportion of covered charges paid as benefits by insurance, for active employees with health insurance in their own name.

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[1] In prior years, the research releases included (a) a single point-in-time coverage variable ("Was person covered at time of questionnaire"); (b) a clarification on type of coverage (employer sponsored, individual private, or other), if coverage is provided from outside the household; and (c) point-in-time variables on employer offers of health insurance coverage for those who were employed but did not have employer sponsored coverage. For March 2019 (and 2020), the data release included the expanded set of questions as asked.

[2] Non-Response Rates: https://www.census.gov/programs-surveys/cps/technical-documentation/methodology/non-response-rates.html; In May of 2021, Census released a working paper (Coronavirus Infects Surveys, Too: Survey Nonresponse Bias and the Coronavirus Pandemic. Rothbaum, Jonathan. Bee, Adam. U.S. Census Bureau. May 3, 2021. https://www.census.gov/content/dam/Census/library/working-papers/2020/demo/sehsd-wp2020-10.pdf) that noted non-respondents tended to be more strongly associated with income and the patterns were different by education, Hispanic origin, nativity and citizenship when compared to respondents. A file with experimental weights was also released, which when tabulated show a revision to the income distribution from the original release. At this point, however, Census classifies the non-response adjusted weights as experimental and noted that there are no plans to incorporate them into the health insurance estimates, and as such we are not incorporating these weights into this analysis.

[3] This includes updated data from Census which, due to a processing error, contained edits to the variables for sector and size of employment for workers. This updated file, incorporated into the official CPS release in April of 2021, resulted in the distribution of workers by sector and size similar to that found in the prior two years. For this reason, and because these variables are used extensively in our imputations, our analysis has been updated and adjusted to use these more recent work force characteristics.

In general, we imputed insurance and employment characteristics for employees and other persons with employer sponsored insurance coverage in their own name. ESI dependents were assigned the characteristics of the primary policyholder (when that person could be found). A link for one policyholder was maintained for each dependent on the March CPS file, including ESI policyholders who were also dependents. Previous Auxiliary Datasets allowed for two policyholder links, but that information is no longer available in the survey. A second variable for both size and sector providing coverage is still included for those with ESI as both a policyholder and a dependent. In addition, Federal and state-based marketplace coverage was included as reported on the CPS dataset (unedited).

Our starting data set was the March 2020 CPS. Below is a list of enhancements made and variables added to the Auxiliary Dataset.

- Source of coverage and employer offers of coverage: While the March CPS asks whether insurance coverage is provided by an employer, it does not distinguish whether the coverage is from a current or former employer. This distinction is imputed using the three most recent years (2016–2018) of data from the Medical Expenditure Panel Survey Household Component (MEPS-HC) and the MEPS Person Round Plan (PRPL) file. We assigned employer offers of coverage using information from the CPS point-in-time variable on employer offers of insurance, as released on the ASEC, expanded universe ASEC variables, or imputed using MEPS-HC data.[4]

- Sector and size providing coverage: We imputed employer sector and size for persons with coverage from a former employer using the three most recent years of data (2017–2019) from the Medical Expenditure Panel Survey Insurance Component (MEPS-IC), as provided by the Agency for Healthcare Research and Quality (AHRQ).

- Funding status, plan type, and COBRA/retiree partition: We used data from the 2017–2019 MEPS-IC along with partitions and trends from the Kaiser Family Foundation Employer Health Benefits Survey (EHBS) through 2019 to impute funding status and type of coverage for those with ESI and to partition coverage from a former employer into retiree and COBRA.

- Federal estimates: We used data by type of plan from the Office of Personnel Management (OPM) on employees (postal and non-postal), dependents, and annuitants covered under the Federal Employees Health Benefits (FEHB) Program to provide estimates at the Federal level.

- Actuarial values: We used health plan details from the 2019 EHBS, as well as historical data from prior EHBS surveys, data on plan benefits and out of pocket costs from the Health Care Cost Institute (HCCI) and Kaiser Family Foundation research to calculate actuarial values. We then imputed the values onto active policyholder records.

- Health spending: CPS introduced variables on out-of-pocket (OOP) spending and person-paid health insurance premiums with the March 2011 CPS. After examining these variables and comparing them to other sources, EBSA decided to include the OOP variable, beginning with the March 2012 Auxiliary Data and Health Insurance Coverage Bulletin. While the premium variable was revised to be consistent with health insurance in the 2019 ASEC, it continues to be potentially problematic when compared to other sources, and so is once again not included in the Auxiliary data.

- Union Sponsorship: We used data from the March CPS to identify current workers who obtain coverage through a union plan – directly for the portion of the sample asked this question, and as the basis of the imputation for the remaining workers. For private sector retirees age 65 and over, union probability cells, calculated from the Survey of Income and Program Participation (SIPP), 2008 Panel Wave 6 (2010) were enhanced and updated with trend data from the National Health Interview Survey (NHIS) for the 2010–2019 period and the SIPP for the 2010–2017 period, both of which had a lower level of detail available.[5] Conditional probabilities from the SIPP data were used to impute all other cases of union sponsorship to persons with coverage from a former employer. Data from the Health and Retirement Study (HRS) was also reviewed but ultimately discarded.

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[4] The Census Bureau released two sets of the "offers" variables.

[5] The more recent SIPP data (both 2008 and 2014 panels) did not have the same level of detail (explicit COBRA/ retiree questions as well as current employer vs former employer vs union) found in the earlier (2008 Panel, Wave 6 topical module) survey and needed for the imputation, but it was helpful to look at trends in union coverage.

- <u>Coverage through an Exchange:</u> The ASEC file contains information about whether other private insurance was obtained through the Federal or state marketplaces, and whether that coverage was subsidized.

Caution should be used when interpreting imputed variables for small sample sizes. Users should refrain from reporting statistics at the state level for imputed variables, such as funding, union coverage, plan types, and coverage from a former employer. It is also worth noting that the state estimates shown in the Health Bulletin, as well as any state tabulations generated by users from the Auxiliary data, differ from those reported by the Census Bureau ("Health Insurance Coverage in the United States: 2019"). For its state-level estimates, Census uses the American Community Survey (ACS), which has a larger sample size and can offer accurate estimates at a more granular level, such as small states and, in some cases, metropolitan statistical area.

Imputation Steps

The 12 steps we used to impute data are described in detail below.

