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Design and Sampling Strategy for a Validation Study Linking Enrollment Records to Survey Reports: the CHIME Study

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Abstract

Because there is no comprehensive administrative record of health insurance coverage in the United States, we must rely on household survey reports to estimate the uninsurance rate and, in many cases, coverage type. Studies of the reporting accuracy are needed to examine the validity of these survey estimates. The CHIME (Comparing Health Insurance Measurement Error) study is an experimental reverse-record check study that compared survey responses to administrative insurance records to understand the magnitude, direction and patterns of misreporting in two important national surveys conducted by the U.S. Census Bureau. The study surveyed a stratified random sample of households known to have health insurance through one large regional insurer in the Midwest. Half of the sample was asked the health insurance module from the recently redesigned Current Population Survey Annual Social and Economic Supplement (CPS), and the other half received the health insurance module from the American Community Survey (ACS). The aim of this paper is to describe the CHIME study design, data collection, and sampling strategy as well as to report matching and response rates.

Keywords: Survey reporting accuracy, validation, health insurance coverage

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1. Introduction

Accurate estimates of health insurance coverage are needed for effective policy-making decisions. Rigorous validation studies — where survey reports on health insurance coverage are matched with an outside "truth" source — are rare. To date, validation studies of health insurance coverage come in two forms: 1) matching studies start with existing survey data that is then linked to enrollment data to validate reporting accuracy; and 2) experimental or reverse record check studies draw samples from enrollment records and survey enrollees about their insurance coverage, later validating coverage at the time of the survey (Call et al. 2012).

Medicaid has been studied thoroughly using both study designs. This is due to long-standing documentation of the "Medicaid undercount," or the mismatch between survey and administrative counts of Medicaid enrollment (Lewis, Ellwood, and Czajka 1998), and the availability of government-maintained centralized databases of Medicaid enrollees. These studies have concluded that the undercount does not have a large effect on estimates of the uninsured (Blumberg and Cynamon 1999; Call et al. 2012; Call et al. 2008; Boudreaux et al. 2015; J. Czajka and Lewis 1999; Eberly, Pohl, and Davis 2009; Klerman, Ringel, and Roth 2005; Noon, Fernandez, and Porter 2016; Pascale, Roemer, and Resnick 2009).

For private coverage, identifying and obtaining a "truth source" against which to compare survey reports of coverage is a bigger challenge, as there is no centralized database. Instead, enrollment records are maintained by insurance companies, employers, and/or "third party administrators" and are considered proprietary and require the cooperation, active participation, and staff resources of the keeper of the records. Studies by Davern (Davern et al., 2008), Hill (Hill 2007) and Nelson (Nelson et al. 2000) represent rare exceptions of studies that integrate private enrollment records and conclude that survey reports of employer-sponsored insurance (ESI) coverage are highly accurate.

We only know of two studies that explore the accuracy of reporting of *both* public and private coverage (Nelson et al. 2000; Davern et al. 2008). Nelson and colleagues (Nelson et al. 2000) made home visits to participants of a telephone survey to obtain photos of insurance cards and permission to contact the insurer to validate enrollment at the time of the survey. Davern and colleagues (Davern et al. 2008) collaborated with a health plan to sample records from the full array of public and private plans, surveying these individuals and verifying enrollment at the time of the survey.

The CHIME (Comparing Health Insurance Measurement Error) study is an experimental/reverse record check study modeled after the Davern study (Davern et al. 2008), but it has several advantages over prior studies. First, it represents the first post-Affordable Care Act (ACA) validation study. Second, it assesses reporting accuracy in two major federal surveys – the Current Population Survey Annual Social and Economic Supplement (CPS), which was redesigned in 2014, and the American Community Survey (ACS). Finally, the sample frame of the CHIME study includes multiple sources of private and public coverage, including, most importantly, directly-purchased individual/non-group coverage available on and off the marketplace. Thus, it is the first validation study of the redesigned CPS, the first experimental study for the ACS, and the first validation study of a marketplace plan. This paper describes the basic study design, as well as the data collection, sampling strategy, and matching and response analyses.

2. Methods

2.1. Design Overview

2.1.1. Two Survey Instruments

The CHIME study is an experimental reverse-record check study designed to determine the magnitude, direction, and patterns of misreporting of health insurance coverage in the CPS and the ACS. Both the CPS and the ACS produce widely cited, but slightly different, estimates of health insurance and the uninsured. Both surveys ask about a range of public and private coverage types, and under both survey designs, a single household respondent is asked to answer health insurance questions for all household members, but there are some key differences. First, the ACS asks only about current coverage (at the time of the interview, which can occur in any month of the year). The CPS asks about current coverage as well as any coverage from the interview date (February/March/April of the current year) going back to January of the prior calendar year, and it captures that coverage at the month level for each person and each coverage type they are reported to have. Second, the CPS captures more detail on coverage type than the ACS captures. The CPS includes questions that distinguish whether non-group coverage was purchased at a marketplace established by the ACA or not, as well as different types of public coverage, while the ACS asks a single yes/no question about non-group coverage and a single yes/no question about all government-assistance health programs. Third, the CPS includes questions on premiums and subsidies that can serve as data points for establishing public versus private coverage, while the ACS does not. Finally, the method to categorize the uninsured varies across surveys. Both surveys ask a battery of questions about enrollment in a range of coverage types. In the ACS, any person NOT indicated as having some type of coverage is categorized as uninsured. The CPS, on the other hand, includes a simple question at the beginning of the battery of questions on coverage type asking if the person has any coverage or not, followed by questions used to determine coverage type and a question to verify that those individuals reporting no coverage are uninsured.

2.1.2. One Health Insurer

For this investigation, a private health insurer with 1.5 million members in the Midwest agreed to provide enrollment records. This insurer offered coverage in all of the major insurance markets in Minnesota in 2014 and 2015, the period covered by this study. The health insurer provided a sample of Minnesota households that included at least one policyholder (or enrollee in the case of public insurance) from each of the following coverage types: (1) ESI, (2) Medicaid, (3) MinnesotaCare (a state-specific program for low-income families that charges a sliding-fee premium), (4) non-group coverage purchased in the insurance marketplace (referred to as MNsure in Minnesota), and (5) non-group coverage purchased outside of MNsure. In addition to these five coverage types, the health insurer provided a sample that transitioned between ESI and public programs sometime in 2014 or 2015. Although we expected that some cases from the five plan types would have transitioned, we wanted to ensure a sizable subsample of these transition cases because CHIME provides an excellent opportunity to look at the impact of churn on reporting accuracy.

2.1.3. One State

The state of Minnesota, like any state, is not representative of the entire United States, which limits the generalizability of this study. In 2016, the population of Minnesota is predominately non-Hispanic white (81 percent vs. 62 percent for the U.S.) and well-educated (93 percent have a high school diploma vs. 87 percent for the U.S.; 34 percent have a college degree vs. 30 percent for the U.S.) (U.S. Census Bureau 2016c, 2016a). The state population has a high median household income ($63,217 vs. $55,322 for the U.S.), low unemployment rate (5 percent vs. 7 percent for the U.S.), and low poverty rate (11 percent vs. 15 percent for the U.S.) relative to other states (U.S. Census Bureau 2016b). As a result, the reporting accuracy of our sample may be different than in other states, but we do not expect that the sample's high socioeconomic status causes differences in reporting accuracy across the survey instruments.

The health insurance market in the state of Minnesota also has some unique features. Importantly for this study, Minnesota has a program called MinnesotaCare. As noted above, MinnesotaCare is a state-subsidized public health insurance program for low-income households that do not qualify for Medicaid. Those covered by MinnesotaCare pay a subsidized monthly premium based on their income, and since the implementation of the ACA, MinnesotaCare was restructured as Minnesota's Basic Health Plan (BHP). At this time, the only other state with a BHP is New York. Because these programs represent public coverage but charge a monthly premium, they blur the distinction between public and private coverage. States where the public/private distinction is clearer are those where all public programs are essentially free (except, perhaps, for small copays), and thus, any plan with a monthly premium is private. Thus, some may argue that categorizing coverage from survey responses may be more complicated in Minnesota (and New York) than in other states. However, Child Health Insurance Plans (CHIP) in many states are public programs that require a monthly premium. Also, because of Medicaid waivers, the Medicaid expansion, and other small state-financed programs, many but not all states have a public health insurance program where enrollees (or certain enrollees) are required to contribute toward the premium or pay an enrollment fee. As of August 2016, a total of 35 states (more than two-thirds) offers one or more public insurance program(s) that requires a monthly premium contribution for at least some if not all enrollees (see Appendix C for details). As a result, we argue that Minnesota programs may not be so different from most states. However, we conduct some analysis omitting the MinnesotaCare strata to provide reporting accuracy estimates that are more relevant for those states with a clear distinction between public and private coverage.

2.1.4. Reverse Record Check Design

Sample households within the six coverage-type strata were randomly assigned to one of two different health insurance questionnaire modules (CPS or ACS). Survey data were collected by telephone on all household members, and then person-level matching was conducted to link the survey data back to the enrollment records data. The survey responses were compared to the administrative records so that measures of "absolute" reporting accuracy (survey response versus records) and "relative" accuracy (a comparison of absolute accuracy across surveys) could be created. The University of Minnesota's Institutional Review Board Human Subjects Committee approved all protocols used in the CHIME study.

2.2. Study sample

2.2.1. Sampling Strata

Households were included in the sample if the home address was in Minnesota, the enrollment records included a phone number, and at least one eligible policyholder resided in the household. Eligible policyholders were under age 65 and belonged to one of the following six strata in December 2014 (when the sample was drawn): (1) ESI, (2) Medicaid, (3) MinnesotaCare, (4) non-group coverage purchased in the insurance marketplace, (5) non-group coverage purchased outside of the marketplace, and (6) a transition group that changed coverage between ESI and Medicaid or MinnesotaCare sometime in 2014 or 2015. Thus, each of the sampling strata are defined by the coverage type of the policyholder sampled regardless of the coverage types of any other health plan members in their household. As examples, a household in the ESI strata has a policyholder with ESI coverage but may also include a child policyholder/enrollee with Medicaid coverage. Likewise, a household in the transition strata has a policyholder who changed coverage types sometime in the last 15 months but may have a spouse who was continuously covered by MinnesotaCare.

Table 1 provides the sampling frame by strata. The health insurer had 696,700 individuals under age 65 in the six strata. Of those, 268,830 individuals were policyholders. Data informatics analysts at the health insurance company removed those individuals in households with no phone number in the enrollment records. If multiple policyholders reside at one address, we randomly selected only one policyholder from each address. Since the surveys ask about the coverage of all members of the household, removing duplicates ensures that we do not collect data multiple times on the same people. In the end, the data informatics analysts estimated that there were approximately 175,000 eligible policyholders living in 130,000 unique households that could be included in the study.

Table 1: Sampling Frame by Coverage Type/Strata

Strata	# Members age 0–64	# Policy-holders age 0–64	Missing home phone rate*	# Eligible Policy-holders	Duplicate address rate*	# Eligible Households
ESI	463,000	115,920	36.0%	74,189	3%	71,963
Medicaid	181,000	115,000	29.0%	81,650	50%	40,825
MinnesotaCare	26,000	22,000	78.0%	4,840	20%	3,872
Marketplace	1,700	1,150	22.1%	896	3%	869
Non-group	22,000	12,000	2.6%	11,688	3%	11,337
Transition	3,000	2,760	36.5%	1,753	25%	1,314
TOTAL	696,700	268,830		175,015		130,181

*Rates estimated using December 2014 enrollment records by health insurer's informatics analysts.

2.2.2. Targeted sample sizes and power analyses

To determine our sample size targets for each coverage type, we conducted power analyses given our budget constraints and the sampling frame. Our goal was to detect a difference in under-reporting between questionnaire treatments for each strata of about 2.5 percentage points. However, the number of eligible households in three strata (MinnesotaCare, marketplace, and

private/public transition) was not sufficient to reach that goal (see Table 1), even if the entire universe of the health insurer's enrollees were to be included. Thus, we calculated the number of cases needed to reach our goal for the other strata, and then we devoted as many cases as possible in the size-restricted strata.

The budget supported data collection involving a call list of 16,000 phone numbers. A response rate of 30 percent would result in 5,000 household survey completes. Assuming 2.5 people per household, this would result in data for 12,500 person records. For the power analysis, we assumed a power of 0.80 and used the Census standard of $p < .10$. The estimated rates of under-reporting in each stratum were based on what could be gleaned from the literature and are detailed in the notes of Table 2. To achieve a minimum detectable difference of about 2.5 percentage points, we targeted 663 ESI household completed surveys, 2,165 Medicaid household completed surveys, and 1,122 non-group/non-marketplace household completed surveys. We divided the remaining cases we expected given our budget to the three size-restricted strata. Thus, we targeted 541 MinnesotaCare households, 306 marketplace households, and 204 transition households. For marketplace and MinnesotaCare strata, the minimum detectable differences are somewhat higher than ideal (5.0 and 4.8 percentage points, respectively). Table 2 shows targeted sample sizes per strata that satisfied these criteria.

Table 2: Power Analysis Assumptions and Case Counts per Treatment/Strata

Strata	SAMPLE SIZE			Estimated Under-Reporting of Coverage Type*	Minimum Detectable Difference in Under-Reporting Across Questionnaires
	Total		Per Treatment		
	HH	Person	Person		
ESI	663	1,658	829	5%	2.3
Medicaid	2,165	5,413	2,706	17%	2.5
MinnesotaCare^	541	1,353	676	17%	4.8
Marketplace^	306	765	383	11%	5.0
Non-group	1,122	2,805	1,403	11%	2.8
Transition^	204	510	255	N/A	N/A
TOTAL	5,001	12,503	6,251		

^These strata use maximum number of eligible households available given budget.

*The ESI estimate is based on Davern et al. (2008); Medicaid is based on an average from experimental findings in Call et al. (2012); no data exists for marketplace under-reporting, so we assumed it would be lower than Medicaid, as most marketplace enrollees pay a premium, which could help these respondents identify the coverage as being from the marketplace. We assumed that MinnesotaCare under-reporting to be similar to Medicaid and that reporting of non-group coverage outside the marketplace would be similar to non-group coverage within the marketplace.

2.3. Procedures and data collection

2.3.1. Process informed by technical advisory group and health insurer

Once the basic study design was established, a technical advisory group (TAG) of experts from several federal and state agencies and private organizations was assembled to maximize the rigor and utility of the study (see Appendix A). The TAG partnered with the researchers in deciding the number of strata and the specific survey treatments to include, deciding on the distribution of the sample across strata, interpreting findings, and disseminating results.

A common critique of record linkage studies is that administrative records come with their own sources of error. This caveat was mitigated somewhat by having worked in very close collaboration with research and informatics staff affiliated with the health insurer — individuals who are essentially at ground zero on the site of the production of the records themselves.

2.3.2. Advance Letter

The health insurer required that we mail an advance letter informing eligible households that the insurance company was partnering with the Census Bureau on a study. The letter invited members who did not wish to participate to opt-out by calling in or writing to the health insurer's call center. We allowed about a month between the mail date of the letter and delivery of the final, live sample of members whose letter was not returned as a bad address and who did not opt-out for transfer to Census.

To ensure that we obtained 16,000 phone numbers, 22,000 advance letters were mailed assuming between a 20 and 30 percent loss to bad addresses and opt-outs. In the end, less than 6 percent of letters were returned with bad addresses or resulted in opt-outs, leaving a total sample frame of 20,729 eligible households. From the sample frame of eligible households, the health insurer sent the Census all eligible phone numbers in every stratum except Medicaid, which contained the largest number of households; 4,989 randomly selected Medicaid household phone numbers were provided to the Census. The remainder of the Medicaid phone numbers were held back in case the Census call center required a fresh sample during the field period (which they did not).

2.3.3. Survey Administration

The sample was randomly assigned to one of the two treatment arms. The survey instrument covered the following five topic areas: (1) Demographics, (2) Labor force, (3) Unearned income, (4) Health insurance, and (5) Wrap up. All respondents went through the first three topic areas (demographics through unearned income), and then, based on random assignment, half were given the CPS health insurance module and the other half the ACS health insurance module. At the end of the health insurance questions, both paths flowed into the same "Wrap up" module. The complete questionnaire, including all modules and both the CPS and ACS health insurance questions, is available in Appendix B.

