Counting the Uninsured

September 2012

Each year, the U.S. Census Bureau releases its latest estimates of the number of Americans without health insurance. These estimates are based on data from two annual surveys, the Current Population Survey (CPS) and the American Community Survey (ACS). The annual reports include national, state, and local data on insurance by type of coverage (employer-sponsored, private, government), the estimated number and percentage of uninsured, and uninsurance trends. At this time, the CPS is the most widely used source of data on health insurance coverage, mainly due to the consistent historical data that are available for national- and state-level estimates of insurance status. The ACS is the only source of local estimates.

What is the Current Population Survey?

The Current Population Survey (CPS) is the most widely cited source for data on the uninsured because of its large sample size, timely release of annual data, and analysis of trends over time.[1] This monthly survey of the civilian non-institutionalized population living in the United States is focused on labor force characteristics, unemployment, and income. Each year in March, the Census Bureau supplements the CPS with additional questions about household and family characteristics, educational attainment, income, poverty, public program participation, and health insurance status during the previous calendar year. The Census Bureau conducts in-person and telephone interviews with over 76,000 households nationwide. This sample size is large enough to produce national estimates and state-level estimates based on 2- or 3-year rolling averages. The survey sample is weighted to agree with population estimates for the U.S. and each state, based on updated decennial census data.

The survey asks respondents to report on insurance coverage for each household member in the previous year (see text box). Since 2001, interviewers ask a verification question to establish that the respondent or household member did not have coverage in the previous year. These persons are counted as uninsured for the entire previous calendar year (duration estimate).

CPS data on the uninsured should be interpreted with several methodological limitations in mind:

- Research has shown that the number of uninsured reported from the CPS is probably closer to a count of those uninsured at the time of the interview (point-in-time estimate) rather than uninsured for the entire previous year, most likely because respondents misunderstand the question or cannot accurately recall their insurance status.

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[1] Other national surveys with data on the uninsured (responsible entities in parentheses): Survey on Income and Program Participation (Census Bureau), National Health Interview Survey (Centers for Disease Control and Prevention), Behavioral Risk Factor Surveillance System (Centers for Disease Control and Prevention), Medicaid Expenditure Panel Survey (Agency for Health Care Research and Quality), the Community Tracking Study (The Robert Wood Johnson Foundation and the Center for Studying Health System Change), National Survey of America's Families (Urban Institute). Compared with the CPS, these surveys have certain limitations: some are conducted periodically rather than annually (NHIS, CTS, NSAF); others do not include populations of interest such as children (BRFSS); none are valid for state level analyses. In July, the Census Bureau released 2007 Small Area Health Insurance Estimates for all US counties, based on analyses of data from the CPS, the 2000 census and population estimates, county business data, and administrative data such as aggregated federal tax returns and Medicaid participation records.

- The CPS is a "snapshot" and does not measure insurance dynamics, that is, fluctuations in health insurance coverage over the course of a year.
- Coverage is consistently underreported for Medicaid, possibly due to respondent confusion with other public benefits like cash assistance, short periods of coverage, and state- or health plan-specific variation in the names for the program.
- Those who are under-insured cannot be distinguished from those with more comprehensive coverage.
- Single year estimates for states are based on relatively small sample sizes, so for all but the biggest states, the Census Bureau recommends using 2-year averages for comparisons over time within a state and 3-year averages for comparison among states.
- Due to the relatively small sample size, CPS data cannot be used for local estimates of the number of uninsured.

Despite these limitations, the CPS is the most widely cited source for data on the uninsured because it provides policymakers with timely, consistent annual estimates and trends.

Current Population Survey Annual Social and Economic Supplement:
Questions on health insurance status

At any time in YEAR, (were you/was anyone in this household)…

>   Covered by a health insurance plan provided through (their/your) current or former employer or union?
>   Covered by a health insurance plan purchased directly from an insurance company?
>   Covered by Medicare?
>   Covered by Medicaid/(fill in state name)?
>   Covered by (fill state CHIP program name) program?
>   Covered by TRICARE, CHAMPUS, CHAMPVA, VA, military health care, or Indian Health Service?
>   Covered by any other type of plan?

I have recorded that (name/you) (was/were) not covered by a health plan at any time during YEAR. Is that correct?

Source: CPS ASEC health insurance questions SHII-125 (adapted for text box)

What is the American Community Survey?

The American Community Survey (ACS) is an ongoing nationwide survey conducted in all counties in 50 states, the District of Columbia and Puerto Rico. The survey is designed to gather demographic, social, economic, and housing data on about 250,000 housing units each month. Beginning in 2008, all respondents were asked to answer one question about health insurance status (see text box), producing a "period estimate" of insurance status by combining responses from 12 one-month surveys. The ACS is a mail survey of the non-institutionalized civilian population, with telephone and in-person follow-up of non-respondents.

Those who are counted as "insured" have reported comprehensive coverage from employers, direct purchase, Medicare, Medicaid or other government program, TRICARE, or Veteran's Administration (VA). The "uninsured" are those who reported no coverage or Indian Health Service coverage only (not comprehensive). Those with "private coverage" according to the ACS reported employer-based, direct purchase or TRICARE coverage. Those with "public coverage" reported Medicare, Medicaid or other government-sponsored coverage (including Children's Health Insurance Program), or VA coverage. Respondents may be covered by more than one type of insurance.