Step 1: Imputing coverage from a current versus former employer

The March CPS captures whether insurance coverage is provided by an employer, but not whether the coverage is from the policyholder's current or former employer. To impute the employer status, MEPS-HC 2016–2018 data were averaged to calculate probabilities of coverage through a former versus a current employer. The results were enhanced with data from the 2019 MEPS-IC, which provides policyholder counts from non-Federal employers for those with active, retiree, and COBRA coverage. While the 2019 MEPS-IC data were used for private employers, a 3-year average (2016–2018) was used for state and local employers because single-year estimates were often delayed, and those that were available had large standard errors and a high level of variability. Data from the FEHB Program were used to provide estimates at the Federal level.

All March CPS records were initially checked to determine whether it was possible to accurately identify employer status (current versus former). If a person did not work at all during a year but had ESI in their own name, they were assigned coverage by a former employer. For all others, we needed to impute the source of the coverage. The 2016–2018 MEPS-HC was used to calculate probabilities of having coverage through a former employer by age, work status, and presence of retiree income. These relative probabilities were adjusted in order to reproduce the target likelihood of coverage from a former employer, based on the MEPS-IC. Similar to what was found in the 2019 CPS, the 2020 CPS contains a large number of non-workers with ESI in their own name, which must be categorized as "former employer coverage." Furthermore, for policyholders under age 40, this coverage must be categorized as COBRA. The prior target was thus allowed to deviate a small amount from the MEPS-IC indicated COBRA target, while maintaining the retiree percentage target. The COBRA percent is not inconsistent with that found on the MEPS PRPL file.

Valid codes for status were set as:

0 = No ESI
1 = Coverage through a former employer
2 = Coverage through a current employer

For CY 2019, this process resulted in 83.9 million ESI policyholders with coverage through their current employer, and 12.4 million with coverage through a former employer.

Exhibit 1 shows the results of the source of coverage imputation, for persons with ESI in their own name.

Exhibit 1: Persons with ESI in Own Name, by Employment Status
(in millions)

Employment Status	ESI Policyholders
Worked in past year	85.6
Coverage from current employer	83.9
Coverage from former employer	1.6
Did not work in past year	10.7
Total	**96.3**

Note: Components may not sum to total due to rounding.

Step 2: Imputing whether current employer offers ESI

While the March CPS captures whether individuals are covered by ESI, the public data does not reveal whether the respondent's employer offers insurance.[6] Imputing coverage through a current versus former employer (described in the previous step) creates a subset of persons who, by definition, have an employer that offered coverage.[7] For the subset of workers (ESI dependents only) who appear to have the same job as they had the previous year and are not insured through their employer (either in prior year or currently), we used the March 2020 point-in-time offer status to inform the assignment of offer/eligibility. Next, the expanded universe point-in-time offer status was used to assign status using similar logic. Details on the point-in-time variables, and how they were used to create the offer/eligibility assignments, are found in the "Revisions" section of this document and summarized as follows:

- If the person's employer did not offer a health insurance plan to any of its employees, then status was not offered.
- If the person's employer offered a health insurance plan to any of its employees and the person was deemed to be eligible, then status was set to "employer offered, eligible, not enrolled."
- If the person's employer offered a health insurance plan to any of its employees and the person was ineligible, then status was set to "employer offered, not eligible, not enrolled."

For all other workers, we needed to impute whether the employer offered health insurance, and if so, whether the worker was eligible.[8]

Using data from the 2016–2018 MEPS-HC, we calculated three-year averages of offers and eligibility, then projected them to 2019 based on changes observed in published tabulations from the MEPS-IC. This allowed us to adjust for changes in employer offers. Once offer and eligibility rates were projected to 2019, we calculated the probability of working for an offering employer and being eligible for coverage based on sector (private, Federal, and state/local), firm size (less than 25, 25–99, 100–499, and 500 or more), and hours worked (less than 30 versus 30 or more, per week).[9]

Valid codes for offer status at the person level were set to:

    1 = Enrolled, coverage through current employer
    2 = Employer offered, eligible, not enrolled
    3 = Employer offered, not eligible, not enrolled
    4 = Not offered

Federal and state employees whose offer status was set as "not offered" were recoded to "offered, not eligible." These workers may have responded incorrectly because they misinterpreted the "not offered" category. For example, part-time workers who were ineligible for coverage may have responded "not offered" when, in fact, the employer offered coverage to eligible workers, and so should have been coded as "employer offered, not eligible, not enrolled."

Exhibit 2 shows the results of the coverage imputation for all workers.

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[6] The CPS does capture point-in-time offers of coverage for March 2020, but the Auxiliary Data is based on the calendar year 2019 employment and insurance variables. Furthermore, the ASEC offer data has two sets of variables (one where the universe is limited to ESI dependents who work and are not self-employed, another with an expanded universe).

[7] These were workers covered by their current employers.

[8] An employer is considered to offer coverage if it offers coverage to any employee, even if not all employees are eligible for the coverage.

[9] For imputation purposes only, hours worked was split at 30 per week to be consistent with the ACA.

Exhibit 2: ESI Coverage, by Offer Status
(in millions)

Offer Status	Workers
Employer offers coverage	133.6
Employee has coverage from employer	83.9
Employee eligible, not enrolled	31.5
Employee not eligible, not enrolled	18.1
Employer does not offer coverage	36.3
Total	**169.9**

Step 3: Imputing the sector that provides coverage

Because the CPS provides information on current (March and past year) employment status, but not former employment, we needed to impute both sector and size of employers that provided coverage for those who have health insurance from a former employer. For individuals who receive pension or survivor's payments, as reported in the March CPS, we used the sector of the employer that provided the payments as being the sector most likely to provide health insurance coverage as part of a retirement package. For policyholders without such payments, we imputed the sector providing coverage based on geography (state) and age of policyholder (under 55, 55–64, and 65 and over). We used data from the 2016–2018 MEPS-HC, the 2019 MEPS-IC survey, and the 2019 FEHB Program to determine target probabilities.

For dependents, the sector of the policyholder was used to determine the likely source of coverage. For dependents without a link to a policyholder record, we used their demographic characteristics (age and presence of survivor's income) to determine the sector providing coverage.

Exhibit 3 shows the results of the sector imputation for all persons with ESI. Persons with ESI both in their own name, and as a dependent are reported only in the "ESI in Own Name" column consistent with the order of imputation.