Because 98 percent of adult Minnesota residents speak English very well (U.S. Census Bureau 2016d), the questionnaire was not translated; thus, all interviews were conducted in English. If a language barrier was encountered, attempts were made to match a qualified interviewer to explain the survey and try to identify a household member who spoke English to participate in the survey.

All interviews were conducted by Census Bureau telephone interviewers at the Hagerstown, MD, facility. Data collection was divided into two field periods to allow each questionnaire version "equal access" to a fresh sample and fresh interviewers. To minimize interviewer effects, interviewers were assigned to interviewer groups, and each group worked on both questionnaire versions over the course of two field periods. Interviewer groups were first assigned to one questionnaire version, and they worked on only that version during the first field period. At the end of the first field period, each interviewer group rotated to the other questionnaire version. The first field period was from May 20 to June 8, 2015, and the second was from June 10 to June 28, 2015.

2.3.4. Matching

Upon completion of the survey, the health insurer sent the Census enrollment records on every individual in the 16,000 households that could have been called by the Census. Because there was some lag time between the date that the sample was selected and actual data collection by Census Bureau interviewers, phone numbers could have been reassigned from the original insured member to a different household, and/or the insured member(s) could have moved out of the household. In addition, among phone numbers that matched at the household level, it is possible that not all household members were insured by this health insurer. Thus, we used a computer-match algorithm to match the survey person-record to the enrollment person-record using variables on both datasets: phone number, name, sex, date of birth and address. Clerical review of borderline matches was also conducted to ensure accurate matches.

2.4. Measures

2.4.1. Non-Health Insurance Survey Measures

Measures on the household and the survey respondent are collected in the first three modules of the survey and include age, marital status, race/ethnicity, education, household size, relationship to respondent, employment status (including hours and weeks worked), employer size, family income (relative to federal poverty level [FPL]), and government program participation (e.g., SNAP (food stamps), TANF (welfare), social security, supplemental security income). We also know the month of the interview (May or June 2015).

2.4.2. Health Insurance Survey Measures

As discussed above, the ACS and CPS health insurance modules use different language. Figure 1 provides an abbreviated sequence of the questions asked in each survey for comparison. The health insurance survey measures produced from the ACS health insurance instrument include indicators for point-in-time coverage of ESI, Medicaid or MinnesotaCare, non-group coverage (purchased on or off the marketplace), military, Medicare, or Indian Health Service for every person in the household. The ACS does not distinguish between Medicaid and MinnesotaCare. The production ACS also does not ask about whether the coverage was purchased through the marketplace, whether the coverage requires payment of a premium, or whether the family receives a subsidy to help with premiums. Because the ACS is currently testing experimental questions about use of the marketplace, premiums, and subsidies for possible inclusion in a future wave, the CHIME study included those experimental questions in a subset of cases. To avoid affecting the accuracy of reports, we added these experimental questions to the end of the health insurance loop for only the last person in the household roster. See Appendix B for the exact questions (items "ACS_MKT," "ACS_PREM," and "ACS_SUBS").

The health insurance survey measures produced from the more complex CPS health insurance instrument include a plan-level indicator for coverage from any source; whether the source of coverage is a job, the government, or something else; whether the coverage is through the military or Medicare; the name of the program if the coverage is through the government; whether the coverage was obtained through the marketplace; whether there is a monthly premium, and whether that premium is subsidized based on family income. These questions are answered for point-in-time coverage (March of any given year) as well as for every month going back to January of the

previous calendar year for every person in the household. Following the health insurance coverage questions, the CPS asks a set of questions on medical expenditures, which includes a single question about the total out-of-pocket cost for all premiums covering all household members. For experimental purposes, the CHIME instrument added plan-level questions about the metal level of the plan (e.g. bronze, silver) if coverage was obtained through the marketplace, and the amount of the subsidy if the respondent reports that the premium was subsidized.

2.4.3. Enrollment Record Measures

The enrollment records provided by the health insurer after the survey was administered included the following measures: coverage type enrollment status for every month between January 2014 and June 2015 (which included coverage status during the month of the interview); an indicator for whether the member was the policyholder; whether the plan was accessed through the marketplace, and if so, the metal level of the plan; if the plan had a premium, and if so, the amount; if the plan premium was partially paid by a subsidy (only for marketplace-purchased plans), and if so, the amount; and a claims-based measure of health risk on each member. The health risk measure is a Resource Utilization Band (RUB) created using the Johns Hopkins Adjusted Clinical Group (ACG) System. The ACG software uses diagnostic and pharmaceutical codes in claims data to estimate an overall morbidity burden of individual patients. The RUB is a score that takes six values: 0=no claims/no health care use, 1=healthy user, 2=low risk, 3=moderate risk, 4=high risk, and 5=very high risk. RUB scores are available for ESI, Medicaid and MinnesotaCare enrolles, but not non-group and marketplace enrollees.

Figure 1: Abbreviated CPS and ACS Health Insurance Modules

CPS

Logic Check 1: If disabled or age=65+ ➔1; else ➔2

1. Are you covered by Medicare?
   - Yes ➔14
   - No ➔2
2. Are you NOW covered by any type of health plan?
   - Yes ➔ 3
   - No ➔Qs on Medicaid and other public plans; verify currently uninsured ➔18
3. Is it provided thru a job, govt, or other way?
   - Job ➔6
   - Government ➔4
   - Other way ➔7
4. Is that plan related to a JOB with the government?
   - Yes ➔6
   - No ➔5
5. Is that Medicaid/CHIP, Medicare, military, other?
   - Medicaid/CHIP/other/DK ➔9
   - Military ➔[type of military plan] ➔10
   - Medicare ➔14
6. Is the plan related to military service in any way? [if yes, type of military plan] ➔10
7. How is it provided – parent/spouse, direct, other?
   - Parent/spouse/direct ➔10
   - Other ➔8
8. Is it thru former emp, union, group, assn, school?
   - Former emp/union/group/assn/school ➔10
   - Other ➔ 9
9. What do you call the program?
   - Medicaid
   - Medical Assistance
   - Indian Health Service
   - MinnesotaCare
   - Minnesota Comprehensive Health Association
   - PMAP
   - Healthcare.gov
   - Plan through MNsure
   - Other government plan
   - Other (please specify)

   ➔11
10. Who is the policyholder? [If direct in Q7 ➔ 11; else ➔ 14]
11. Is that coverage thru the marketplace?
12. Is there a monthly premium? [if yes ➔ 13; else ➔14]
13. Is the premium subsidized based on family income?
14. [Questions on past months of coverage]
15. Any [other] coverage Jan 2014 till now?
    - Yes ➔loop thru series again, starting with 3
    - No ➔Logic Check 2 for next person on roster

Logic Check 2: For this next person, if any coverage was already reported, start with Q15; else start with Logic Check 1; If no more people on roster ➔END

ACS

1. Are you currently covered by health insurance through a current or former employer or union?
   - Yes
   - No
2. Are you currently covered by health insurance purchased directly from an insurance company?
   - Yes
   - No
3. Are you currently covered by Medicare, for people age 65 or older or people with certain disabilities?
   - Yes
   - No
4. Are you currently covered by Medicaid, Medical Assistance, or any kind of government-assistance plan for those with low incomes or a disability?
   - Yes
   - No
5. Are you currently covered by TRICARE or other military health care?
   - Yes
   - No
6. Are you currently covered through the Veteran's Administration**?**
   - Yes
   - No
7. Are you currently covered through the Indian Health Service?
   - Yes
   - No
8. Are you currently covered by any other health insurance or health coverage plan?
   - Yes ➔ (specify name of health care plan)
   - No

3. Statistical analysis plan

3.1. Classifying health insurance coverage type from survey responses

Because the redesigned CPS health insurance instrument asks multiple questions about the features of coverage instead of going through a "laundry list" of coverage types like the ACS, we first need to develop an algorithm for combining answers to questions about health insurance from this module. To maximize accurate categorization of coverage type, we employ a machine learning approach to develop alternative algorithms to compare. We then recommend a preferred algorithm to use in our main validation study.

We also examine whether we can accurately separate those with non-group coverage by whether or not they purchased their coverage on the marketplace using the experimental questions on marketplace use, premiums, and subsidies that we added for a subset of the CHIME ACS module (last member on the household roster).

3.2. Validation of the CPS and the ACS

To validate the reporting accuracy of point-in-time survey estimates of health insurance coverage and type in the CPS and the ACS, we create three evaluation statistics. First, we calculate the percent of respondents known to have coverage type X (from enrollment records) who report that they have coverage type X in the survey. This is sometimes referred to as under-reporting. This measure captures the sensitivity of the survey instrument to elicit responses from respondents that indicate their true coverage type. Second, we calculate the percent of respondents reporting coverage type X in the survey who have coverage type X (in enrollment records). Those who cannot be validated to have coverage type X are sometimes referred to as over-reports. This measure captures the predictive power of the survey instrument to predict the true coverage type from the respondents' report. Finally, we compare the percent of people who reported coverage type X to the percent of respondents in our sample who have coverage type X. If the prevalence of coverage type X determined from the survey is close to the prevalence determined from the enrollment records, then the accuracy of the overall estimate is high, even if the person-level reporting is inaccurate.

Both surveys allow respondents to report multiple sources of coverage. Enrollment data also indicate if an individual has multiple sources of coverage. However, the enrollment data can only be used to verify multiple sources of coverage if all coverage is with our health insurer, which may not be the case. Thus, we cannot truly verify reports of multiple sources of coverage. As a result, we separate out multiple sources of coverage from single source of coverage so that it is clear where our validation test is clean and where it is not.

To examine the relative accuracy of the two survey instruments, we adjust for any differences in the composition of the samples across the treatment arms with regression analysis and then compare these three statistics across treatment arms.

Because the CHIME study oversampled households with individuals covered by public and non-group insurance and under-sampled those with ESI, for all the above reporting accuracy metrics we use weighted data that adjusts for the coverage type distributions in the original sampling frame.

3.3. Characteristics of Accurate Reporters

We will examine the following correlates of the respondents' reporting accuracy by coverage type and survey instrument: age, education, income, employment status, health status (using the RUB measure provided in the enrollment records where available), relationship between the household respondent and the person on whom they are reporting, recency and intensity of coverage, and whether the coverage is shared by multiple members of the household. We will examine the bivariate associations between each characteristic and reporting accuracy. Statistical tests will be used to determine whether the ACS and CPS samples and the insurance type strata can be pooled for regression analyses. Then, we will estimate a multivariate logistic regression where the dependent variable is the accuracy of reporting (yes/no) and the independent variables are the characteristics listed above.

3.4. Reporting Accuracy over Time and Transitions

We will examine the degree to which reporting accuracy declines for prior months relative to the interview month and whether reporting accuracy is different for those who have changed coverage type in the last year. In regression analyses, the unit of analysis will be the person-month, the dependent variable will be accurate reporting for month *t*, and the key independent variables will be the number of months between month *t* and the interview month and an indicator for whether the coverage type is the same in month *t* as in the interview month. We will also consider non-linear specifications and whether having a coverage transition changes reporting accuracy over time.

3.5. Premium and Metal Reporting Accuracy

Finally, we will examine the reporting accuracy with respect to premium and subsidy amounts as well as metal level of the plans (as opposed to coverage type). Much of this analysis will be restricted to those with marketplace coverage. We will use logistic regression models when examining binary reporting accuracy of premium and subsidy amounts and metal level. We will use linear regression models when examining the degree of misreporting on premium and subsidy amounts, i.e., when the dependent variables is the amount reported in the survey (or $0 if no premium or subsidy is reported) minus the amount from the enrollment records.

4. Process data results

4.1. Response and Matching Rates and Analysis

In the end, we fell short of our target of 5,000 household completes. Figure 2 details our response rate by strata, which was 22 percent on average.

Table 3 provides a count of the person-level matches and the number of households with at least one matched person. Because the enrollment data only has information on individuals in the household with coverage through one insurer, we cannot compute a meaningful person-level match rate, but we can compute the percent of household surveys that matched to a household in the enrollment data. Overall, we matched 87 percent of survey households to a household in the enrollment data, and on average, we matched 1.66 people per household.

Figure 3 details our matching process. We compare households in the enrollment data with at least one matched person (n=2,306) to households in the enrollment data where no members were matched (n=13,694). Households where no members were matched did not complete the survey (n=13,340), either because they could not be reached (e.g., phone number changed, never answered the phone) or because they refused. Some of the non-matched households did complete a survey but may have had a reassigned phone number or had insufficient information to be reliably matched (n=354).

Table 4 presents this comparison and shows that there are some differences. Households with a matched person had a significantly older policyholder, fewer children in the household with coverage with our insurer, and a policyholder who was more likely to have moderate health risk and less likely to have low health risk or to be a healthy user than households without a matched person. The percent of female policyholders was the same for both groups.