Exhibit 3: ESI Coverage, by Hierarchical Status and Sector
(in millions)

Sector	ESI in Own Name	ESI as Dependent
Private Sector	72.9	66.4
Current Employer	68.3	63.2
Former Employer	4.6	3.2
Public Sector	23.4	20.3
Current Employer	15.6	16.6
Former employer	7.8	3.7
Total	**96.3**	**86.7**

Note: Components may not sum to total due to rounding.

Step 4: Imputing the size of employer that provides coverage

As noted above, because the CPS provides information on current (March and past year) employment status, but not former employment, we needed to impute the size of employers that provided coverage for those who have health insurance from a former employer. This imputation was done in a manner similar to the sector imputation.

We imputed employer size for covered persons, including both policyholders and dependents, based on the prior sector imputation. First, we assigned all covered persons with sector equal to either state or Federal government to the largest CPS employer size category (1,000 or more). Next, all other covered persons were assigned an employer size based on state, age (under 55, 55–64, or 65 and older), and sector. As with the sector imputation, MEPS-IC was the primary data source. Dependents linked to a policyholder were assigned the same status as the policyholder. If a policyholder was not found, we used characteristics of the dependent. Dimensions were essentially the same as those used for the policyholder imputation, except that the age category for dependents included younger groupings.

The March CPS contains an interval variable on employer size for the job held longest during the prior year. This variable refers to the size of the firm rather than that of the establishment or workplace, although tabulations suggest that not all respondents answer appropriately. While it is impossible to determine whether workers in the private sector include all employer locations when reporting their employer size, we have assumed that persons working for a state or the Federal government should fall into the largest employer size category. Responses were edited accordingly.

Exhibit 4 shows the results of the employer size imputations. Persons with ESI both in their own name, and as a dependent are reported only in the "ESI in Own Name" column consistent with how they were imputed.

Exhibit 4: ESI Coverage, by Hierarchical Status and Employer Size
(in millions)

Employer Size	ESI in Own Name	ESI as Dependent
Less Than 100	21.9	18.4
Current Employer	21.5	18.1
Former Employer	0.4	0.3
At Least 100	74.4	68.3
Current Employer	62.4	61.6
Former Employer	12.0	6.7
Total	**96.3**	**86.7**

Note: Components may not sum to total due to rounding.

Step 5: Imputing whether coverage was fully insured or self-insured

The March CPS does not include details about a person's health plan, including information indicating funding status. Therefore, we do not know whether an ESI plan is fully insured (the employer contracts with another organization to assume financial responsibility for the enrollees' medical claims and administrative costs) or self-insured (the employer assumes some or all of these costs directly). All information on plan funding for persons with ESI has been imputed for the Bulletin as part of the Auxiliary Data.

Data on funding status and plan type for persons in non-Federal plans were obtained from tabulations of the 2017–2019 MEPS-IC files provided by AHRQ.[10] The tabulations were performed at the state (or geographic) level for each year. While states vary in the proportion of persons covered by each plan type and funding status, the relative values for each state compared to the national average are consistent. In addition to the MEPS-IC information, we also looked at the EHBS for 2019 to determine the appropriate penetration levels of self-insurance by size of employer.

The 2019 MEPS-IC levels of self-insurance were used by sector (private versus state/local), along with the three-year state averages, to determine state-specific targets for persons with ESI. All persons enrolled in Federal plans were assumed to be in fully insured plans.

Exhibit 5 shows results of the funding status implementations.

Exhibit 5: ESI Funding Status, Self-Insured vs. Fully Insured
(in millions)

Funding Status	Number with ESI
Self-Insured	108.2
Fully Insured	74.8
Total	**183.0**

Note: Components may not sum to total due to rounding.

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[10] Plan types were Health Maintenance Organization (HMO), Preferred Provider Organization (PPO), Point-of-Service Plan (POS), and high deductible health plans (HDED); the latter of which includes, but is not limited to, IRS-qualified HDHP plans.

Step 6: Imputing type of plan

As noted in the prior step, the March CPS does not contain detailed information on the health plan in which an individual is enrolled. As with plan funding, all details on the type of plan held by a person were imputed for those covered by ESI. Prevalence of coverage by plan type (HMO, PPO, POS, or HDED) was based on data from the 2019 MEPS-IC and the change in prevalence from 2018 to 2019 found in the EHBS. These data were presented by funding status (self-insured versus fully insured) and geography (nine US geographic regions as well as by state).[11] Imputations were made along these dimensions as well as by size of employer.

For Federal plans, the allocation was based on FEHB Program data from 2019, as obtained from the OPM, on employees (postal vs. other), annuitants (retirees) and dependents, by plan type (HMO versus PPO).

Exhibit 6 shows the results of the funding and plan type imputations.

Exhibit 6: ESI Coverage, by Funding Status and Type of Plan
(in millions)

Funding Status	Total	HMO	PPO	POS	HDED
Self-Insured Plans	108.2	12.8	57.1	2.5	35.9
Fully Insured Plans	74.8	20.5	31.3	7.5	15.6
Total	**183.0**	**33.2**	**88.4**	**10.0**	**51.4**

Note: Components may not sum to total due to rounding.

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[11] Three years of unpublished MEPS-IC data provided by AHRQ were averaged to obtain target percentages by plan type for each state. In cases where the sample size was small, we used 3 years of data by geographic region rather than state.

Step 7: Imputing the partition of COBRA versus retiree coverage

The March CPS does not distinguish between ESI coverage provided by a current or former employer, and it lacks information on whether coverage by a former employer is retiree coverage or COBRA. We imputed retiree versus COBRA coverage for the Bulletin as part of the Auxiliary Data.

We obtained 2019 "target" counts of persons with either COBRA or retiree coverage from AHRQ, based on the 2019 MEPS-IC, and from OPM data for the FEHB Program. Assignments of retiree or COBRA coverage were based on person characteristics, using CPS data and data from the MEPS-HC. The 2020 ASEC contains a large number of non-workers with ESI coverage in their own name. The total prior target was thus allowed to deviate slightly from the total prior target indicated by MEPS, such that the retiree target matches. The COBRA counts are higher than targeted due to the non-workers but not inconsistent with targets seen in the MEPS PRPL file.

In general, we assigned coverage for policyholders first, then made the same assignment for their dependents. Dependents without policyholders, usually those with coverage from outside the household, were assigned based on their own characteristics. In our allocation, we used the following March CPS characteristics: age, presence of pension income, sector providing health coverage, and categorical amount paid by employer towards health coverage (all, some, or none).

Age groups used were as follows: under 55, 55–64, and 65 and over. Presence of pension income is based on the March CPS variable "retirement income, pension source" (or survivor's income, if a dependent). We assumed the income to be pension-related if the source was company or union pension, Federal government retirement, state or local government retirement, or U.S. railroad retirement.[12] The amount paid by an employer towards coverage is captured by the March CPS and categorized as either all, some, or none.

Some were assigned to either COBRA or retiree with "certainty" (that is, person level characteristics alone determined the type of coverage held), while others were assigned based on probabilities as discussed below, along with the desired total counts of persons with each type of coverage.

The allocation rules and guidelines for assigning individuals to retiree or COBRA coverage are listed below, based on whether there is certainty or probability involved.

If the person was under 40 years old, COBRA was assigned with certainty, otherwise if pension income was present, status was decided with certainty as follows:

- If the person had pension (or survivor's) income and coverage was from the public sector, then coverage was deemed retiree.
- If the person had pension (or survivor's) income, coverage was from the private sector, and employer payment was anything (including unknown) except "none," then coverage was deemed retiree.
- If person was under 65, had pension (or survivor's) income, coverage was from the private sector, and employer payment was "none," then coverage was deemed "COBRA."
- If person was age 65 or over, coverage was deemed retiree.

If no pension (or survivor's) income was present, coverage was assigned as follows:

- The count of persons allocated to retiree or COBRA coverage based on presence of pension income was subtracted from the target counts of retiree and COBRA coverage, by sector and age.
- Data from the MEPS-HC and MEPS-IC were used to develop probabilities of retiree versus COBRA coverage for this remaining group by age, employer payment, and sector (for private, state and

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[12] The redesign of the income questions, which began with the split panel design of the March 2014 CPS and became standard for the entire sample starting with the March 2015 survey, has improved identification of pension income and decreased the amount of retiree imputations necessary.

local coverage), while FEHB Program data were used to determine the probability of retiree coverage for those with Federal coverage.

- Persons age 66 and older who had Medicare were assigned to retiree coverage, while persons age 65 and under were permitted to be assigned COBRA as part of the transition to Medicare.

Exhibit 7 shows the results of the COBRA and retiree assignments for persons with coverage from a former employer (policyholders and dependents combined).

Exhibit 7: ESI Coverage from a Former Employer,
by Age, Sector, and Retiree vs. COBRA Coverage
(in millions)

Sector	Under 55	Age 55–64	65 and Over
Private Sector	4.4	1.3	2.2
Retiree Coverage	0.9	1.1	2.2
COBRA Coverage	3.5	0.2	0.0
Public Sector	2.7	2.8	6.0
Retiree Coverage	2.2	2.8	6.0
COBRA Coverage	0.5	0.1	0.0
Total	**7.1**	**4.1**	**8.2**

Note: Components may not sum to total due to rounding.

Step 8: Imputing Medicare Secondary Payer (MSP)

When assigning primary coverage to individuals with more than one source of coverage during the year, the Bulletin generally ranks employer sponsored insurance (ESI) above all other sources. However, when a person has both Medicare and ESI, this is not always the case. For most workers, certain ESI plans are primarily responsible for payment. The Medicare Trust Funds are protected by the 1980 Congressional legislation that makes Medicare the secondary payer in specific instances, thus shifting costs away from the Medicare program.[13] Under MSP rules, non-workers (retirees) with ESI always have Medicare as the primary payer. For workers, the primary payer depends on the size of the employer and whether the individual qualifies for Medicare due to age or disability. Since the March CPS does not ask which of these two insurers is the primary payer, we imputed this variable in accordance with Medicare Secondary Payer rules.

For active employees (and their dependents), a determination of primary payer depends on age and employer size. For workers or their spouses who are age 65 or over, ESI is the primary payer if the employer size is 20 or more, while Medicare is the primary payer if employer size is under 20. For those younger than 65, ESI is the primary payer if the employer size is 100 or more, while Medicare is the primary payer if employer size is under 100.

Starting with the March 2019 CPS, Census revised the employer size categories to partition end points at 10, 25, and 100; the previous breakpoints were 10, 50, and 100. We have modified our analysis to use these new size categories and no longer include an additional partition at size 20 in order to determine Medicare Secondary Payer splits (size 25 is used as a proxy for size 20). For dependents with both Medicare and ESI coverage, the dependent's age is used, but the size category is obtained from the policyholder. A variable is included in the Auxiliary Data file for all persons with both ESI and Medicare to indicate primary payer.

The 2020 CPS contains a variable indicating whether coverage is concurrent when more than one type of health insurance is present. When the coverage is not concurrent, we assume Medicare is primary with certainty.

Exhibit 8 shows the results of the MSP imputation for persons with Medicare and ESI.

Exhibit 8: Medicare Secondary Payer Coverage, by Age
(in millions)

MSP Status	Under 65	65 and Over
Medicare Primary	0.2	8.3
Medicare Secondary	0.7	3.1
Total	**0.9**	**11.3**

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[13] The Centers for Medicare and Medicaid Services (CMS) explanation of Medicare Secondary Payer can be found at http://www.cms.gov/Medicare/Coordination-of-Benefits-and-Recovery/Coordination-of-Benefits-and-Recovery-Overview/Medicare-Secondary-Payer/Medicare-Secondary-Payer.html.

Step 9: Imputing actuarial values (AVs)

While the March CPS includes limited data on the cost of health insurance and annual medical expenditures, it does not collect the information required to determine the actuarial value (AV) of an individual's health insurance plan. AV represents the fraction of covered medical expenses paid for by a health insurance plan, calculated as an average over a standard population. We imputed variables that represent the actuarial value of active employer sponsored health insurance coverage by sector, plan type, and funding, for employees with health insurance in their own name from a current employer.

We used health plan details from the 2019 KFF EHBS as the primary source for imputing actuarial values.[14] We also reviewed data on plan benefits and out of pocket costs from a KFF analysis of the Truven Health Analytics Marketscan Commercial Database and the 2018 HCCI Health Care Cost and Utilization Report in an effort to evaluate plan richness, and thus indirectly evaluate average actuarial values.[15] These sources showed a steady and relatively flat trend in overall actuarial values over time for ESI although they showed increasing richness for prescription drug coverage and decreasing richness for outpatient and office-based services. Using KFF EHBS plan data from the 2019 survey by plan type and funding, we ensure that targets are stable and reproduce what appear to be the trends and distributions found in both the HCCI data and the KFF / Marketscan analysis. Specifically, the overall AV is fairly close to 0.85, with large employer plans being slightly richer.