Figure 2: Recruitment Flow Diagram

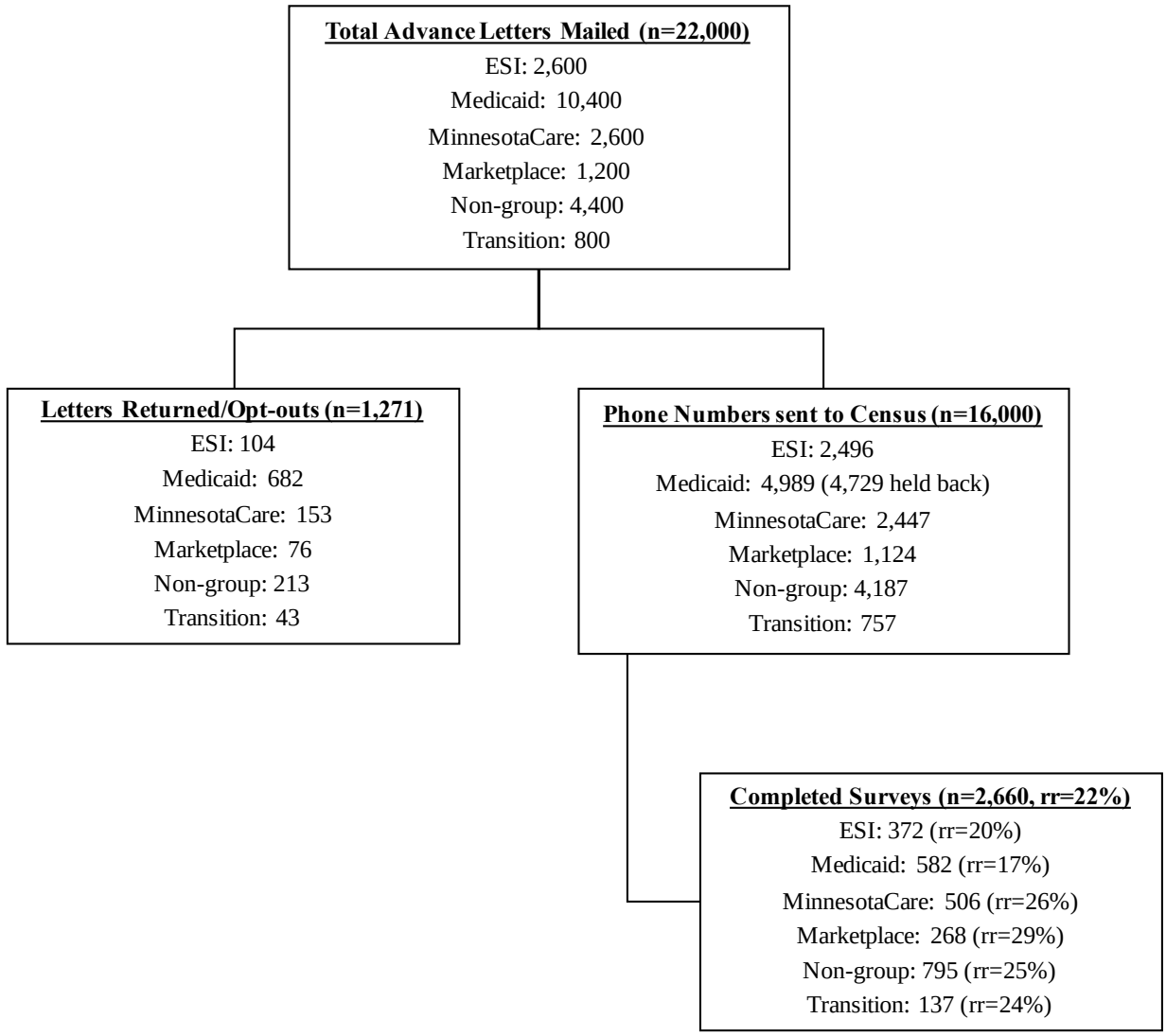

Figure 3: Matching Process Diagram

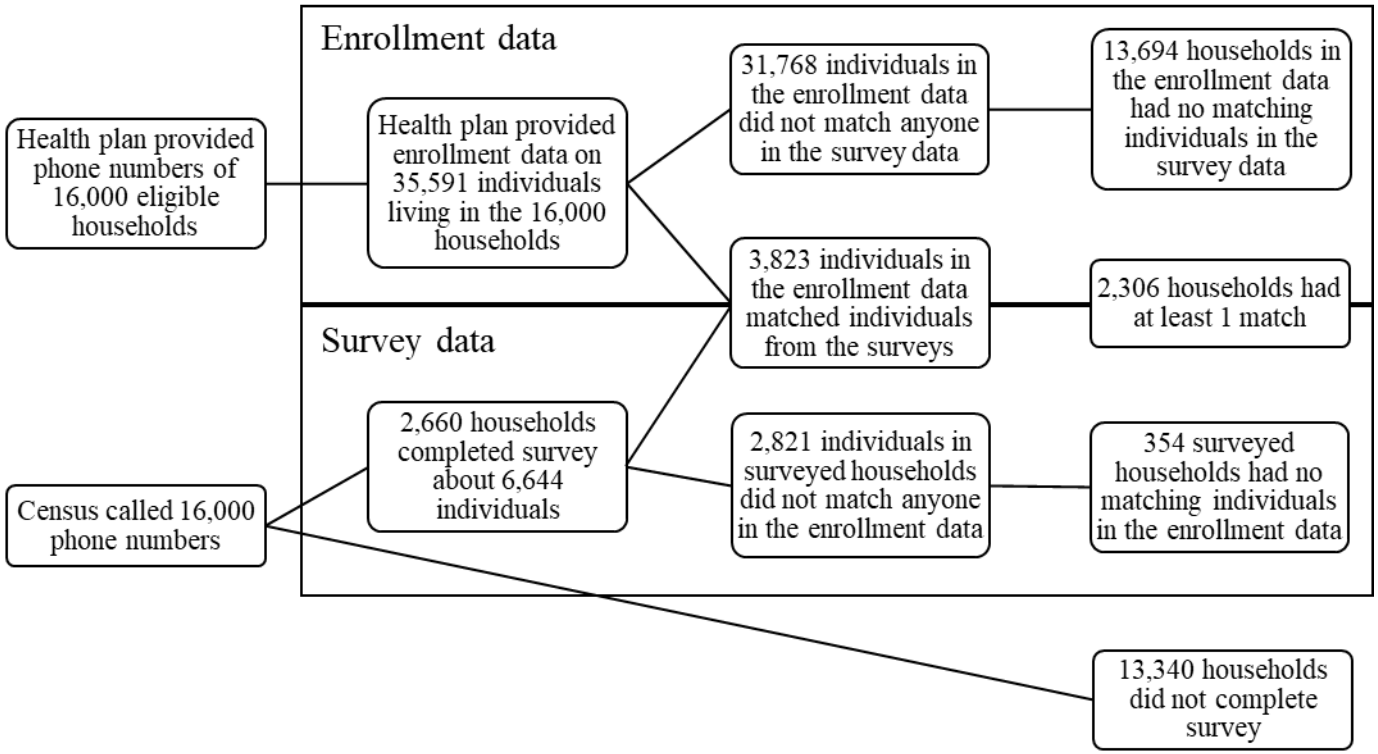

Table 3: Match Rate by Strata

Strata	People Matched		Number of Households with At Least 1 Person Matched	Household Match Rate	Average Number of Matched People Per Household
	n	%			
ESI	561	14.7%	309	83%	1.82
Medicaid	908	23.8%	481	83%	1.89
MinnesotaCare	635	16.6%	447	88%	1.42
Marketplace	330	8.6%	249	93%	1.33
Non-group	1,178	30.8%	698	88%	1.69
Transition	211	5.5%	122	90%	1.73
TOTAL	3,823	100%	2,306	87%	1.66

Table 4: Non-Response/Non-Match Analysis

	Households in Enrollment Records		
	with 1+ survey response match	with no survey matches	p-value
Age of policyholder	41.6	34.5	0.001
Female policyholder	51%	51%	0.849
Number of adult members (age 18+) in household	1.40	1.44	0.107
Number of child members (age<18) in household	0.5	0.7	0.001
RUB 0: No health care use by policyholder/enrollee*	9%	9%	<0.001
RUB 1: Healthy user	12%	14%	
RUB 2: Low risk	15%	19%	
RUB 3: Moderate risk	47%	43%	
RUB 4: High risk	12%	12%	
RUB 5: Very high risk	3%	3%	

Note: Statistical tests were performed to test for differences across groups. For continuous variables, t-tests were performed. For binary and categorical variables, chi-square tests were performed.
*RUB scores are not available for non-group and marketplace sample strata.

4.2. Randomization Analysis

Table 5 presents a comparison of the unweighted characteristics of matched individuals in the two treatment groups. Because of randomization, we expect there to be few differences across treatment arms. For most characteristics, individuals in households who received the CPS treatment were not significantly different from individuals in households who received the ACS treatment. The exceptions were that, compared to CPS individuals, ACS individuals were more likely to reside in households with 5 or more persons, were slightly more likely to be Hispanic or other race, and were more likely to have a family income between 139 and 199 percent of the FPL. To account for these compositional differences between treatment arms, all analyses adjust for these factors.

Table 5: Treatment Arm Analysis

	Unweighted CPS	Unweighted ACS	p-value
Female	51%	54%	0.1284
Respondent	52%	52%	0.9311
Child of respondent	27%	27%	
Spouse of respondent	17%	18%	
Other person in household	3%	3%	
Resides in 1 person household	25%	24%	**0.0270**
Resides in 2–4 person household	57%	43%	
Resides in 5+ person household	18%	33%	
Family size unknown	0%	0%	
Non-Hispanic White	83%	81%	**0.0072**
Non-Hispanic Black	8%	7%	
Hispanic	4%	5%	
Other race, non-Hispanic	5%	7%	
Family income <138% FPL	23%	23%	**0.0547**
Family income 139–199% FPL	17%	20%	
Family income 200–400% FPL	32%	29%	
Family income >400% FPL	26%	26%	
Family income unknown	2%	2%	
Full-year Full-time employed	33%	31%	0.3850
Less than full-time employed	29%	30%	
Out of the labor force	15%	17%	
Under 15	21%	20%	
Employment status unknown	3%	3%	
Employer <10 employees	35%	35%	0.3884
Employer 10–50 employees	19%	20%	
Employer 51–99 employees	6%	5%	
Employer 100+ employees	32%	34%	
Unknown employer size	7%	6%	
Less than high school	8%	8%	0.5234
High school graduate	24%	27%	
Some college or Associate's degree	31%	30%	
Bachelor's degree or more	37%	35%	
Education is unknown	0%	0%	
Married	50%	50%	0.1826
Divorced/separated/widowed	15%	17%	
Never married	35%	33%	
Marital status is unknown	0%	0%	

Note: Chi-square tests were performed to test for differences across groups.

4.3. Sampling Weights

We created two sets of sample weights: one set adjusts for the oversampling of households with individuals covered by public and non-group insurance and under-sampling of those with ESI and one set adjusts for non-response bias as well as over- and under-sampling. The first set of sampling weights make the coverage type distribution match that of the original sampling frame. As shown in Table 6, the unweighted distribution of coverage type in our survey sample was highly skewed; the prevalence of ESI was 15.7 and 13.5 percent in the CPS and ACS treatments respectively, and non-group outside the marketplace was 32.2 and 29.3 percent in the CPS and ACS treatments respectively. In contrast, ESI and non-group coverage outside the marketplace representation in the insurer's population was 66.7 and 3.2 percent, respectively. Thus, for the enrollment distribution to be a useful reflection of a given population, we followed Davern and colleagues (Davern et al. 2008) and created weights by dividing the number of individuals with coverage type X (e.g., strata) through the health insurer in this study by the number of individuals whose household was selected to be sampled in that strata, completed a survey, and was matched to enrollment data. We created separate weights for the CPS and ACS samples.

Table 6: Distribution of coverage type among survey respondents and in the insurer's population, and Weight Values adjusting for Over- and Under-Sampling of Coverage Type

	Insurer's Population Distribution when Sampled (December 2014)		Survey Sample's Distribution when Interviewed (May/June 2015)				Weight Value	
			CPS		ACS			
Strata	N	%	N	%	N	%	CPS	ACS
ESI	463,000	66.7%	313	15.7	248	13.5	1,479	1,867
Medicaid	181,000	26.1%	432	21.7	476	26.0	419	380
MinnesotaCare	26,000	3.7%	336	16.9	299	16.3	77	87
Marketplace	1,700	0.2%	178	8.9	152	8.3	10	11
Non-group	22,000	3.2%	640	32.2	538	29.3	34	41
Transition	3,000	0.4%	90	4.5	121	6.6	33	25

The non-response analysis shown in Table 4 reveals that respondent households were likely to have an older policyholder, which likely explains why the respondent households had fewer children and slightly worse health. Thus, the second set of sampling weights make the coverage type and age distribution match that of the original sampling frame. Table 7 shows that within each coverage type, the distribution of age in the survey sample is highly skewed toward more sample observations in the older age groups compared to the health insurer's age distribution. As above, we created weights by dividing the number of individuals in each age group and coverage type through the health insurer by the number of matched individuals in this study. Also as above, we created separate weights for the CPS and ACS samples.

Table 7: Distribution of coverage type and age among survey respondents and in the insurer's population, and Weight Values adjusting for Age and Over- and Under-Sampling of Coverage Type

Strata	Age Group	Insurer's Population Distribution when Sampled (December 2014)		Survey Sample's Distribution when Interviewed (May/June 2015)				Weight Value	
		N	%	CPS		ACS		CPS	ACS
				N	%	N	%		
ESI	<27	177,930	25.5%	101	6.0%	67	4.2%	1762	2656
	27-45	134,547	19.3%	84	5.0%	58	3.7%	1602	2320
	46+	150,521	21.6%	128	7.6%	123	7.8%	1176	1224
Medicaid	<27	111,622	16.0%	232	13.8%	236	14.9%	481	473
	27-45	43,820	6.3%	108	6.4%	120	7.6%	406	365
	46+	25,575	3.7%	92	5.5%	120	7.6%	278	213
MinnesotaCare	<27	8,013	1.2%	71	4.2%	57	3.6%	113	141
	27-45	8,499	1.2%	102	6.1%	82	5.2%	83	104
	46+	9,490	1.4%	163	9.7%	160	10.1%	58	59
Marketplace	<27	273	0.0%	20	1.2%	22	1.4%	14	12
	27-45	496	0.1%	40	2.4%	36	2.3%	12	14
	46+	930	0.1%	118	7.0%	94	5.9%	8	10
Non-Group	<27	8,228	1.2%	197	11.8%	154	9.7%	42	53
	27-45	7,117	1.0%	185	11.0%	174	11.0%	38	41
	46+	6,655	1.0%	258	15.4%	210	13.2%	26	32
Transition	<27	1,471	0.2%	30	1.8%	47	3.0%	49	31
	27-45	866	0.1%	28	1.7%	32	2.0%	31	27
	46+	662	0.1%	32	1.9%	42	2.6%	21	16

4.4. Characteristics and Representativeness of the CHIME Sample

The weighted CHIME sample is intended to be representative of the regional health insurer's population. To assess how similar the weighted CHIME sample is to a sample of insured Minnesotans, we compared the weighted CHIME CPS sample and the weighted CHIME ACS sample to the production March 2015 weighted CPS sample. Table 8 presents these results. We restricted the production CPS sample to households with a phone and with at least one member of household under the age of 65 to most closely match the CHIME eligibility criteria. We find that the weighted CHIME sample is slightly younger and slightly healthier than the state. The CHIME sample is more likely to be female, have more education, are less likely to work full-time, full-year, are more likely to work for a firm with 51 or more employees, and are less likely to be the policyholder. Finally, the CHIME sample is more likely to have family incomes below 200 percent of FPL, and are more likely to have a larger family size than the state. Most of the CHIME statistics are within 10 percentage points of the production CPS statistic; the three exceptions are 62 percent of the CHIME ACS respondents were female where only 55 percent of production CPS

respondents are female; 36 percent of CHIME ACS respondents work less than full time, full year where 21 percent of CPS respondents do; and 53 percent of CHIME respondents were the policyholder where 74 percent of CPS respondents were policyholders.

Table 8: Demographic and Socioeconomics Characteristics of the weighted CHIME sample and Minnesota's weighted CPS sample

Covered Individual	2015 CPS MN (n=2,722)[a]	CHIME CPS (n=1,989)[b]	CHIME ACS (n=1,834)[c]
Age			
Less than 19	29%	33%	34%
19-34	22%	24%	22%
35 and over	49%	42%	45%
Health status			
Excellent, very good, good	92%	94%	94%
Fair, poor	8%	5%	5%
Relationship to Respondent			
Self	37%	42%	43%
Child	33%	37%	37%
Spouse, other	30%	21%	20%
Respondent			
Gender			
Male	55%	46%	38%
Female	45%	54%	62%
Race/Ethnicity			
White, non-Hispanic	82%	80%	84%
Black, Hispanic, Other	18%	20%	16%
Education			
High School or less	26%	22%	20%
Some college	37%	33%	34%
Bachelor's degree or higher	37%	44%	46%
Employment status			
Full time, full year	64%	58%	50%
Less than full time, full year	21%	27%	36%
Not working, D/R	15%	15%	14%
Employer size (among those working)			
50 or fewer	33%	26%	31%
51 or more, D/R	67%	74%	69%
Policy Holder Status of Respondent			
Not policyholder	24%	35%	38%
Policyholder	74%	53%	53%
Unknown (did not match enrollment data)	n/a	12%	9%
Family			
Family income relative to Federal Poverty Level			
Less than 200% FPL	22%	31%	28%
Greater than 200% FPL	78%	69%	72%
Family size			
One	20%	17%	20%
2 to 4	70%	61%	63%

5 or more, D/R	10%	22%	16%

[a]Sample size of 2,722 represents 4,364,573 insured people in MN in March 2015 in households with a phone and at least one person under age 65. Weighted percentages reported.
[b]Sample size of 1,989 represents 696,715 people in MN insured by one health plan with a phone and at least one person under age 65. Weighted percentages reported (strata+age).
[c]Sample size of 1,834 represents 696,715 people in MN insured by one health plan with a phone and at least one person under age 65. Weighted percentages reported (strata+age).

4.4. Analysis Samples

Table 9 presents the final person-level sample sizes by strata used for analyses in this study. We present analyses for the "augmented" sample that includes all six sample strata and the "standard" for a sample that excludes cases that enrollment records indicated had only MinnesotaCare. Thus, we display both sets of sample sizes here. Note that in some rare cases, enrollment records indicated that a member was enrolled in both MinnesotaCare and another strata (ESI and Medicaid in particular), and these cases were retained.

Table 9: Person-level Sample Sizes by Strata

	Individuals < 65					
	Augmented Sample			**Standard Sample**		
Strata	**CPS**	**ACS**	**Total**	**CPS**	**ACS**	**Total**
ESI	313	248	561	313	246	559
Medicaid	432	476	908	408	450	858
MinnesotaCare	336	299	635	50*	31*	81*
Marketplace	178	152	330	178	152	330
Non-group	640	538	1178	640	538	1178
Transition	90	121	211	70	90	160
TOTAL	1989	1834	3823	1659	1507	3166

*Includes cases enrolled in both MinnesotaCare and another type of coverage.