This is a change from prior imputations, which used AVs as calculated from the 2005 and 2015 National Compensation Survey (NCS). Using the NCS, ARC had calculated AVs for private sector plans based on the plan specifications (cost sharing and covered services) provided in the survey and presented the distributional results by plan type, funding, and employer size. This work was updated by ARC in 2017,[16] using the distributional results from the NCS dataset 113, which includes plans collected from June 2014 through July 2015.[17] However, the methodology of using the NCS distribution resulted in artificially lowering the mean AV, and is likely to have not captured the change in benefit richness by service which could affect the shape of the distribution.

We have imputed both "cell-based actuarial values" – averages by sector, plan type, and funding – and "plan-specific actuarial values" onto the Auxiliary Data. While the cell-based values are useful at the aggregate level, they are not helpful for performing detailed analysis of partitions beyond these broad cell groupings. For this reason, we imputed plan-specific values using a plan-to-person, record-by-record match prioritized by size.

The EHBS also reports whether high deductible plans have health savings accounts (HSAs) or health reimbursement accounts (HRAs). We have maintained the HSA/HRA partition from the data and, along with the imputed AVs for high deductible plans, have imputed a flag noting whether the plan was considered an HSA or an HRA.

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[14] Kaiser Family Foundation. (September 2019). 2019 Employer Health Benefits Survey. https://www.kff.org/report-section/ehbs-2019-2019-employer-health-benefits-survey/.

[15] Kaiser Family Foundation analysis of Truven Health Analytics MarketScan Commercial Claims and Encounters Database, 2006 – 2016, https://www.healthsystemtracker.org/brief/increases-in-cost-sharing-payments-have-far-outpaced-wage-growth; Health Care Cost Institute. 2018 Health Care Cost and Utilization Report. (February 2020). https://healthcostinstitute.org/images/pdfs/HCCI_2018_Health_Care_Cost_and_Utilization_Report.pdf.

[16] Final Report: Analysis of Actuarial Values and Plan Funding Using Plans from the National Compensation Survey, A RC (May 12, 2017), https://www.dol.gov/sites/default/files/ebsa/researchers/analysis/health-and-welfare/analysis-of-actuarial-values-and-plan-funding-using-plans-from-the-national-compensation-survey.pdf (compiled for the Office of Policy and Research (OPR), Employee Benefits Security Administration (EBSA), Department of Labor (DOL)).

[17] Because NCS microdata is generally not publicly available, our work drew on the most recent data set available to ARC, per our analysis of actuarial values and plan funding.

Exhibit 9 shows the resulting plan-specific average actuarial values. Averages shown below include HSA/HRA partitions as subsets of the high deductible plan type.

Exhibit 9: Average Actuarial Values for Persons with Active Employees with ESI in Own Name, by Sector and Type of Plan
(in millions)

Sector	Total	HMO	PPO	POS	HDED-Total	HDED-HRA	HDED-HSA
Private Sector Plans	.8445	.9293	.8416	.8386	.7999	.7884	.8032
Public Sector Plans	.8582	.9469	.8485	.8543	.8032	.7930	.8064

Step 10: Examining CPS variables on health spending

Starting with the March 2011 CPS, Census has included information on out-of-pocket spending for both over-the-counter purchases (POTC-VAL) and medical care and equipment (PMED-VAL), as well as health insurance premiums (FHIP-VAL and PHIP-VAL).

As in years past, we have examined levels of out-of-pocket spending and have found them compatible with estimates from the MEPS-HC, by age and insurance status. In addition, when we examined the distribution of spending for those with out-of-pocket spending, we found these distributions to be robust at both the high and low ends. As a result, we once again are including the CPS estimates of out-of-pocket spending in the March 2019 Auxiliary Data set and tables. The out-of-pocket variable included in the Auxiliary Data is the sum of the CPS variables on over-the-counter purchases and medical care. No edits or imputations beyond this summation are performed on the CPS values.

Exhibit 10 shows averages for out-of-pocket spending by type of insurance held.

Exhibit 10: Mean Out-of-Pocket (OOP) Spending, by Hierarchical Insurance
(counts in millions, spending in dollars)

Insurance	Counts	Mean OOP
Insured	298.4	$885
ESI Policyholder	90.0	$1,161
ESI Dependent	84.5	$752
Medicare	55.0	$1,193
Other Private Health Insurance Policyholder	10.6	$1,352
Other Private Health Insurance Dependent	7.0	$784
Other Public	51.3	$210
Uninsured	26.1	$495
Total Population	**324.5**	**$854**

Per the questionnaire, policy holders were asked "[Earlier I recorded that (your/name's) employer or union did not pay for (your/his/her) entire health insurance premium.] Last year, how much did (you/name) pay out-of-pocket for ALL health insurance premiums [covering (yourself/himself/herself) or others in the household]? Include both comprehensive and supplemental plans (such as vision and dental insurance)."

This question specifically asks to exclude Medicare premiums as deducted from SSA/SSI payments, and appears to try to include only those persons with ESI. However, it asks for coverage beyond traditional insurance. Given the lack of specificity of what is contained in the answer, as well as a lack of detail of how this was asked for persons without ESI, these variables have been excluded from the Auxiliary Data Set in the past. While the 2020 ASEC reports a second premium variable which has been edited for consistency, the results still produce estimates that do not line up with what is known from other sources, such as the MEPS-IC. In particular, the ratio of family to single contributions is lower (just over two, versus much closer to four from MEPS), with the single amount appearing higher and the family amount appearing lower. Despite some improvements, at this point, we continue to exclude it from the Auxiliary Data Set.

Step 11: Imputing whether coverage was provided through a union arrangement

For workers age 15 or older, the March CPS provides limited information on whether a person is a member of a labor union or of an employee association similar to a union (CPS person variable: A-UNMEM). For nonmembers, the March CPS asks if the person is covered by a collective bargaining agreement (CPS person variable: A-UNCOV). For simplicity, we summarize the two CPS union variables into a single variable which was coded to have values of either "1" (union) or "2" (not union). All persons who indicate either union membership or coverage through a collective bargaining agreement were considered "union." Those who did not were categorized as "not union." However, the usefulness of these questions is limited by the fact that they are asked to only one-quarter of the working population (those who were in their fourth or eighth month in the survey) and exclude the self-employed. For this reason, we imputed union membership to all other private and public sector workers and we imputed union coverage to all persons with ESI, creating three imputed variables: one for all workers (union membership), one for ESI policyholders (union coverage), and one for ESI dependents (union coverage).

We began the assignment process by looking at private and public sector workers. If the March CPS union variables give a valid union status, we assigned union membership (yes or no) with certainty. For all other persons (those without a valid CPS union status), we imputed union membership. We calculated the likelihood of union membership using CPS records that had a valid set of responses to the union questions. The resulting probabilities were based on age (under 35, 35–54, 55–64, and 65 and over), collapsed industry/sector of employment (private sector and likely union (mining, construction, manufacturing, transportation, utilities), private sector and not likely union (agriculture/forestry/fishing, wholesale, retail, finance/insurance/real estate, services, healthcare), and public sector), size of employer (under 25, 25–499, and 500 and over), hours worked (under 30 and 30 or more, per week), and geographical region.

Next, we assigned with certainty, union coverage status for ESI policyholders with coverage through their current employer based on their union worker status. This step was straightforward, as these records kept their assignment from the prior step.

We then imputed union coverage for those ESI policyholders with coverage from a former employer, whether or not they currently work. The purpose was to reflect the status of the employer providing coverage, while the union variables described above were based on the characteristics of the current employer. Probability cells from the 2008 Wave 6 panel of the SIPP (2010 data) are used for those with coverage through COBRA or as a retiree. Probability cells for COBRA coverage include age (under 55, 55 and over), size of employer providing coverage (under 100 and 100 or more), employer sector (private, Federal, state/local) and work status (work and no work). Probability cells for retirees include an additional age break at 65 and omit work status.

For ESI dependents (including those who were also policyholders), we created a variable with the same categories as those for policyholders. We used the affiliation of the policyholder whenever a link was available. In the absence of a direct link, the status was imputed based on sector of coverage, size of employer providing coverage, age of dependent, and whether coverage is active, COBRA or retiree.

Exhibit 11a shows the results of the assignment of union membership and coverage for all workers. Exhibit 11b shows the assignment of union coverage for all persons with ESI (policyholders and dependents), both workers and non-workers.

Exhibit 11a: Union Membership or Coverage for All Workers
(with or without ESI, no self-employed)
(numbers in millions)

Union Status	Total Workers
Union Members	18.6
Not Union	135.8
Total	**154.3**

Exhibit 11b: Union Membership or Coverage for All Persons with ESI
(workers and non-workers)
(numbers in millions)

Union Status	Total ESI
Union Members	33.2
Not Union	143.4
Total	**176.6**

Note: ESI includes both policyholders and dependents, but
excludes those with coverage only through self-employment.

Step 12: Whether coverage was provided through a health insurance exchange

Since October 2013, individuals have been able to purchase health insurance coverage for the following calendar year through state or Federal health insurance exchanges, in addition to purchasing directly from insurance companies. Open enrollment sign-up for exchange coverage for CY 2019 took place between November 1, 2018, and December 15, 2018, with special enrollment permitted outside this window.

The CPS has collected information on whether private insurance was purchased through an exchange, but that information was not released until the March 2019 data. The data now includes indicators for exchange coverage and whether that coverage was subsidized. After tabulating the data, ARC determined that while the overall counts (9.7 million) were reasonable, the level of subsidized coverage (65% of enrollees) is underrepresented when compared to the average monthly effectuated enrollment data by state and income level for 2019, as released by the Centers for Medicare and Medicaid Services (CMS).[18]

This subsidy discrepancy was largely eliminated in last year's auxiliary data by editing the file to assume all persons whose incomes are less than 400% of the Federal poverty level (FPL) actually receive a subsidy.[19] Because we expect that some whose income meets or exceeds the 400% FPL receive a subsidy after applying income adjustments, we make no edits to remove a report of receiving a subsidy. Counting all enrollees under 400% FPL, plus those over 400% FPL reporting a subsidy, results in an estimate of 83% of enrollees receiving an advance premium tax credit, slightly lower than the CMS reported percentage of 87%. Due to changes in the income distribution on the March 2020 CPS, which showed a shift from lower to higher income levels (and thus fewer under 250% FPL), we were limited in our ability to reconcile the subsidy percentage to the CMS level.[20] Census has noted the effects of non-response on income in a working paper that was released in the spring of 2021.[21] Specifically, they noted that due to non-response, higher income households were more likely to respond than lower income households, which resulted in overstating income by 2.8% at the mean. Our tabulations of the experimental weights show a shift of 1% of total population from over 400% of poverty to under that level (from 45.3% down to 44.3%). However, while experimental non-response adjusted weights were released in conjunction with the working paper, insurance was not part of the analysis that was used to create the weights and, as such, Census has not incorporated them into their official releases or their estimates of insurance coverage. Based on this decision, we have also chosen to not include the experimental weights as part of the auxiliary data.

Exhibit 12 shows the income distributions of persons with health insurance coverage through exchanges, both raw and edited, based on the official CPS weights.

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[18] Early 2020 Effectuated Enrollment Snapshot, Centers for Medicare and Medicaid Services (June 23, 2020), https://www.cms.gov/CCIIO/Resources/Forms-Reports-and-Other-Resources/Downloads/Early-2020-2019-Effectuated-Enrollment-Report.pdf.

[19] Poverty has been tabulated using the CPS variable POVLL, which may differ from the actual poverty calculation used to determine eligibility for Medicaid, CHIP or subsidies through the health insurance exchanges. We made a simplifying assumption to move people from unsubsidized to subsidized coverage if their poverty was under 400% FPL. Given the inherent intricacies in actual eligibility calculations, we did not remove a subsidy from any record (including those above 400% FPL) where receipt was indicated.

[20] Income, Poverty and Health Insurance coverage in the United States: 2019 (September 15, 2020), https://www.census.gov/newsroom/press-releases/2020/income-poverty.html.