4.5. Power Calculations

Given that our final analysis sample sizes are smaller than our original targets, we recalculated the minimum detectable differences between the under-reporting rates of the CPS and the ACS samples using the Augmented Sample assuming 80 percent power, a type I error rate of 0.1 (two-sided), and the estimated under-reporting rates provided in Table 2. Under these assumptions, instead of our target of detecting a 2.5 percentage point difference, we can detect a 3.7 percentage point difference for the ESI strata, a 5.7 percentage point difference for the Medicaid strata, and a 4.1 percentage point difference for the non-group strata. We can detect a 6.8 percentage point difference for the MinnesotaCare strata (instead of our target of 4.8 percentage points), and a 7.1 percentage point difference for the marketplace strata (instead of our target of 5.0 percentage points). Stata v15 was used for power calculations.

5. Discussion

While the CHIME study design using enrollment records as a truth source has many strengths, there are several limitations that can influence the results and their generalizability. First, as mentioned earlier, the population of Minnesota is not representative of the U.S. as a whole, and Minnesota has a state health insurance program that charges a premium that could easily be confused with the subsidized coverage from the marketplace. That said, we address one of these challenges by analyzing two separate samples (standard and augmented) to provide estimates for states similar and dissimilar to Minnesota (see Appendix D for guidance).

Second, it is possible that the letter informing policyholders/enrollees included in the study (stating the purpose of the study was to understand "how well the Census Bureau measures health insurance coverage in national surveys") may have had an impact on respondents' recall or the saliency of their coverage type when called to complete the survey. The average time from receipt of the letter and interview date was more than 3 months, likely diminishing the impact of the letter on measurement bias.

Third, our response rate was lower than expected. Response rates for all types of surveys have been declining over the last few decades (Czajka and Beyler 2016). For telephone-based surveys, the declining trend is attributed to a growth in the non-contact rate (e.g., fewer people answer their phone because of caller ID) and a small growth in refusal rates because of frustration with marketing phone calls and survey research in general (Lavrakas et al. 2017). Fortunately, several studies have found that lower response rates are not associated with greater response bias (Groves 2006; Groves et al. 2008; Keeter et al. 2012; Davern et al. 2010).

Fourth, as stated earlier, because the sample was restricted to enrollees of one health insurance plan, we cannot fully determine whether apparent false positives were truly inaccurate. That is, a report of coverage that could not be validated in the enrollment records may be accurate if the person had insurance from another carrier. Thus, while our under-reporting rates are unaffected by this issue, our over-reporting rates may be biased upwards.

Finally, this health insurer covered a relatively small share of the marketplace population in Minnesota (5 percent), compared to 59 percent and 23 percent by the dominant insurers in the marketplace (Burns 2014), and charged higher premiums than most plans offered in Minnesota's marketplace. It is unclear whether this poses challenges to generalizability.

Despite these limitations, the CHIME study is the first post-ACA validation study, the first validation study of the redesigned CPS, the first experimental study for the ACS, and the first study to include subsidized marketplace plans. Overall, the CHIME study used an experimental reverse-record check study design to compare survey responses to administrative insurance records to understand the magnitude, direction, and patterns of misreporting in two important national surveys conducted by the U.S. Census Bureau. The results of CHIME provide researchers, administrators, and policymakers with an understanding of the magnitude, direction, and patterns of misreporting in these two important and widely-used federal surveys. The findings from this study provide much-needed evidence on the reporting accuracy of less-studied coverage types like non-group, marketplace, as well as aggregated categories of public and private coverage. This evidence may be helpful to Census program staff to develop and refine edits and/or to include research notes for data users so that they can make their own adjustments for misreporting. Finally,

the study increases our understanding of the degree to which under-reporting and over-reporting across coverage types offset each other and affect the final estimates of coverage produced by these surveys.

REFERENCES

Blumberg, Stephen J., and Marcie L. Cynamon. 1999. "Misreporting Medicaid Enrollment: Results of Three Studies Linking Telephone Surveys to State Administrative Records." In *Seventh Conference on Health Survey Research Methods*, 189–95.

Boudreaux, Michel H., Kathleen Thiede Call, Joanna Turner, Brett Fried, and Brett O'Hara. 2015. "Measurement Error in Public Health Insurance Reporting in the American Community Survey: Evidence from Record Linkage." *Health Services Research* 50 (6):1973–95. https://doi.org/10.1111/1475-6773.12308.

Burns, K. 2014. "About MNSure: Minnesota's Health Insurance Marketplace."

Call, Kathleen T., Michael E. Davern, Jacob A. Klerman, and Victoria Lynch. 2012. "Comparing Errors in Medicaid Reporting across Surveys: Evidence to Date." *Health Services Research* 48 (2 PART1):652–64. https://doi.org/10.1111/j.1475-6773.2012.01446.x.

Call, Kathleen Thiede, Gestur Davidson, Michael Davern, and Rebecca Nyman. 2008. "Medicaid Undercount and Bias to Estimates of Uninsurance: New Estimates and Existing Evidence." *Health Services Research* 43 (3):901–14. https://doi.org/10.1111/j.1475-6773.2007.00808.x.

Czajka, John L., and Amy Beyler. 2016. "Declining Response Rates in Federal Surveys: Trends and Implications (Background Paper)." *Mathematica Policy Research* I (202). https://www.mathematica-mpr.com/our-publications-and-findings/publications/declining-response-rates-in-federal-surveys-trends-and-implications-background-paper.

Czajka, John, and Kimball Lewis. 1999. "Using Universal Survey Data to Analyze Children's Health Insurance Coverage: An Assessment of Issues." Washington, D.C.

Davern, Michael, Kathleen Thiede Call, Jeanette Ziegenfuss, Gestur Davidson, Timothy J. Beebe, and Lynn Blewett. 2008. "Validating Health Insurance Coverage Survey Estimates: A Comparison of Self-Reported Coverage and Administrative Data Records." *Public Opinion Quarterly* 72 (2):241–59. https://doi.org/10.1093/poq/nfn013.

Davern, Michael, Donna McAlpine, Timothy J. Beebe, Jeanette Ziegenfuss, Todd Rockwood, and Kathleen Thiede Call. 2010. "Are Lower Response Rates Hazardous to Your Health Survey? An Analysis of Three State Telephone Health Surveys." *Health Services Research* 45 (5 PART 1):1324–44. https://doi.org/10.1111/j.1475-6773.2010.01128.x.

Eberly, Todd, Mary Beth Pohl, and Stacey Davis. 2009. "Undercounting Medicaid Enrollment in Maryland: Testing the Accuracy of the Current Population Survey." *Population Research and Policy Review* 28 (2):221–36. https://doi.org/10.1007/s11113-008-9078-5.

Groves, Robert M. 2006. "Nonresponse Rates and Nonresponse Bias in Household Surveys." *Public Opinion Quarterly* 70 (5):646–75. https://doi.org/10.1093/poq/nfl033.

Groves, Robert M, Emilia Peytcheva, Source The, Public Opinion, No Summer, and Robert M Groves. 2008. "American Association for Public Opinion Research The Impact of Nonresponse Rates on Nonresponse Bias : A Meta-Analysis." *The Public Opinion Quarterly* 72 (2):167–89. https://doi.org/10.1093/poq/nfnOl.

Hill, Steven C. 2007. "The Accuracy of Reported Insurance Status in the MEPS." *Inquiry* 44 (4):443–68.

Keeter, Scott, Carolyn Miller, Andrew Kohut, Robert M Groves, and Stanley Presser. 2012. "American Association for Public Opinion Research Consequences of Reducing Nonresponse in a National Telephone Survey" 64 (2):125–48. https://doi.org/10.1093/poq/nf1035.

Klerman, Jacob A, Jeanne S Ringel, and Beth Roth. 2005. "Under-Reporting of Medicaid and

Welfare in the Current Population Survey." *Rand Labor and Population Working Paper Series*, no. April 2014. https://doi.org/10.2139/ssrn.754364.

Lavrakas, Paul J., Grant Benson, Stephen Blumberg, Ismael Flores Cervantes, Leah Christian, David Dutwin, Mansour Fahimi, et al. 2017. "Report from the AAPOR Task Force on 'The Future of U.S. General Population Telephone Survey Research.'" 2017.

Lewis, K, M R Ellwood, and J L Czajka. 1998. "Counting the Uninsured: A Review of the Literature." Washington, D.C. http://www.urban.org/UploadedPDF/occ8.pdf.

Nelson, David E., Betsy L. Thompson, Nancy J. Davenport, and Linda J. Penaloza. 2000. "What People Really Know about Their Health Insurance: A Comparison of Information Obtained from Individuals and Their Insurers." *American Journal of Public Health* 90 (6):924–28. https://doi.org/10.2105/AJPH.90.6.924.

Noon, James M, LE Fernandez, and SR Porter. 2016. "Response Error and the Medicaid Undercount in the Current Population Survey." Center for Administrative Records Research and Applications Working Paper 2016-11. Washington, D.C.

Pascale, Joanne, Marc I. Roemer, and Dean Michael Resnick. 2009. "Medicaid Underreporting in the CPS." *Public Opinion Quarterly* 73 (3):497–520. https://doi.org/10.1093/poq/nfp028.

U.S. Census Bureau. 2016a. "Table DP05 ACS Demographic and Housing Estimates." 2012-2016 American Community Survey. 2016.

———. 2016b. "Table S0501 Selected Characteristics of the Native and Foreign-Born Populationis." 2012-2016 American Community Survey. 2016.

———. 2016c. "Table S1501 Education Attainment." 2011-2016 American Community Survey. 2016. http://factfinder.census.gov/.

———. 2016d. "Table S1601 Language Spoken at Home." 2012-2016 American Community Survey. 2016.

The following four appendices are included as supporting documents to the study design:

Appendix A: Technical Advisory Group (TAG) members
Appendix B: CHIME questionnaire
Appendix C: State-level public program cost-sharing features
Appendix D: Calculator for determining which CHIME results are most relevant by state

Appendix A: CHIME Technical Advisory Group (TAG)

TAG Members:
Jessica Banthin, Congressional Budget Office
Jeff Bontrager, Colorado Health Institute
Michel Boudreaux, State Health Access Data Assistance Center
Robin Cohen, National Center for Health Statistics
Mike Davern, NORC
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Jamie Taber, US Census Bureau
Jessica Vistnes, Agency for Healthcare Research and Quality
Mary Francis Zelenak, US Census Bureau
Jeanette Ziegenfuss, HealthPartners

Appendix B: CHIME Questionnaire

1. Introduction ("Front/Back"): Contact and callback screens

2. Demographics
   A. Household roster (first, middle, last name)
   B. Sex
   C. Relationship to household respondent
   D. Date of birth and age
   E. Hispanic origin
   F. Race
   G. Education (only asked about age 15+)
   H. Armed forces service (only asked about age 15+)
   I. Marital status (only asked about age 15+)
   J. State of residence
   K. Family size and income (ranges mimic program eligibility bands)

3. Labor force (only asked about age 15+)
   A. Any work in 2014 (full or part time)
   B. If not, main reason
   C. If worked, number of weeks worked
   D. Usual hours worked per week
   E. Employer size

4. Unearned Income (only asked about age 15+)
   A. Unemployment compensation
   B. Social Security
   C. SSI
   D. TANF
   E. Food Stamps
   F. WIC
   G. Pension income

5. Health Insurance: asked about all ages
   A. CPS redesign, plus follow-up questions on:
      a. premium amount and unit
      b. metal level
   B. ACS, plus follow-up questions on:
      a. Marketplace (yes/no)
      b. Premium (yes/no)
      c. Subsidy (yes/no)
      d. Premium amount and unit
      e. metal level
      f. pathway to enrollment

6. Wrap Up
   A. Health status
   B. Address
   C. Thank you

1. **FRONT/BACK (display and check items only)**

INITIAL CONTACT SCREENS

LANDCELL
Hello. This is .... from the U.S. Census Bureau. I'm calling to conduct a survey about health insurance. Have I reached you on a cell phone?
1. Yes (this IS a cell phone) ➔ CELLSAFE
2. No (this is NOT a cell phone) ➔ HELLO_NEW
3. Other outcome ➔ PROBCALL
- DK/REF ➔ TY_CLBK

CELLSAFE
Since we have reached you on your cell phone, we want to ensure your safety. Are you currently driving?
1. Yes ➔ TY_CLBK
2. No ➔ HELLO_NEW
3. DK/REF ➔ TY_CLBK

HELLO_NEW
I'd like to speak with someone who lives in your household who is 18 years old or older. [If appropriate]: Would that be you?
1. Respondent is resident 18+ ➔ INTRO_1st
2. Resident 18+ called to phone ➔ INTRO_1st
3. Eligible person not home now or not available now ➔ ID_OTHER
4. No one living in household is 18+ ➔ THANKRES
5. Other outcome ➔ PROBCALL

INTRO_1ST
(If necessary: Hello. This is ... from the U.S. Census Bureau.) We're conducting an important survey on health (care) and we'd like your participation to make the survey as accurate as possible. The survey will take 13 minutes and is voluntary. We are conducting this survey under the authority of Title 13, United States Code, Section 182, and the Office of Management and Budget has approved this survey under project 0607-0983. Title 13, United States Code, Section 9 requires us to keep your information confidential and use it for statistical purposes only.

⇨ ID_SPVR

CALLBACK-ONLY SCREENS: these screens are only used for callbacks -- that is, where an initial contact was made but the interview was not completed. The break-off point may have occurred before even reaching the demographics section, or it may have occurred at some later point in the interview. The fills in these four screens account for these various conditions.

HELLOTWO
May I please speak to <fill RESNAME> ?
1. This is correct person ➔ CB_LANDCELL
2. Correct person called to phone ➔ CB_LANDCELL
3. Person not home or not available now ➔ HELLO_RS
4. Other outcome ➔ PROBCALL

RESNAME FILL instructions:
- If the end of the household roster was reached, use FIRSTNAME LASTNAME of respondent from previous interview
- else if CBNAME is not blank, use CBNAME
- else use "a resident who is 18 years old or older. Would that be you?"

HELLO_RS
Perhaps you can help me. I'd like to speak with a member of this household who is 18 years old or older.
1. Respondent is resident 18+ ➔ CK-NEWRESP
2. Resident 18+ called to phone ➔ CK-NEWRESP
3. Eligible person not home now or not available now ➔ TY_CLBCK
4. No one living in household is 18+ ➔ THANKRES
5. Other outcome ➔ PROBCALL

CK-NEWRESP
- if a new household member (different from the person originally listed as Person 1) is now completing the survey ➔ NEWRESP
- else ➔ CB_LANDCELL

NEWRESP
(FILL instructions: display ROSTER)
To whom am I speaking?
Select appropriate person from displayed household roster ➔ CB_LANDCELL
NOTE: the original HHR is always listed as Person 1. If there is a change in HHR part-way thru the interview, the HHR and all household members remain listed in the same line numbers where they were originally listed, but questions for the new HHR should fill "you" (versus NAME) and questions for the original Person 1 should fill NAME.

CB_LANDCELL
(If necessary: Hello. This is .... from the U.S. Census Bureau). I'm calling to conduct a survey about health insurance. Have I reached you on a cell phone?
1. Yes (this IS a cell phone) ➔ CB_CELLSAFE
2. No (this is NOT a cell phone) ➔ ID_SPVR
3. Other outcome ➔ PROBCALL

DK/REF ➔ TY_CLBK

CB_CELLSAFE
Since we have reached you on your cell phone, we want to ensure your safety. Are you currently driving?
1. Yes ➔ TY_CLBK
2. No ➔ ID_SPVR

DK/REF ➔ TY_CLBK

ID_SPVR
[If HELLOTWO=1 or 2 (correct person is on phone) or HELLO_RS=1 or 2 (resident 18+ is on phone) fill: We recently contacted your household as part of a survey on health insurance coverage that the Census Bureau is conducting.]
[If fill in HELLOTWO was "a resident who is..." then fill: We're conducting an important survey on health (care) and we'd like your participation to make the survey as accurate as possible. The survey will take 13 minutes and is voluntary. We are conducting this survey under the authority of Title 13, United States Code, Section 182, and the Office of Management and Budget has approved this survey under project 0607-0983. Title 13, United States Code, Section 9 requires us to keep your information confidential and use it for statistical purposes only.

This interview may be recorded for quality assurance purposes. Do I have your permission to record this interview?
PERSUADE RESPONDENT TO COMPLETE INTERVIEW NOW IF POSSIBLE.
If the respondent indicates they do not wish to be recorded, please click on the NICE stop recording button located in your CTI Toolkit Agent Desktop.
1. Continue with interview ➔ FIND_QUEST
2. Inconvenient time, callback needed ➔ ID_OTHER
3. Refused to participate ➔ EXITTHNK
4. Language problem ➔ EXITTHNK
5. Refer to supervisor ➔ EXITTHNK

FIND_QUEST

- Press the <END> key for the next unanswered question.

PROBCALL

Person Not Available

1. Respondent wants to be called back at a different number ➔ ID_OTHER
2. No one uses this place as usual residence (for example: vacation home, vacant, business, teen phone line) ➔ THANKRES
3. No one living in household is 18 or older ➔ THANKRES
4. Away, ill, physically or mentally unable, language or hearing problem, bad connection; Nobody available through closeout ➔ EXITTHNK
5. Answering machine/service reached ➔ TY_LAST
6. Refer to Supervisor ➔ TY_LAST
7. Refused interview ➔ EXITTHNK
8. Immediate hangup ➔ TY_LAST

ID_OTHER

Ok that's fine. I'll call back later. Whom should I ask for when I call back? (If appropriate: What number should I call?)

PROBE: If respondent prefers NOT to give their name, use YOUR best judgment and key LADY OF HOUSE or MAN of HOUSE.

[open-text] ➔ store in CBNAME ➔ TY_CLBCK

[Do not allow DK or Refused]

THANKRES

Thank you for your time. Your phone number is not eligible for this survey. ➔ TY_LAST

EXITTHNK

Thank you for your time and cooperation**.** If you'd like to send us any comments about this survey I'd be glad to give you an address. The expiration date for this survey is 12/31/2016. ➔ TY_LAST

READ IF NECESSARY

Paperwork Project 0607-0983
U.S. Census Bureau
4600 Silver Hill Road, Room 3K138
Washington, DC 20233.
e-mail: Paperwork@census.gov (use "Paperwork Project 0607-0983" as the subject).

TY_CLBCK

We will try again at another time. What are the best days and times to call? [record days/times] Thank you for your help.

⇨ TY_LAST

F10_TY_CLBCK

Thank you for your time. I would like to set an appointment to call back at a better time to complete the interview. What are the best days and times to call? [record days/times] Thank you for your help.

⇨ TY_LAST

TY_LAST

End Call

2. DEMOGRAPHICS

FNAME/MNAME/LNAME
What are the names of all persons living or staying here? Let's start with you. (What is your name?)
PROBE: And what is [your/NAME's] middle name?
Fill 1: Is anyone else living or staying here now?
Fill 2: What is the name of the next person living or staying here?
⇨ HHCHECK

HHCHECK
So I have listed [one person/# people] living or staying here now: [READ NAMES]. Is there anyone else living or staying here now -- any babies, small children, non-relatives or anyone else?
- Yes
- No

INTERVIEWER: Please verify that the information on this screen is correct. You will not be able to alter the list of household members after this screen.
⇨ SEX

SEX
ASK ONLY IF NECESSARY:
Person 1: What is your sex?
Persons 2+: And how about NAME? (What is NAME's sex?)
1. Male
2. Female

⇨ CK-RELATE

CK-RELATE
- if single-person household ➔ DOB
- else ➔ RELATE

RELATE
Person 1: How is NAME related to you/Person 1?
Persons 2+: How about NAME? (How is NAME related to you/Person 1?)
19. Self
20. Spouse
21. Unmarried partner
22. Child
23. Grandchild
24. Parent (mother/father)
25. Brother/Sister
26. Other relative (Aunt, Cousin, Nephew, Mother-in-Law, etc.)
27. Foster child
28. Housemate/Roommate
29. Other non-relative

DK/Ref
⇨ DOB
NOTE: Once the roster is collected, household members maintain their original line number throughout the entire survey. "Person 1" will always start off as the HHR, but if there's a break-off/callback and the interviewer cannot reach the original household respondent, a different household member may serve as the new household respondent. In these cases the wording above would fill the name of the original household respondent as "Person 1" rather than "you."

DOB
Person 1: What is your date of birth?
Persons 2+: And how about NAME? (What is NAME's date of birth?)
- MONTH
- DAY
- YEAR
- DK/REF

Skips:
- if day/month combination is are not possible (e.g.: February 30) ➔ MONTH_CHECK
- else if MONTH=DK or Ref ➔ AGEGSS
- else if DAY=DK or Ref ➔ AGEGSS
- else ➔ VERIFY_AGE

Note: complete series from DOB thru to AGE2 about each person before moving on to the next person on the roster

VERIFY_AGE
As of last week, that would make [you/NAME] [if YEAR=DK fill: approximately] [agefill] years old. Is that correct?
1. Yes ➔ HSPNON
2. No ➔ AGEGSS
- DK ➔ AGEGSS
- Ref ➔ AGE2

AGEGSS
Even though you don't know [NAME's] exact birth date, what is your best guess as to how old [he/she] was on [his/her] last birthday?
<number> ➔ HSPNON
- DK/REF ➔ AGE2

AGE2
ASK IF NECESSARY
Is he/she under 15, 15 to 64, or 65 or older?
1. under 15 years old
2. 15-64 years old
3. 65 years old or older
- DK
- Ref

⇨ **HSPNON**

THSPNON
Person 1: Are you Spanish, Hispanic, or Latino?
Persons 2+: And how about NAME? (Is NAME Spanish, Hispanic, or Latino?**)**
1. Yes
2. No
- DK
- Ref

⇨ RACE

RACE
Person 1: I am going to read you a list of five race categories. Please choose one or more races that you consider yourself to be: White; Black or African American; American Indian or Alaska Native; Asian; OR Native Hawaiian or Other Pacific Islander.
Persons 2+: And how about NAME? (Please choose one or more races that NAME considers himself/herself to be: White; Black or African American; American Indian or Alaska Native; Asian; OR Native Hawaiian or Other Pacific Islander).
Do not probe unless response is Hispanic or a Hispanic origin.

Enter all that apply.
1. White
2. Black or African American
3. American Indian or Alaska Native
4. Asian
5. Native Hawaiian or Other Pacific Islander
6. Other [DO NOT READ] => **RACEOT:** What is his/her/your race? [open text]

- DK/Ref

⇨ **EDUCA**

EDUCA
ASK ONLY FOR PEOPLE AGE 15+
Person 1: What is the highest level of school you have completed or the highest degree you have received?
Persons 2+: And how about NAME? (What is the highest level of school NAME has completed or the highest degree NAME has received?)
31. Less than 1st grade
32. 1st,, 2nd, 3rd or 4th grade
33. 5th or 6th grade
34. 7th or 8th grade
35. 9th grade
36. 10th grade
37. 11th grade
38. 12th grade, NO DIPLOMA
39. HIGH SCHOOL GRADUATE, High school DIPLOMA or the equivalent (For example: GED)
40. Some college but no degree
41. Associate degree in college; Occupational/vocational program
42. Associate degree in college; Academic program
43. Bachelor's degree (For example: BA, AB, BS)
44. Master's degree (For example: MA, MS, MEng, Med, MSW, MBA)
45. Professional School Degree (For example: MD, DDS, DVM, LLB, JD)
46. Doctorate degree (For example: PhD, EdD)

- DK/Ref

⇨ AFEVER

AFEVER
ASK ONLY FOR PEOPLE AGE 15+
Person 1: Did you ever serve on active duty in the U.S. Armed Forces**?**
Persons 2+: And how about NAME? (Did NAME ever serve on active duty in the U.S. Armed Forces**?)**
1. Yes
2. No

- DK/REF

⇨ MARITL

MARITL
READ IF NECESSARY; ASK ONLY FOR PEOPLE AGE 15+
[NOTE: If reference person reports being married to any other household member in RELATE, store "married" in MARITL for both the reference person and his/her spouse and do not ask this question for either of them.]
Person 1: Are you now married, widowed, divorced, separated, or never married?
Persons 2+: And how about NAME? (Is NAME now married, widowed, divorced, separated, or never married?)
1. Married
2. Widowed
3. Divorced
4. Separated
5. Never married

- DK/Ref

⇨ STATE

STATE
What state do you live in?
[menu with hard-coded state codes for all 50 states plus District of Columbia]
⇨ HHINC

FAMSIZE
To better understand the affordability of health care, we're interested in your family's income, which would include your income plus the income of your spouse and any children or stepchildren under 19 who are living with you. [If household respondent's unmarried partner lives in the household AND the household respondent has at least one child who lives in the household then fill: If [UNMARRIED PARTNER NAME] is the parent of any of the children in this household, please count [UNMARRIED PARTNER NAME] as family]. Your family size, including you, is…
1. One person
2. Two people
3. Three people
4. Four people
5. Five people
6. Six people
7. Seven people
8. Eight people
9. Nine people
10. Ten or more people
- DK/Ref

FAMINC
Please tell me the category that best describes your family's total income during 2014 before taxes and other deductions. Your best estimate is fine.
[AUTHOR NOTE: use answer to FAMSIZE along with table below to determine how to fill response categories 1-4]
1. Response category 1
2. Response category 2
3. Response category 3
4. Response category 4
- DK/Ref
⇨ JOBS

FAMSIZE answer	Response item 1 (at or below 138%)	Response item 2 (above 138% and less than 200%)	Response item 3 (at or above 200% and less than 400%)	Response item 4 (above 400%)
One person	At or below $16,200	Above $16,200 and less than $23,400	At or above $23,400 and less than $46,700	At or above $46,700
Two people	At or below $21,800	Above $21,800 and less than $31,500	At or above $31,500 and less than $63,000	At or above $63,000
Three people	At or below $27,400	Above $27,400 and less than $39,600	At or above $39,600 and less than $79,200	At or above $79,200
Four people	At or below $33,000	Above $33,000 and less than $47,700	At or above $47,700 and less than $95,400	At or above $95,400
Five people	At or below $38,600	Above $38,600 and less than $55,900	At or above $55,900 and less than $111,700	At or above $111,700

Six people	At or below $44,200	Above $44,200 and less than $64,000	At or above $64,000 and less than $127,900	At or above $127,900
Seven people	At or below $50,000	Above $50,000 and less than $72,100	At or above $72,100 and less than $144,200	At or above $144,200
Eight people	At or below $55,400	Above $55,400 and less than $80,200	At or above $80,200 and less than $160,400	At or above $160,400
Nine people	At or below $61,000	Above $61,000 and less than $88,300	At or above $88,300 and less than $176,600	At or above $176,600
Ten or more people	At or below $66,600	Above $66,600 and less than $96,500	At or above $96,500 and less than $192,900	At or above $192,900

3. LABOR FORCE
NOTE: Questions only asked of household members 15+

JOBS
(Next I have some questions about work experience.) (First/Next I'd like to ask you about yourself/NAME). Did [you/NAME] work at a job or business at any time during 2014?
1. Yes ➔ WKSWORK
2. No ➔ PART
- DK/Ref ➔ PART

PART
Did [you/NAME] do any temporary, part-time, or seasonal work even for a few days during 2014?
1. Yes ➔ WKSWORK
2. No ➔ NOWRK
- DK/Ref ➔ CK_MORE_JOBS

NOWRK
What was the main reason [you/NAME] did not work in 2014?
1. Ill, or disabled and unable to work
2. Taking care of home or family
3. Going to school
4. Retired
5. No work available
6. Other (please specify) ➔ **NOWRKSP** (open-text specify)
- DK/Ref
⇨ CK_MORE_JOBS

WKSWORK
During 2014 in how many weeks did [you/NAME] work even for a few hours? Include paid vacation and sick leave as work.
PROBE: If respondent can only answer in months, multiply the number of months by four to derive number of weeks and ask if that number sounds about right.
- [number of weeks (1-52)] ➔ HRSWEEK
- DK ➔ EMP_SIZE
- Ref ➔ EMP_SIZE

HRSWEEK (Q41)
In the weeks that [you/NAME] worked, how many hours did [you/NAME] usually work per week?
- [number of hours, 1-168]
- DK/Ref
⇨ EMP_SIZE

EMP_SIZE
Counting all locations where your/NAME's employer operates, what is the total number of persons who work for that employer?
READ IF NECESSARY: If you/NAME works for more than one employer, answer for the largest employer.
1. Less than 10
2. 10-50
3. 51-99
4. 100-499
5. 500-999
6. 1000+
- DK/REF
⇨ CK_MORE_JOBS

CK_MORE_JOBS

- if there are more people age 15+ ➔ back to JOBS
- else ➔ CK-UNEMP

4. UNEARNED INCOME

CK-UNEMP:

- if SUBJECT did not work all year (PART=no) or worked less than 35 weeks (WKSWORK<35) or is retired (NOWRK=4) ➔ UNEMP
- else ➔ SSYN

UNEMP

(Now I have some questions about benefits.) (First/Next I'd like to ask you about yourself/NAME). At any time during 2014 did [you/NAME] receive any State or Federal unemployment compensation?

1. Yes
2. No

- DK/Ref

⇨ CK-SSYN

CK-SSYN

- if there are more people age 15+ ➔ back to CK-UNEMP for next person on the roster
- else ➔ SSYN

SSYN (56a)

(Now I have some questions about benefits.) During 2014 did (you/anyone in this household) receive any Social Security payments from the U.S. Government?

1. Yes ➔ if single-person household ➔ SSWHO
2. No ➔ SSIYN

- DK/Ref ➔ SSIYN

SSWHO (56b)

Who received Social Security payments either for themselves or as combined payments with other family members?
PROBE: Anyone else?

- [display hh roster]
- DK/Ref

➔ SSIYN

SSIYN (57a)

During 2014 did (you/anyone in this household) receive any SSI payments, that is, Supplemental Security Income?
Note: SSI are assistance payments to low-income aged, blind and disabled persons, and come from state or local welfare offices, the Federal government, or both.

1. Yes ➔ SSIWHO
2. No ➔ TANFYN

- DK/Ref ➔ TANFYN

SSIWHO (57b)

Who received SSI?
PROBE: Anyone else?

⇨ TANFYN

TANFYN (59a88)
At any time during 2014, even for one month, did (you/anyone in this household) receive any CASH assistance from a state or county welfare program [fill state-specific name]?
PROBE: Include cash payments from:
Welfare or welfare-to-work programs,
Temporary Assistance for Needy Families program (TANF),
Aid to Families with Dependent Children (AFDC),
General Assistance/Emergency Assistance program,
Diversion Payments,
Refugee Cash and Medical Assistance program,
General Assistance from Bureau of Indian Affairs, or
Tribal Administered General Assistance.
PROBE: Do not include food stamps, Supplemental Nutrition Assistance Program (SNAP) benefits, SSI, energy assistance, WIC, school meals or transportation, childcare, rental, or educational assistance.
1. Yes ➔ TANFWHO
2. No ➔ FSYN
- DK/Ref ➔ FSYN

TANFWHO (59b_88)
Who received this cash assistance?
PROBE: Anyone else?
- display hh roster]
- [no one selected]
- DK/Ref

➔ FSYN

FSYN (Q87ar)
At any time during 2014, even for one month, did (you/anyone in this household) receive any food assistance from [fill state-specific name]?
PROBE: Do not include WIC benefits.
PROBE: Include SNAP (Supplemental Nutrition Assistance Program).
1. Yes ➔ FSWHO
2. No ➔ CK-WIC
- DK/Ref ➔ CK-WIC

FSWHO (Q88)
Which of the people now living here were covered by food stamps during 2014?
PROBE: Anyone else?
1. [display hh roster]
2. [no one selected]
- DK/Ref

➔ CK-WIC

CK-WIC
- if there is at least one female age 15-64 in the household ➔ WICYN
- else ➔ PENSYN

WICYN
At any time during 2014, (was/were) (you/ anyone in this household) on WIC, the Women, Infants, and Children Nutrition Program?
1. Yes ➔ WICWHO
2. No ➔ PENSYN
- DK/Ref ➔ PENSYN

WICWHO
Who received WIC for themselves or on behalf of a child?
PROBE: Anyone else?
⇨ PENSYN

PENSYN (Q62A)
During 2014 did (you/anyone in this household) receive any pension or retirement income from a previous employer or union, or any other type of retirement income (other than Social Security)?
1. Yes ➔ PENSWHO
2. No ➔ HEALTH_TREAT
- DK/Ref ➔ HEALTH_TREAT

PENSWHO (Q62b)
Who received pension or retirement income?
PROBE: Anyone else?
- [display hh roster]
- [DK/REF/no one selected]

➔ HEALTH_TREAT

HEALTH_TREAT
- If 1st digit in case ID=1 then ➔ CPS health insurance module (HINTRO)
- Else if 1st digit in case ID=y then ➔ ACS health insurance module (ACSJOB)

5A. HEALTH INSURANCE: CPS Health Insurance Module
Section A: Coverage Status (Leader)

HINTRO
These next questions are about health coverage between January 1, [CY-1] and now.
- Press 1 to continue ➔ PINTRO

PINTRO
[First/Next] I'm going to ask about [your/NAME's] health coverage.
- Press 1 to continue ➔ CK-MCARE1

CK-MCARE1
Is NAME either 65+?
- Yes ➔ MCARE1
- No ➔ ANYCOV

MCARE1
Medicare is health insurance for people 65 years and older and people under 65 with disabilities. [Are you/Is NAME] NOW covered by Medicare?
- Code Medicare Parts A, B and C and Medicare Advantage as "Yes".