[21] Coronavirus Infects Surveys, Too: Survey Nonresponse Bias and the Coronavirus Pandemic. Rothbaum, Jonathan. Bee, Adam. U.S. Census Bureau. (May 3, 2021). https://www.census.gov/content/dam/Census/library/working-papers/2020/demo/sehsd-wp2020-10.pdf

Exhibit 12: Exchange Counts, by Subsidy
(in millions)

Income Band	Subsidized (raw)	Not Subsidized (raw)	Subsidized (edited)	Not Subsidized (edited)	Total
Less than 250% FPL	3.0	0.9	3.9	0.0	3.9
250%–399% FPL	1.9	0.8	2.7	0.0	2.7
At least 400% FPL	1.5	1.7	1.5	1.7	3.2
Total	**6.4**	**3.4**	**8.0**	**1.7**	**9.7**

Note: Components may not sum to total due to rounding.

Revisions to the March CPS and Our Methodology

Beginning with the March 2014 CPS, Census introduced substantial revisions and additions to the survey, particularly in the areas of income and insurance. The health insurance questions were completely redesigned in order to better estimate coverage during the prior calendar year. In particular, the source of insurance from outside the household has been clarified. New questions were added to look at coverage through health insurance exchanges as well as subsidies through the exchanges. In addition, employer offers of health insurance and insurance take-up variables were included on the main CPS file as well as in a research file. Finally, variables indicating subannual coverage, concurrent coverage, point-in-time coverage, and out-of-pocket medical expenses based on an alternative definition were also included.[22]

The 2019 CPS was the first time the new variables were present in the main data release, with Census introducing a new processing system to "better extract, impute, and weight data collected using the redesigned CPS ASEC questionnaire."[23] The new processing system allows for a wider range of family definitions, including same sex partnerships and marriages. Finally, while weights are provided for all records, infants do not have previous year health insurance information reported. We have adjusted our Auxiliary Data weights so that these infants have a weight of zero for purposes of tabulating health insurance coverage.

As noted previously, in the March 2020 CPS, a processing error led to a correction for the variables for sector and size of employment for workers – which was addressed with an updated file released in April of 2021. This file, which when tabulated shows the sector and size distributions of workers to be similar to those found in the prior two years, was incorporated into the official CPS releases.[24] The adjustments for the error resulted in more shifts by sector than size, with approximately 5.4% of persons assigned to local government employment being moved to the private sector, approximately 19.5% of persons assigned to state government employment moved to local government, and approximately 27.9% of persons assigned as self-employed, incorporated, moved to private sector. Given that these variables are used extensively in our imputations, our analysis has been updated and adjusted to use the updated work force characteristics.

Variables added

New fields were added to the Auxiliary Data in 2019, including for concurrent coverage, subannual coverage, exchange coverage and subsidy, as well as point-in-time insurance. In the 2020 Tool, these remain consistent with the previous year file. As noted above, ARC has added a new weight variable, NEWWT_LASTYR, which can be used to tabulate prior year health insurance with infants reweighted to 0.

A mapping from the March 2020 CPS insurance variables to the Auxiliary Data variables is provided in Exhibit 13a where an asterisk (*) denotes a new variable in 2019. Exhibit 13b displays the additional variables for point-in-time insurance coverage (as of March 2020) in their original (Census) and recoded form (consistent with those in Exhibit 13a).

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[22] Census uses "subannual" to denote less than a year—they ask monthly but only report coverage as none, part year, or full year.

[23] Updates to the Processing of Out-of-Pocket Medical Expenditures and Medicare Premiums, U.S. Census Bureau, SEHSD Working Paper Number 2019-31, https://www.census.gov/content/dam/Census/library/working-papers/2019/demo/sehsd-wp2019-31.pdf.

[24] See footnote #17 at https://www.census.gov/programs-surveys/cps/data/datasets/cps-asec-footnotes.html.

Coverage in Prior Year	CPS Variables	Auxiliary Data Variable
ESI policy holder	OWNGRP	ESIPH
ESI dependent	DEPGRP, OUTGRP	ESIDEP
OPHI policy holder	OWNDIR	OPHIPH
OPHI dependent	DEPDIR, OUTDIR	OPHIDEP
Exchange	MRK	EXCHANGE
Medicare	MCARE	NMCARE
Medicaid	CAID	NMCAID
CHIP	PCHIP	CHIPP
Military	MIL, CHAMPVA, VACARE	CHAMP
Other (public)	OTHMT	OTHER
No insurance	NO_COV_CYR	ANYCOV*
Coverage from outside household	OUTGRP, OUTDIR, OUTMIL	OUTTYP
Concurrent coverage	COV_MULT_CYR	CONCURR*
Exchange coverage subsidized	MRKS	SUBSIDY*

Exhibit 13b: 2020 CPS Auxiliary Data Insurance Variables Mapping from Raw Data,
Point-in-Time Coverage

Point-in-Time Coverage	CPS Variables	Auxiliary Data Variable
ESI policy holder	NOW_OWNGRP	PITESIPH*
ESI dependent	NOW_DEPGRP, NOW_OUTGRP	PITESIDEP*
OPHI policy holder	NOW_OWNDIR	PITOPHIPH*
OPHI dependent	NOW_DEPDIR, NOW_OUTDIR	PITOPHIDEP*
Exchange	NOW_MRK	PITEXCHANGE*
Medicare	NOW_MCARE	PITNMCARE*
Medicaid	NOW_CAID	PITNMCAID*
CHIP	NOW_PCHIP	PITCHIPP*
Military	NOW_MIL, NOW_CHAMPVA, NOW_VACARE	PITCHAMP*
Other (public)	NOW_OTHMT	PITOTHER*
No insurance	NOW_COV	NOW_ANYCOV
Coverage from outside household	NOW_OUTGRP, NOW_OUTDIR, NOW_OUTMIL	PITOUTTYP*
Exchange coverage subsidized	NOW_MRKS	PITSUBSIDY*

Variables removed from the CPS

Previous versions of the Auxiliary Data maintained links for two policyholders. That information is no longer available in the March CPS data and so the second policyholder line number variable has been removed from the Auxiliary Data as well.