1. Yes ➔ BEFORAFT_LC1
2. No/DK/REF ➔ ANYCOV

ANYCOV
[Do you/Does NAME] NOW have any type of health plan or health coverage?
1. Yes ➔ SRCEGEN_LC1
2. No/DK/REF ➔ MEDI

MEDI
[Are you/Is NAME] NOW covered by Medicaid, Medical Assistance [or] CHIP [if MCARE1 not yet asked: or Medicare]?
1. Yes ➔ GOVTYPE_LC1
2. No/DK/REF ➔ OTHGOVT

OTHGOVT
[Are you/Is NAME] NOW covered by a state or government assistance program that helps pay for healthcare, such as MinnesotaCare, Minnesota Comprehensive Health Association (MCHA), PMAP, MNsure or healthcare.gov?
[NOTE: Minnesota example is shown; question text fills all known state-specific program names for Medicaid and CHIP, all state-specific government program names, and all state-specific names for marketplace coverage]
- Stop reading the list if respondent says "YES."

1. Yes ➔ GOVPLAN_LC1
2. No/DK/REF ➔ If ever served in Armed Forces (AFEVER=1) ➔ VET; else ➔ VERIFY

VET
[Are you/Is NAME] NOW covered by Veteran's Administration (VA) care?
1. Yes ➔ BEFORAFT_LC1
2. No/DK/REF ➔ VERIFY

VERIFY
I have recorded that [you are/NAME is] not currently covered by a health plan. Is that correct?
1. Yes, is NOT covered ➔ ADDOTH1_L
2. No, is covered ➔ SRCEGEN_LC1
3. DK/REF ➔ ADDOTH1_L

Section B: Plan Type (Leader, Current Loop)

SRCEGEN_LC1
ASK OR VERIFY
For the coverage you/NAME has/have NOW, [do you/does NAME] get it through a job, the government or state, or some other way?
- **JOB:** Former job/Retiree, Union, Spouse/parent's job, Job with the government, COBRA, TRICARE/TRICARE for Life
- **GOVERNMENT OR STATE:** Medical Assistance, Medicaid, Medicare (Parts A+B; Part C), Medicare Advantage, State-provided health coverage, VA Care/CHAMPVA/other military
- **OTHER:** Privately purchased, Parent or spouse, Medicare Supplements, Exchange plan/Marketplace, Group or association, School,
- **IF RESPONDENT CHOOSES MORE THAN ONE:** Ok let's talk about one plan at a time. Which would you like to tell me about first?

If VERIFY=2 then fill: ◆If respondent is not covered, go back to VERIFY and select "Yes"
1. Job (current or former) ➔ MILPLAN_LC1
2. Government or State ➔ JOBCOV_LC1
3. Other way ➔ SRCEDEPDIR_LC1
- DK/REF ➔ SRCEDEPDIR_LC1

SRCEDEPDIR_LC1
- ASK OR VERIFY

[Do you/Does NAME] get that coverage through a parent or spouse, [do you/does he/she] buy it [yourself/himself/herself], or [do you/does he/she] get it some other way?
PARENT/SPOUSE: Parent, Spouse
BUY IT DIRECTLY: Buy it, Parent or spouse buys it, Medicare Supplement
SOME OTHER WAY: Former employer, Group or association, Indian Health Service, School
1. Parent or spouse ➔ POLHOLDER_LC1
2. Buy it ➔ POLHOLDER_LC1
3. Other way ➔ SRCEOTH_LC1
- DK/REF ➔ SRCEOTH_LC1

SRCEOTH_LC1
- ASK OR VERIFY

[Do you/Does NAME] get it through a former employer, a union, a group or association, the Indian Health Service, a school, or some other way?
1. Former employer ➔ POLHOLDER_LC1
2. Union ➔ POLHOLDER_LC1
3. Group or association ➔ POLHOLDER_LC1
4. Indian Health Service ➔ BEFORAFT_LC1
5. School ➔ POLHOLDER_LC1
6. Some other way ➔ GOVPLAN_LC1
- DK/REF ➔ GOVPLAN_LC1

JOBCOV_LC1
Is that coverage related to a JOB with the government or state?
- Include coverage through FORMER employers and unions, and COBRA plans.

1. Yes ➔ MILPLAN_LC1
2. No ➔ GOVTYPE_LC1
- DK/REF ➔ GOVTYPE_LC1

Soft edit: If "yes" and no one in the household was reported to have a job (more than part time, seasonal or temp work), nor is anyone in the household a retiree, then ask soft edit: "Can I just check -- I recorded that this coverage is related to a JOB. Is that correct?"
◆If this is correct, continue to MILPLAN_LC1
◆If this is not correct, go back to JOBCOV_LC1 and correct

MILPLAN_LC1

- ASK OR VERIFY

Is that plan related to military service in any way?

- Examples of military plans include:

- VA Care
- TRICARE
- TRICARE for Life
- CHAMPVA
- Other military care

1. Yes ➔ MILTYPE_LC1
2. No ➔ POLHOLDER_LC1

- DK/REF ➔ POLHOLDER_LC1

GOVTYPE_LC1

- ASK OR VERIFY

Is that coverage Medicaid, CHIP, Medicare, a plan through the military, or some other program?

- Code Medicare Parts A, B and C and Medicare Advantage as "Medicare".

IF R CHOOSES MORE THAN ONE: Ok let's talk about one plan at a time. Which would you like to tell me about first?

1. Medicaid or Medical Assistance ➔ GOVPLAN_LC1
2. CHIP ➔ PORTAL_LC1
3. Medicare ➔ soft edit then ➔ BEFORAFT_LC1
4. Military ➔ MILTYPE_LC1
5. Other ➔ GOVPLAN_LC1

- DK/REF ➔ GOVPLAN_LC1

Soft edit: if Medicare is selected and NAME is under 65 ask: "There are two programs that sound a lot alike. MediCARE is for people 65 years and older, or people under 65 with disabilities. MediCAID is a government-assistance plan for those with low-incomes or a disability. Just to be sure, which program are you/is NAME covered by?"

- If Medicare is correct, suppress and continue.
- If Medicare is not correct, go back to GOVTYPE_LC1 and correct.

MILTYPE_LC1

- ASK OR VERIFY

Is that plan through TRICARE, TRICARE for Life, CHAMPVA, VA care, military health care, or something else?

1. TRICARE
2. TRICARE for Life
3. CHAMPVA
4. Veterans Administration (VA) care
5. Military health care
6. Other

- DK/REF

[all] ➔ POLHOLDER_LC1

POLHOLDER_LC1

- ASK OR VERIFY

Whose name is the policy in? (Who is the policyholder)?

1. *household member 1*
2. *household member 2*

……

16. *household member 16*
17. Someone living outside the household

- DK/REF

[all] ➔ CK-SRCEPTSP_LC1

CK-SRCEPTSP_LC1

- If SRCEDEPDIR_LC1 = "parent or spouse" then ➔ SRCEPTSP_LC1
- Else if SRCEDEPDIR_LC1=2 = "buy it" then ➔ PORTAL_LC1
- Else ➔ CK-HIPAID_LC1

SRCEPTSP_LC1

- ASK OR VERIFY

Do they get that coverage through their job, do they buy it themselves, or do they get it some other way?

1. Job (current or former) ➔ HIPAID_LC1
2. Buy it ➔ PORTAL_LC1
3. Other way ➔ GOVPLAN_LC1

- DK/REF ➔ GOVPLAN_LC1

GOVPLAN_LC1

- ASK OR VERIFY

What do you call the program?

IF RESPONDENT ANSWERS WITH INSURANCE COMPANY NAME: OK, so that would be the plan name. What do you call the program? Some examples of programs in [STATE] are [read full list below].

NOTE: Some response categories are generic (regardless of state) and some are state-specific. The generic response categories are: 1,2,3,13,17 and 18. Response categories 4-12 fill up to nine state-specific names for Medicaid, CHIP and other state-sponsored government programs. If there are fewer than nine, only response categories with a program name are displayed. Response categories 14-16 display the state-specific names for the Marketplace and only response categories with Marketplace names are displayed.

1. Medicaid
2. Medical Assistance
3. Indian Health Service
4. MinnesotaCare
5. Minnesota Comprehensive Health Association (MCHA)
6. PMAP
13. Healthcare.gov
16. Plan through MNsure
17. Other government plan
18. Other (please specify)

- DK/REF

Skip Instructions

- if 3 (IHS) ➔ BEFORAFT_LC1
- else if 17, 18 (non-specific other government plan or other/specify) then ➔ MISCSPEC_LC1
- else if 13-16 (marketplace plan) then ➔ POLHOLDER2_LC1
- all others (Medicaid, CHIP, state-specific government plan, DK, REF) ➔ PORTAL_LC1

MISCSPEC_LC1

[open text; 65 characters] ➔ PORTAL_LC1

PORTAL_LC1

- ASK OR VERIFY

Is that coverage through MNsure, which may also be known as healthcare.gov?

1. Yes ➔ EXCHTYPE_LC1
2. No ➔ CK-POLHOLDER2_LC1

- DK/REF ➔ CK-POLHOLDER2_LC1

EXCHTYPE_LC1

◆ ASK OR VERIFY

What do you call it – MNsure or healthcare.gov?

1. MNsure
2. Healthcare.gov

- DK/REF

[all] ➔ CK-POLHOLDER2_LC1

CK-HIPAID_LC1

Is coverage related to employment?

- Yes ➔ HIPAID_LC1
- No ➔ BEFOREAFT_LC1

HIPAID_LC1

Does (name's/policyholder names's) employer or union pay for all, part, or none of the health insurance premium?

◆ Report here employer's contribution to employee's health insurance premiums, not the employee's medical bills.

1. All
2. Part
3. None

- DK/REF

[all] ➔ BEFOREAFT_LC1

CK-POLHOLDER2_LC1

Was POLHOLDER_LC1 already asked?

- Yes ➔ PREMYN_LC1
- No ➔ POLHOLDER2_LC1

POLHOLDER2_LC1

◆ ASK OR VERIFY

Whose name is the policy in (Who is the policyholder)?

1. *household member 1*
2. *household member 2*

……

16. *household member 16*
17. Someone living outside the household

- DK/REF

[all] ➔ PREMYN_LC1

PREMYN_LC1

Is there a monthly premium for this plan?

◆ **READ IF NECESSARY:** A monthly premium is a fixed amount of money people pay each month to have health coverage. It does not include copays or other expenses such as prescription costs.

1. Yes ➔ PREMSUBS_LC1
2. No ➔ METAL_LC1

- DK/REF ➔ METAL_LC1

PREMSUBS_LC1
Is the cost of the premium subsidized based on [if single-person hh and NAME is policyholder fill: your/else fill: family] income?

- **READ IF NECESSARY:** A monthly premium is a fixed amount of money people pay each month to have health coverage. It does not include copays or other expenses such as prescription costs.
- **READ IF NECESSARY:** Subsidized health coverage is insurance with a reduced premium. Low and middle income families are eligible to receive tax credits that allow them to pay lower premiums for insurance bought through healthcare exchanges or marketplaces.

1. Yes
2. No

- DK/REF

[all] ➔ PREMCOST_LC1

PREMCOST_LC1
How much is the premium for this plan?
READ IF NECESSARY: A monthly premium is a fixed amount of money people pay each month to have health coverage. It does not include copays, deductibles, or other expenses such as prescription costs.
[open text] ➔ PREMUNIT_LC1

- DK/REF ➔ METAL_LC1

PREMUNIT_LC1
ASK OR VERIFY
Is that per month, quarter, year, or some other time period?

1. Every 2 weeks
2. Month
3. Quarter
4. Year
5. Other (please specify) ➔ UNITSP_LC1 (open-text specify)

- DK/Ref
  ⇨ METAL_LC1

METAL_LC1
Some health plans are sold at different levels of coverage: bronze, silver, gold and platinum. And some people, including young people under 30, can purchase a catastrophic plan. Is this plan a…
[READ LIST; ENTER ONLY ONE].
NOTE: Catastrophic plans are only available for those under 30 years old or those with a "hardship exemption"

1. Bronze
2. Silver
3. Gold
4. Platinum or a
5. Catastrophic plan or
6. None of the above?

- DK/Ref
  ⇨ BEFORAFT_LC1

Section C: Months of Coverage (Leader, Current Loop)

BEFORAFT_LC1
Did [your/NAME's] coverage from [PLANTYPE] start before January 1, [CY-1]?
- **READ IF NECESSARY:** Your best estimate is fine.

If PLANTYPE is job-related fill:
- **READ IF NECESSARY:** If [you/POLICYHOLDER NAME] switched employers or plans through [your/their] employer, consider it the same plan.

If PLANTYPE is directly-purchased fill:
- **READ IF NECESSARY:** If [you/POLICYHOLDER NAME] switched plans that you/he/she buys, consider it the same plan.

1. Yes ➔ CNTCOV_LC1
2. No ➔MNTHBEG1_LC1
- DK/REF ➔ ANYTHIS_LC1

MNTHBEG1_LC1
In which month did that coverage start?
- **READ IF NECESSARY:** Your best estimate is fine.

If PLANTYPE is job-related fill:
- **READ IF NECESSARY:** If [you/POLICYHOLDER NAME] switched employers or plans through [your/their] employer, consider it the same plan.

If PLANTYPE is directly-purchased fill:
- **READ IF NECESSARY:** If [you/POLICYHOLDER NAME] switched plans that you/he/she buys, consider it the same plan.
- This question refers to [PLANTYPE].

1. January
2. February

……..

12. December
- DK/REF

If MNTHBEG1_LC1=current month or earlier ➔ YEARBEG1_LC1
If MNTHBEG1_LC1= later than current month ➔ CNTCOV_LC1
If MNTHBEG1_LC1= (D/R) ➔ ANYTHIS_LC1

YEARBEG1_LC1
- ASK OR VERIFY

Which year was that?
If PLANTYPE is job-related fill:
- **READ IF NECESSARY:** If [you/POLICYHOLDER NAME] switched employers or plans through [your/their] employer, consider it the same plan.

If PLANTYPE is directly-purchased fill:
- **READ IF NECESSARY:** If [you/POLICYHOLDER NAME] switched plans that you/he/she buys, consider it the same plan.
- This question refers to [PLANTYPE].

1. CY-1 ➔ CNTCOV_LC1
2. CY ➔ CNTCOV_LC1
- DK/REF ➔ ANYTHIS_LC1

CNTCOV_LC1
Has it been continuous since [January, CY-1/month and year from MNTH/YRBEG1]?
If PLANTYPE is job-related fill:
- **READ IF NECESSARY:** If [you/POLICYHOLDER NAME] switched employers or plans through [your/their] employer, consider it the same plan.

If PLANTYPE is directly-purchased fill:
- **READ IF NECESSARY:** If [you/POLICYHOLDER NAME] switched plans that you/he/she buys, consider it the same plan.
- **READ IF NECESSARY:** If the gap in coverage was less than three weeks, consider the coverage "continuous."
- This question refers to [PLANTYPE].

1. Yes ➔ CK-OTHMEMB_LC1
2. No ➔ MNTHBEG2_LC1

- DK ➔ MNTHBEG2_LC1
- REF ➔ ANYTHIS_LC1

MNTHBEG2_LC1
In which month did this most recent period of coverage start?
- **READ IF NECESSARY:** Your best estimate is fine.

If PLANTYPE is job-related fill:
- **READ IF NECESSARY:** If [you/POLICYHOLDER NAME] switched employers or plans through [your/their] employer, consider it the same plan.

If PLANTYPE is directly-purchased fill:
- **READ IF NECESSARY:** If [you/POLICYHOLDER NAME] switched plans that you/he/she buys, consider it the same plan.
- This question refers to [PLANTYPE].

1. January
2. February

……..

12. December

- DK/REF

If MNTHBEG2_LC1=current month or earlier ➔ YEARBEG2_LC1
If MNTHBEG2_LC1= later than current month ➔ SPELLADD_LC1
Else If MNTHBEG2_LC1= (D/R) ➔ if covered all months of CY => ANYLAST_LC1; else ➔ ANYTHIS_LC1

YEARBEG2_LC1
- ASK OR VERIFY

Which year was that?
If PLANTYPE is job-related fill:
- **READ IF NECESSARY:** If [you/POLICYHOLDER NAME] switched employers or plans through [your/their] employer, consider it the same plan.

If PLANTYPE is directly-purchased fill:
- **READ IF NECESSARY:** If [you/POLICYHOLDER NAME] switched plans that you/he/she buys, consider it the same plan.
- This question refers to [PLANTYPE].

1. [CY-1] ➔ SPELLADD_LC1
2. [CY] ➔ SPELLADD_LC1

- DK ➔ if covered all months of CY ➔ ANYLAST_LC1; else ➔ ANYTHIS_LC1
- REF ➔ if covered all months of CY ➔ ANYLAST_LC1; else ➔ ANYTHIS_LC1

SPELLADD_LC1
I have recorded that [you were/NAME was] covered by [PLANTYPE] in [read months covered]. Were there any OTHER months between January [CY-1] and now that [you were/NAME was] also covered by [PLANTYPE]?
1. Yes ➔ if covered all months of CY ➔ ANYLAST_LC1; else ➔ ANYTHIS_LC1
2. No ➔ CK-OTHMEMB_LC1
- DK/REF ➔ CK-OTHMEMB_LC1

ANYTHIS_LC1
Which months [were you/was NAME] covered by [PLANTYPE] THIS year – in [CY]?
- Choose all months that apply

1. January
2. February
3. March
4. April
20. All months of CY
21. No months of CY
- DK/REF

[all] ➔ ANYLAST_LC1

ANYLAST_LC1
Which months [were you/was NAME] covered by [PLANTYPE] LAST year – in [CY-1]?
- Choose all months that apply

1. January
2. February

……..
12. December
20. All months of CY-1
21. No months of CY-1
- DK/REF

[all] ➔ CK-OTHMEMB_LC1

CK-OTHMEMB_LC1
Does this household have 2 or more members?
- Yes ➔ OTHMEMB_LC1
- No ➔ CK-OTHOUT_LC1

Section D: Other Household Members Covered by Leader's Plan, and Months Covered (Current Loop)

OTHMEMB_LC1
Between January 1, [CY-1] and now, was anyone in the household other than [you/NAME] ALSO covered by [PLANTYPE]?
1. Yes ➔ COVWHO_LC1
2. No ➔ CK-OTHOUT_LC1
- DK/REF ➔ CK-OTHOUT_LC1

Hard edit: If NAME is a dependent on a job or direct-purchase plan and OTHMEMB_LC1 ne "yes" (that is, the respondent fails to report that the policyholder is also on the plan) store a "Yes"

COVWHO_LC1
Who else was covered? (Who else was covered by [PLANTYPE]?)
- **PROBE:** Anyone else?

0. *household member 1*
1. *household member 2*

……
16. *household member 16*
96. all persons listed
97. DK/REF

- Any household member ➔ CK-SAMEMNTHS_LC1
- DK/REF => CK-OTHOUT_LC1

Hard edit: If NAME is a dependent on a job or direct-purchase plan and the policyholder is not selected, store policyholder's name in COVWHO_LC1

CK-SAMEMNTHS_LC1
- If leader was covered all months ➔ SAMEMNTHS_LC1
- If leader was NOT covered all months ➔ MNTHS_LC1

SAMEMNTHS_LC1
[Was/Were] [NAME/NAMEs] also covered from January 1, CY-1 until now?
- This question refers to [PLANTYPE].

1. Yes (all also covered from January CY-1 until now) ➔ CK-OTHOUT_LC1
2. No (at least one person not covered from January, CY-1 until now)

- DK/REF ➔ MNTHS_LC1

MNTHS_LC1
[First person] Which months between January [CY-1] and now was [NAME from COVWHO_LC1] covered?
[Second+ person] How about NAME? (Which months between January [CY-1] and now was [NAME] covered?)
- Choose all months that apply
- This question refers to [PLANTYPE].

1. January CY-1
2. February CY-1

……..
12. December CY-1
13. January CY
14. February CY
15. March CY
16. April CY
17. DK/REF
20. All months from January 2013 until now
21. No months from January 2013 until now

[all] ➔ Loop through all persons reported in COVWHO_LC1; then =>CK-OTHOUT_LC1

CK-OTHOUT_LC1
- If PLANTYPE is private ➔ OTHOUT_LC1
- Else ➔ CK-ADDGAP1_L

OTHOUT_LC1
Does that plan cover anyone living outside this household?
1. Yes ➔ OTHWHO_LC1
2. No ➔ CK- ADDGAP1_L
- DK/REF ➔ CK- ADDGAP1_L

OTHWHO_LC1
How old are they – under 19, 19-25 or older than 25? [MARK ALL THAT APPLY]?
1. Under 19
2. 19-25 years old
3. Older than 25
- DK/REF

[all] ➔ CK-ADDGAP1_L

Additional Plans for Leader
CK-ADDGAP1_L
Are there any gaps in coverage for NAME?
- Yes (gaps in coverage) ➔ ADDGAP1_L
- No (no gaps in coverage) ➔ ADDOTH1_L

ADDGAP1_L
So far, I have recorded that [you were/NAME was] NOT covered in [months not covered]. [Were you/Was NAME] covered by any type of health plan or health coverage in [that/those] month(s)?
- **READ IF NECESSARY:** Do not include plans that cover only one type of care, such as dental or vision plans.

1. Yes ➔ SRCEGEN_LP1
2. No ➔ ADDOTH1_L
- DK/REF ➔ ADDOTH1_L

Past Loop
The Past Loop is designed to capture plan type, months of coverage, other household members covered by the same plan, and the months they were covered. As such, the Past Loop consists of all items in Sections B through D above, but with the following exceptions. First, all items in the Past Loop are worded in the past tense. Second, for Section C of the past loop, there is only a single item asking about months of coverage. This is because for current coverage the questionnaire anchors the respondent in their day-of coverage and then establishes the start month of the spell. For coverage that is not held on the day of the interview it is not possible to employ this same technique so we simply ask what months throughout the 16-month reference period the coverage was held, as follows:

WMNTHS_LP1
Which months between January [CY-1] and now [were you/was NAME] covered by [PLANTYPE]?
- Choose all months that apply

1. January CY-1
2. February CY-1

……..

12. December CY-1
13. January CY
14. February CY
15. March CY
16. April CY
17. DK/REF
20. All months from January 2013 until now

21. No months from January 2013 until now
[all] ➔ CK-OTHMEMB_LP1
Once months of coverage are established for the leader, the respondent skips to Section D to determine whether other household members were also covered by the same plan.

SRCEGEN_LP1 thru OTHWHO_LP1
- *Copy all items in Sections B through D in the Current Loop (with the exception above for Section C) and replace "_LC1" with "__LP1."*
- *All answer choices at end of Section D => ADDOTH1_L*

ADDOTH1_L
[Other than [PLANTYPEs],] [W/were you/W/was NAME] covered by any [other] health plan or health coverage AT ANY TIME between January 1, CY-1 and now?
- **READ IF NECESSARY:** Do not include plans that cover only one type of care, such as dental or vision plans.

1. Yes ➔ SRCEGEN_LP2
2. No ➔ CK-NEXTMEMB
- DK/REF ➔ CK-NEXTMEMB

If ADDOTH1_L is answered for Person 1 then set MARKTWO=2 (sufficient partial)

SRCEGEN_LP2 thru OTHWHO_LP2
- *Copy all items in Past Loop and replace "_LP1" with "__LP2."*
- *All answer choices at end of Section D => ADDOTH2_L*

ADDOTH2_L
[Other than [PLANTYPEs],] [W/were you/W/was NAME] covered by any [other] health plan or health coverage AT ANY TIME between January 1, CY-1 and now?
- **READ IF NECESSARY:** Do not include plans that cover only one type of care, such as dental or vision plans.

1. Yes ➔ SRCEGEN_LP3
2. No ➔ CK-NEXTMEMB
- DK/REF ➔ CK-NEXTMEMB

SRCEGEN_LP3 thru OTHWHO_LP3
- *copy all items in Past Loop and replace "_LP1" with "__LP3."*
- *All answer choices at end of Section D => CK-NEXTMEMB*

CK-NEXTMEMB
Have all household members been asked about explicitly?
- Yes ➔ HEALTHSTATUS_INTRO
- No ➔ FINTRO

Additional Plans for Follower

FHINTRO
Next I'm going to ask you about NAME's health coverage.
Press 1 to Continue

CK-ADDGAP1_F
Are there any gaps in coverage for NAME?
- Yes (gaps in coverage) ➔ ADDGAP1_F
- No (no gaps in coverage) ➔ ADDOTH1_F

ADDGAP1_F
So far, I have recorded that [you were/NAME was] NOT covered in [months not covered]. [Were you/Was NAME] covered by any type of health plan or health coverage in [that/those] month(s)?
READ IF NECESSARY: Do not include plans that cover only one type of care, such as dental or vision plans.
1. Yes ➔ SRCEGEN_FP1
2. No ➔ ADDOTH1_F
- DK/REF ➔ ADDOTH1_F

SRCEGEN_FP1 thru OTHWHO_FP1
- *copy all items in Past Loop and replace "_LP1" with "__FP1."*
- *All answer choices at end of Section D => ADDOTH1_F*

ADDOTH1_F
[Other than [PLANTYPEs],] [W/were you/W/was NAME] covered by any [other] health plan or health coverage AT ANY TIME between January 1, CY-1 and now?
READ IF NECESSARY: Do not include plans that cover only one type of care, such as dental or vision plans.
1. Yes ➔ SRCEGEN_FP2
2. No ➔ CK-NEXTMEMB2
- DK/REF ➔ CK-NEXTMEMB2

SRCEGEN_FP2 thru OTHWHO_FP2
- *copy all items in Past Loop and replace "_LP1" with "__FP2."*
- *All answer choices at end of Section D => ADDOTH2_F*

ADDOTH2_F
[Other than [PLANTYPEs],] [W/were you/W/was NAME] covered by any [other] health plan or health coverage AT ANY TIME between January 1, CY-1 and now?
READ IF NECESSARY: Do not include plans that cover only one type of care, such as dental or vision plans.
1. Yes ➔ SRCEGEN_FP3
2. No ➔ CK-NEXTMEMB2
- DK/REF ➔ CK-NEXTMEMB2

SRCEGEN_FP3 thru OTHWHO_FP3
- *copy all items in Past Loop and replace "_LP1" with "__FP3."*
- *All answer choices at end of Section D => HEALTHSTATUS_INTRO*

CK-NEXTMEMB2
Have all household members been asked about explicitly?
- Yes ➔ HEALTHSTATUS_INTRO
- No ➔ FINTRO for next person

5B. HEALTH INSURANCE: ACS Health Insurance Module

ACSJOB
I am now going to ask you some questions about [your/NAME's] health insurance and health coverage. [Are you/Is NAME] currently covered by health insurance through a current or former employer or union of [yours/yours or another family member/<him/her> or another family member]?

- NOTE: If the respondent says this person has health coverage through the military, mark "2" and tell them that military health insurance/coverage will be discussed later.

9. Yes
10. No

- DK/Ref
  - ⇨ ACSDIR

ACSDIR
[Are you/Is NAME] currently covered by health insurance purchased directly from an insurance company by [you/you or another family member/<him/her> or another family member]?

1. Yes
2. No

- DK/Ref
  - ⇨ ACSMCARE

Soft Edit: if ACSJOB=1 and ACSDIR=1 ask: "I recorded that (Fill 1: you/<NAME>) (have/has) both insurance through an employer or union AND insurance directly purchased through an insurance company. These are two different plans, is that correct?"

- If correct, suppress and continue.
- If not, determine which is the primary plan and go back to and change the "yes" to a "no" for the other plan

ACSMCARE
[Are you/Is NAME] currently covered by Medicare, for people age 65 or older or people with certain disabilities?

1. Yes
2. No

- DK/Ref
  - ⇨ ACSMCAID

ACSMCAID
[Are you/Is NAME] currently covered by Medicaid, Medical Assistance, or any kind of government-assistance plan for those with low incomes or a disability?

1. Yes
2. No

- DK/Ref
  - ⇨ ACSMIL

ACSMIL
[Are you/Is NAME] currently covered by TRICARE or other military health care?

1. Yes
2. No

- DK/Ref
  - ⇨ ACSVA

ACSVA
[Are you/Is NAME] currently covered through the Veteran's Administration or [have you/has NAME] ever used or enrolled for VA health care)**?**
1. Yes
2. No
- DK/Ref
  ⇨ ACSIHS

ACSIHS
[Are you/Is NAME] currently covered through the Indian Health Service?
1. Yes
2. No
- DK/Ref
  ⇨ ACSOTHER

ACSOTHER
[Are you/Is NAME] currently covered by any other health insurance or health coverage plan?
1. Yes ➔ ACSOTHERS
2. No ➔ CK-ACSLAST
- DK/Ref ➔ CK-ACSLAST

ACSOTHERS
What is the name of the health care plan?
[open text; allow 30 characters]
⇨ CK-ACSLAST

CK-ACSLAST
- If there is another person on the roster (regardless of age) ➔ ACSJOB
- Else if at least one plan was reported ➔ ACS_MKT
- Else ➔ HEALTHSTAT

ACS_MKT
Was this plan obtained through a State or Federal Marketplace, Healthcare.gov, or a similar state website?
1. Yes
2. No
- DK/REF
  ⇨ ACS_PREM

ACS_PREM
Do you or another family member pay a premium for this health insurance plan? A premium is a fixed amount of money paid on a regular basis for health coverage. It does not include copays, deductibles, or other expenses such as prescription costs.
1. Yes ➔ ACS_SUBS
2. No ➔ ACS_METAL
- DK/REF ➔ ACS_METAL

ACS_SUBS
Based on family income, do you or another family member receive financial assistance through a subsidy or tax credit to help pay part or all of the cost of the premium for this plan?
1. Yes
2. No
- DK/REF
  ⇨ ACS_PREMCOST

ACS_PREMCOST
How much is the premium for this plan?
READ IF NECESSARY: A premium is a fixed amount of money paid on a regular basis for health coverage. It does not include copays, deductibles, or other expenses such as prescription costs.
[open text] ➔ ACS_PREMUNIT
- DK/REF ➔ ACS_METAL

ACS_PREMUNIT
ASK OR VERIFY
Is that per month, quarter, year, or some other time period?
1. Every 2 weeks
2. Month
3. Quarter
4. Year
5. Other (please specify) ➔ ACS_UNITSP (open text specify)
- DK/Ref
  ⇨ ACS_METAL

ACS_METAL
Some health plans are sold at different levels of coverage: bronze, silver, gold and platinum. And some people, including young people under 30, can purchase a catastrophic plan. Is this plan a…
[READ LIST; ENTER ONLY ONE].
NOTE: Catastrophic plans are only available for those under 30 years old or those with a "hardship exemption"
1. Bronze
2. Silver
3. Gold
4. Platinum or a
5. Catastrophic plan or
6. None of the above?
- DK/Ref
  ⇨ ACS_PATHWAY

ACS_PATHWAY
There are many different ways to obtain information on the health insurance plans in the marketplace. Which of the following sources of information did you use or try to use to obtain information?
MARK ALL THAT APPLY
1. Website, including online chat option
2. Newspaper, radio, or television
3. Call center
4. Assistance from navigators, application assisters, certified application counselors, or community health workers
5. Assistance from an insurance agent or broker
6. Assistance from family or friends
7. Assistance from an employer
8. Assistance from a tax preparer
9. Assistance from Medicaid or another program agency such as TANF, SNAP, or WIC
10. Assistance from a hospital, doctor's office, or clinic
11. Other (please specify) ➔ ACS_PATHSP (open text specify)
- DK/Ref
  ⇨ HEALTHSTAT

HELP SCREENS

For ACSMCAID:
Medicaid, medical assistance, or government assistance plans for those with low incomes or a disability may be known by different names in different states. Below is a list of program names by state. This list is not comprehensive, but provides guidance for those not familiar with the term Medicaid and may only know their specific state program name. [fill state-specific program name(s) based on the attachment]

For all items except ACSMCAID:
DATA USES

- Used to allocate funds to states and local areas for government-provided health care.
- Used by federal agencies, such as the Department of Health and Human Services, to evaluate the effectiveness of government health care programs.
- Used by federal and local agencies to examine the adequacy of existing health care facilities in meeting current and future health care needs.