Methodological revisions to the Auxiliary Data

While the methodology used to create the March 2020 Auxiliary Data is consistent with the previous year, due to the new variables as well as the new processing system used by Census, not all of the results are comparable to years prior to 2019.[25] There have been changes to which variables have required imputation, as well as the manner of the imputation for some variables. These include:

Exchange subsidy

As noted above, variables now exist both on exchange coverage as well as if that coverage was subsidized. CMS program data is no longer used to impute coverage, but it was used as a check on both the coverage

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[25] The prior Auxiliary Data (March 2018/CY 2017) used the production file as released in the fall of 2018. A Bridge File for March 2018 was released in April of 2019, that used the new processing system that would be used with the March 2019 CPS data. Upon the release of the March 2019 data, Census published a comparison of the March 2019 estimates to those from the March 2018 Bridge File data.

levels and the prevalence of subsidies for this type of coverage. As a result, ARC edited the subsidy coverage variable to be more consistent with CMS published marketplace numbers. This was previously described in Step 12.

Point-in-time offers

As indicated above, workers (not self-employed) not currently enrolled in ESI as a policyholder (PIT) were asked if their employer offered health insurance. If the worker responded no, ARC coded the record under "not offered." In addition, the Census Bureau asked those who were offered insurance if they could have enrolled, and why they chose not to enroll (if eligible) or why they were ineligible for enrollment. The 2019 CPS reported this data using the familiar variable names from previous research files; however, the data was limited to ESI dependents. A research file was published in February 2020, consistent with previous years but with new variable names. For 2020, both sets of variables are available on the ASEC. ARC first used the point-in-time variables with the limited universe. For those unassigned offer status, next ARC used the expanded universe variables, using the same methodology for recoding.

Several variables indicated whether a person was eligible to purchase an employer's health plan if one was offered, as well as reasons for ineligibility or non-enrollment. We combined the response to eligibility with the reasons for not taking or not eligible when assigning values to our recoded OFFER variable.

Respondents were allowed to choose more than one reason for declining coverage or for ineligibility. ARC chose to recode those who responded "contract or temporary employees not allowed in plan" or "haven't yet worked for this employer long enough to be covered" as "ineligible." In addition, if "too expensive" was the only reason given for ineligibility, ARC recoded the record to "eligible, not enrolled." It should be noted that the response "have a pre-existing condition" is listed under both variables (reason for ineligibility as well as reason for not enrolling). If this was the only response in both cases, ARC did not make any recodes and the raw eligibility response was used to assign eligibility.

Other revisions

In addition, the following revisions have been made in the last few years:

- Starting with the March 2016 (CY 2015) Auxiliary Data, actuarial values were imputed based on plan data from ARC's work with the National Compensation Survey for 2015 and the corresponding Employer Health Benefits Survey.
    - o As noted in Step 9 above, ARC did not use the NCS distribution. The EHBS along with HCCI mean AV was used for both private and public sector plans.
- In prior years, the imputation for whether an employee was offered health insurance coverage was changed slightly to make use of the point-in-time information as released in the CPS research file. As noted above, point-in-time offer data was released for many persons on the main file this year.
- For the last several years, a floor of age 40 was placed for assigning retiree coverage, with all persons under age 40 with prior coverage being assigned to COBRA with certainty.
- Finally, the industry cells for imputing union coverage were collapsed, as listed in Step 11.
- In previous years, additional refinements were made to the imputation process that included changing the full-time/part-time number of hours worked from 35 to 30, to be consistent with the ACA.
- The CPS employer size split was changed from 50 to 25 beginning with the 2019 data. All methodology has been updated to reflect this firm size division.

Useful Links

Current Population Survey's Annual Social and Economic Supplement (March CPS)

- The main CPS Page is found at https://www.census.gov/programs-surveys/cps.html. It contains links to details such as methodology, data, definitions, and technical documentation.
    - The codebook for the March 2019 CPS, which includes mention of survey changes, is found at https://www2.census.gov/programs-surveys/cps/techdocs/cpsmar20.pdf.
    - Health insurance estimates from the CPS are from the Annual Social and Economic Supplement, with the main publication page for all Census health insurance reports found at https://www.census.gov/content/census/en/topics/health/health-insurance/library/publications.All.html/.
    - The main report from the March 2020 survey, "Health Insurance Coverage in the United States: 2019," contains information collected in both the March CPS and the American Community Survey (ACS). Most tables in the report are from the CPS, but state-level tables are from the ACS, which has a larger sample size and can give better estimates for smaller geographic areas.
        - The report itself can be found at https://www.census.gov/library/publications/2020/demo/p60-271.html
    - Working papers on health insurance and income/ poverty, respectively, can be found at https://www.census.gov/topics/health/health-insurance/library/working-papers.html and https://www.census.gov/topics/income-poverty/library/working-papers.html.
    - Further explanation of the changes and enhancements to the March 2014 CPS can be found at https://www.census.gov/topics/health/health-insurance/guidance/cpsasec-redesign.html.
    - Research files (2014-2019) with data on point-in-time insurance coverage variable information, and information on refinements to coverage from outside the household, can be found at https://www.census.gov/data/datasets/time-series/demo/health-insurance/cps-asec-research-files.html.

Medical Expenditure Panel Survey (MEPS)

- The main MEPS page is found at http://meps.ahrq.gov/mepsweb/, with background information available at http://meps.ahrq.gov/mepsweb/about_meps/survey_back.jsp.
- Two of the main components are the Household Component (MEPS-HC) and Insurance Component (MEPS-IC). Links to those are found at http://meps.ahrq.gov/mepsweb/survey_comp/household.jsp, for the HC, and http://meps.ahrq.gov/mepsweb/survey_comp/Insurance.jsp, for the IC.

Survey of Income and Program Participation (SIPP)

- The Survey of Income and Program Participation, a longitudinal panel survey, is conducted by the Census bureau. Information on the SIPP can be found at https://www.census.gov/programs-surveys/sipp/about.html.
- Reports based on SIPP data can be found at https://www.census.gov/programs-surveys/sipp/library/publications.html.

Kaiser Family Foundation Employer Health Benefits Surveys (EHBS)

- Archive of surveys from 2019 and earlier can be found at http://kff.org/health-costs/report/employer-health-benefits-annual-survey-archives/.

- The most recent survey, 2020, is found at https://www.kff.org/health-costs/report/2020-employer-health-benefits-survey/.

Federal Employees Health Benefits (FEHB) Program

- An overview of the program can be found at http://www.opm.gov/healthcare-insurance/healthcare/.
- Frequently asked questions, including about Medicare and the FEHB Program, are at http://www.opm.gov/FAQS/topic/insure/index.aspx?cid=3d961dac-81d1-44e2-998c-ed80029feb70.