WHY WE ASK IT THIS WAY

- These questions ask about each type of insurance a respondent may have.
- Insurance can include both private coverage (provided by an employer or purchased) as well as public coverage (from government programs such as Medicare, Medicaid, and VA).
- The reason the question specifies health insurance or health coverage plans is because many types of public (government) coverage are not technically health insurance plans. The goal of the item is to obtain information on whether an individual has health insurance coverage and if so, what kind of coverage he/she has.

6. WRAP-UP

HEALTHSTATUS_INTRO
An important factor in evaluating a person's or family's health insurance situation is their current health status and/or the current health status of other family members.

- Press 1 to continue ➔ HEALTHSTAT

HEALTHSTATUS
Person 1: Would you say your health in general is excellent, very good, good, fair, or poor?
Person 2: How about NAME? (Would you say your health in general is excellent, very good, good, fair, or poor?)

1. Excellent
2. Very good
3. Good
4. Fair
5. Poor

- DK/REF
  - ⇨ REPEAT FOR NEXT PERSON ON ROSTER then ➔ ZIP

ZIP
What is your zip code?

- [5 digit boxes] ➔ ADDR1
- DK ➔ ADDR1
- REF ➔ TY_LAST

ADDR1
And your address? (STREET NUMBER AND NAME)

- Non-blank ➔ ADDR2
- DK➔ CITY
- REF ➔ TY_LAST

ADDR2
Is there an apartment number?

⇨ CITY

CITY
What city?

⇨ TY_LAST

Appendix C: 2016 State-Level Public Program Cost-Sharing Features

The table below provides basic information about the premium cost-sharing requirements for at least some enrollees of public programs across states (including DC) as of August 2016. The premium scoring scheme is defined in the notes at the bottom of the table.

STATE	^Monthly Premium Charge Score	Medicaid		CHIP		Other, State-based Program	
		Program Name(s)	Premium	Program Name(s)	Premium	Program Name(s)	Premium
Alabama	0	Medicaid	N	ALL Kids	N		
*Alaska	1	Medicaid–DenaliCare	N	CHIP–Denali KidCare	N	Alaska Comprehensive Health Insurance Association (ACHIA) Chronic & Acute Medical Assistance (CAMA)	Y N
*Arizona	1	Arizona Health Care Cost Containment System (AHCCCS) Arizona Long Term Care System (ALTCS)	N N	KidsCare	Y	Freedom to Work Program for disabled workers	Y
*Arkansas	1	TEFRA/Katie Beckett ARKids-A	Y Some	ARKids-B Unborn Child	N		
*California	2	Medi-Cal	Y Some	Medi-Cal	Y Some	Medi-Cal Access Program Major Risk Medical Insurance Program (MRMIP)	N Y
*Colorado	0	Health First Colorado	N	Child Health Plan Plus (CHP+)	N		
*Connecticut	1	Husky A Husky C Husky D	N	Husky B	Y Some	Med-Connect (Program for employed disabled people)	Y Some
*Delaware	1	Diamond State Health Plan Diamond State Health Plan Plus	N N	Delaware Healthy Children Program (DHCP)	Y Some		
*District of Columbia	0	DC Healthy Families	N	DC Healthy Families	N	D.C. Healthcare Alliance Program	N
Florida	1	Statewide Medicaid Managed Care Program	N	Florida KidCare (CHIP program) Healthy Kids	Y Some		
Georgia	1	Right from the Start (RSM) TEFRA/Katie Beckett SSI-Related Medicaid	N N N	PeachCare for Kids	Y Some		
*Hawaii	0	QUEST Integration	N	QUEST Integration	N		
Idaho	1	Idaho Health Plan Healthy Connections Katie Beckett	N	Idaho Health Plan Healthy Connections Katie Beckett	Y Some	Individual High Risk Reinsurance Pool Plan (HRP)	Y

*Illinois	2	FamilyCare	Y Some	All Kids	Y Some	Veterans Care Moms & Babies Aid to the Aged Blind and Disabled (AABD) Health Benefits for Workers with Disabilities (HBWD)	Y Y N Y
*Indiana	1	Hoosier Healthwise Hoosier Care Connect M.E.D. Works Risk-based Managed Care (RBMC)	N N Y	Hoosier Healthwise	Y Some	Healthy Indiana Plan (HIP) has 4 distinct plans	Y Some
*Iowa	1	IA Health Link Iowa Health and Wellness Plan Health Insurance Premium Payment Program (HIPP) Medicaid for Employed Persons with Disabilities (MEPD)	N Y N Y Some	Healthy and Well Kids in Iowa (HAWK-I)	Y Some		
Kansas	1	KanCare Kansas Medical Assistance Program (KMAP)	N N	KanCare	Y Some	MediKan	N
*Kentucky	1	KYHealth Choices	N	Kentucky Children's Health Insurance Program (KCHIP)	N	Medicaid Works (Buy-in to Medicaid for people with disability who work)	Y
*Louisiana	1	Healthy Louisiana	N	Healthy Louisiana/ LaCHIP	Y Some	Family Opportunity Act (Buy-in to Medicaid for children with disabilities)	Y
*Maine	1	MaineCare	N	MaineCare	Y Some		
*Maryland	1	HealthChoice	Y Some	HealthChoice; Maryland Children's Health Program (MCHP)	Y Some	Employed Individuals with Disabilities	Y Some
*Massachu-setts	2	MassHealth	Y Some	MassHealth	Y Some	Connector Care	Y
*Michigan	1	U29 Healthy Michigan Plan Medicaid for the Aged, Blind, and Disabled Parent/Caretaker Relative Pregnant Women Extended Care Flint Water Group MIChoice Waiver Freedom to Work Breast & Cervical Cancer Prevention & Treatment Program	N Y N N N Y Some N	MIChild Program	Y Some		
*Minnesota	2	Medical Assistance (MA)/ Minnesota Prepaid Medical Assistance Program (PMAP)	N			MinnesotaCare	Y
Mississippi	0	Health Benefits Program	N	Health Benefits Program	N	Health Insurance Risk Pool Association Children's Medical Program	N
Missouri	1	MO Healthnet	N	MO HealthNet for Kids (MHK)	Y Some	Children with Special Health Care Needs	N

*Montana	1	Healthy Montana Kids Plan HELP (Montana's Medicaid Expansion program)	N Y Some	Healthy Montana Kids	N	Montana Comprehensive Health Association (MCHA)	N
Nebraska	0	Nebraska Medical Assistance Program	N			Mentally Handicapped Children's Program (MHCP)	N
*Nevada	0	Family Medical Coverage Nevada Child Health Assurance Program (CHAP)	N N	Nevada Check Up	Quar-terly	Medical Assistance to the Aged, Blind, or Disabled (MAABD)	N
*New Hampshire	0	Medicaid Care Management Program Well Sense NH Health Families NH Health Protection Program Premium Assistance Program	N				
*New Jersey	1	NJ Family Care	N	NJ Family Care	Y Some		
*New Mexico	1	Centennial Care	N	Centennial Care	N	New Mexico Medical Insurance Pool (NMMIP)	Y
*New York	2	None	N	Child Health Plus (CHPlus)	Y Some	Basic Health Plan (BHP) Medicaid Buy-In Program for Working People with Disabilities Medicaid Excess Income Program Essential Plan	Y N Y N
North Carolina	0	Health Check, Carolina ACCESS/Community Care of NC	N	NC Health Choice for Children (NCHC)	N		
*North Dakota	0	None	N	Healthy Steps	N		
*Ohio	1	MAGI Child MAGI Adult (Group VIII) MAGI Parent or Caretaker Relative MAGI Pregnant Women Children in Care Medicaid Buy-In for Workers with Disabilities (MBIWD)	N N N N Y Some	MAGI Child	N		
Oklahoma	2	SoonerCare	N	SoonerCare	N	Insure Oklahoma	Y
*Oregon	0	Oregon Health Plan (OHP)	N	Oregon Health Plan (OHP)	N	None	N
*Pennsyl-vania	2	PH/BH Mandatory Managed Care HealthChoices Program/Fee for Service Program	N	PA CHIP	Y Some	Health Insurance Premium Payment Program (HIPP) Medical Assistance for Workers with Disabilities (MAWD)	N Y
*Rhode Island	2	RIte Care Rhody Health Partners Rhody Health Partners Expansion Rhody Health Options Phase 1 Rhody Health Options Phase 2 (Integrated Care Initiative) Community Health Team RI (new Medicaid Fee for Service Program, added to list by Diana Beaton)	N	RIte Care	N	Rite Share Premium Assistance	Y Some

South Carolina	0	Healthy Connections	N	Healthy Connections	N	Healthy Connections	N
South Dakota	0	Managed Care Program	N			South Dakota Risk Pool; Kids with Chronic Conditions (KiCC)	N
Tennessee	2	TennCare	N	CoverKids	N	AccessTN high-risk pool	Y
Texas	1	State of Texas Access Reform (STAR) including STAR+PLUS, STAR Health, and STAR Kids	N	CHIP Perinatal	Y Some	Children with Special Healthcare Needs Medically Needy Spend Down Medicaid Buy-In (Workers with Disabilities) Medicaid Buy-In for Children	N
Utah	0	Primary Care Network (PCN)	N			Utah's Premium Partnership for Health Insurance (UPP) Children with Special Health Care Needs	N N
*Vermont	2	Green Mountain Care Choices for Care (Long-Term Medicaid)	Y Some	Dr. Dynasaur	Y Some		
Virginia	0	FAMIS Plus Medicaid Works	N	Family Access to Medical Insurance Security Plan (FAMIS) FAMIS Select Title XXI Waiver	N	Commonwealth Coordinated Care Medallion 3.0 GAP: Governor's Access Plan	N
*Washington	1	Apple Health Apple Health for Kids Apple Health (Medicaid)	N	Apple Health for Kids	Y Some	Washington State Health Insurance Pool (WSHIP) Apple Health Care for Workers with Disabilities Apple Health for Aged Blind or Disabled	Y Some Y Y
*West Virginia	2	Mountain Health Trust (MHT) WV Health Bridge Physician Assured Access System (PAAS)	N	WVCHIP	Y Some	Access WV WV Children with Special Health Care Needs (CSHCH) WV Medicaid Work Incentive Network (M-WIN)	N N Y
Wisconsin	1	BadgerCare Plus Wisconsin Medicaid Purchase Plan (MAPP) Family Care, PACE and Partnership Community Recovery Services (CRS)	N	BadgerCare Plus Katie Beckett	Y Some	Children with Special Health Needs (CSHN)	Y
Wyoming	0	None	N	Kid Care CHIP	N		

*Signifies Medicaid expansion state status. http://www.nashp.org/states-stand-medicaid-expansion-decisions/

^Monthly Premium Charge Score definitions: 0=no public programs charge a monthly premium; 1=at least 1 program charges a monthly premium for some enrollees (e.g., based on age, income or pre-existing conditions/disability); 2=at least 1 program charges a monthly premium for all enrollees.

Program names are from SHADAC's annual program name communication with states (updated August 2016).

Premium data are from Google searches, SHADAC's annual program name communication with states and Tables 16, 20, 21 of Medicaid and CHIP Eligibility, Enrollment, Renewal, and Cost-Sharing Policies as of January 2016: Findings from a 50-State Survey accessed June 9 2016. Available at: http://kff.org/report-section/medicaid-and-chip-eligibility-enrollment-renewal-and-cost-sharing-policies-as-of-january-2016-tables/ . Sources are documented in the table above.

Appendix D: Calculator for Determining Which CHIME Results are Most Relevant by State

This "calculator" is provided so readers familiar with the specifics of public programs in a given state can walk through the survey questions themselves and judge which set of results is more applicable: the "standard" sample results that restricts public coverage to programs that do not charge a monthly premium (e.g., Minnesota's Medicaid program) or the "augmented" sample results that includes MinnesotaCare, which does charge a monthly premium, in public coverage.

Does STATE offer a public program that requires enrollees to contribute toward the premium?

- Yes ➔ For Questions 1-4, would enrollees of that program likely answer with one of the responses in red?
  - Yes: How would enrollees of that program likely answer Q5:
    - Yes ➔ 'Public-with-Premium' results are most relevant for this program
    - No/DK/Refused ➔ 'Public-without-Premium' results are most relevant for this program
  - No: plan not captured in government/state path
- No ➔ 'Public-without-Premium' results are most relevant for this program

Excerpt of Key Items from CPS Questionnaire

1. For the coverage you have NOW, do you get it through a job, the government or state, or some other way?
   a. Job (current or former) ➔ ESI path
   b. Government or State ➔ Q2
   c. Other way/D/R ➔ Direct purchase path
2. Is that coverage Medicaid, CHIP, Medicare, a plan through the military, or some other program?
   a. Medicaid or Medical Assistance ➔ Q3
   b. CHIP ➔ Q4
   c. Medicare ➔ Medicare path
   d. Military ➔ Military path
   e. Other/D/R ➔ Q3
3. What do you call the program?
   a. Medicaid
   b. Medical Assistance
   c. Indian Health Service
   d thru f. [State-specific Medicaid name(s) 1-3]
   g thru i. [State-specific CHIP name(s) 1-3]
   i thru l. [State-specific (non-federal) program name(s) 1-3]
   m. Healthcare.gov
   n thru p. [State-specific name(s) for marketplace portal 1-3]
   q. Other government plan
   r. Other (please specify)
   [responses m thru p skip Q4 and go directly to Q5 since they've just reported the plan was through the marketplace; all other responses go to Q4]
4. Is that coverage through [state-specific name(s) for marketplace 1-3], which may also be known as healthcare.gov?
   a. Yes ➔
   b. No ➔
5. Is there a monthly premium for this plan?
   READ IF NECESSARY: A monthly premium is a fixed amount of money people pay each month to have health coverage. It does not include copays or other expenses such as prescription costs.
   a. Yes ➔ Q6
   b. No/D/R ➔ end
6. Is the cost of the premium subsidized based on family income?
   READ IF NECESSARY: A monthly premium is a fixed amount of money people pay each month to have health coverage. It does not include copays or other expenses such as prescription costs.
   READ IF NECESSARY: Subsidized health coverage is insurance with a reduced premium. Low and middle income families are eligible to receive tax credits that allow them to pay lower premiums for insurance bought through healthcare exchanges or marketplaces.
   a. Yes
   b. No