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│                      American Community Survey:                               │
│                   Question on health insurance status                         │
│                                                                               │
│  Is this person CURRENTLY covered by any of the following types of health     │
│  insurance or health coverage plans?                                          │
│     a.  Insurance through a current or former employer or union (of this      │
│         person or another family member)                                      │
│     b.  Insurance purchased directly from an insurance company (by this       │
│         person or another family member)                                      │
│     c.  Medicare, for people 65 and older, or people with certain             │
│         disabilities                                                          │
│     d.  Medicaid, Medical Assistance, or any kind of government-assistance    │
│         plan for those with low incomes or a disability                       │
│     e.  TRICARE or other military health care                                 │
│     f.  VA (including those who have ever used or enrolled for VA health care)│
│     g.  Indian Health Services                                                │
│     h.  Any other type of health insurance or health coverage plan (specify)  │
│                                                                               │
│              Source:  American Community Survey question 16 (adapted for text │
│              box)                                                             │
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How Are CPS and ACS Methods Different?

Differences in the wording and structure of questions in the CPS and ACS can cause estimates to differ, but studies suggest that these differences are not dramatic. The CPS is designed to estimate insurance status of the population **for the entire calendar year** prior to the March survey. Only those CPS respondents who report being uninsured for the entire period between January and December of the year prior to the survey are counted as uninsured. In contrast, the ACS is an ongoing survey designed to measure **current** insurance status, based on whether the respondents report having insurance at the time of the survey. In spite of these differences in design, estimates of the uninsured in the CPS and the ACS were similar in 2008 (the first year of the ACS estimates). Studies suggest that CPS respondent confusion and difficulty recalling insurance status in the previous year result in an estimate that is a closer approximation to insurance status at the time of the survey. This may explain why the CPS and ACS estimates are similar.

The CPS March Supplement generates estimates of insurance based on responses from 78,000 households. By design, there is enough CPS data in each state to allow for state-level estimates of insurance status; however, the Census Bureau recommends using multi-year averages for evaluating differences between states and trends within state over time.

The ACS is a much larger survey that includes about three million households each year. With a sample size this large, the ACS can produce one-year estimates for geographic areas with population of 65,000 or more, including large cities, counties, and Congressional districts. Beginning with data for 2010, three-year local estimates of health insurance coverage for cities and towns of 20,000 or more became available. Beginning with data for 2012 (to be released in 2013), five-year health coverage estimates for smaller towns will be available.

The CPS is administered by phone or in-person using computer-assisted methods, so the response options can be customized in each state. For example, to help identify people who are enrolled in state insurance plans or Medicaid health plans, CPS interviewers can use the various name by which these programs are known (in 2011 in Connecticut, HUSKY Program; Aetna Better Health, AmeriChoice or Community Health Network; Title XIX; state) and five-year estimates for smaller towns. Despite this practice, there is strong evidence to suggest that Medicaid coverage is under-reported on the CPS, i.e. people with Medicaid coverage may report themselves to be uninsured. The ACS response options cannot be customized.

The CPS and ACS classify TRICARE coverage differently. Those with TRICARE or military-sponsored coverage are counted as "privately insured" by the ACS and "publicly insured" by the CPS. Both the CPS and the ACS count those with Indian Health Service insurance only as "uninsured."

The following table summarizes the similarities and important differences between the CPS and ACS for Connecticut:

	Current Population Survey	American Community Survey
Responsible federal agency	US Census Bureau	US Census Bureau
When will 2011 estimates be reported?	September 12, 2012	September 20, 2012
What does the survey measure?	Uninsured for entire previous year	Uninsured at time of survey
What is the US sample size?	78,000 households	250,000 addresses per month for 12 successive months
Are national and state level estimates available?	Yes	Yes
Are local estimates available?	No	Yes, one-year estimates for cities of 65,000 or more, three-year averages for cities and towns 20,000 or more, counties, and Congressional districts
Are there data for assessing trends over time?	Yes, annual estimates since 1987	Yes, annual estimates since 2008
Are estimates within each survey comparable over time?	Yes, using two-year averages of the estimates	Yes, using single year estimates for states and large population areas of 65,000 or more, 3-year averages for population areas of 20,000 or more, and 5-year averages for smaller population areas (will be available in 2013)
What was the estimated number (percent) of <u>all persons</u> uninsured in Connecticut in 2010?	384,000 (11.0%)	320,000 (9.1%)
What was the estimated number (percent) of <u>children under 18</u> who were uninsured in Connecticut in 2010?	49,000 (6.0%)	24,000 (3.0%)

What Can We Learn About Insurance Status from the Surveys?

The Census Bureau reports annually on health insurance by type of coverage (employer-based, direct purchase, and government) for all persons, for persons under 65, and for children under 18. The uninsured are described in terms of:

- Estimated number and percentage of people without health insurance for the entire year;
- Estimated number and percentage of children without health insurance for the entire year;
- Sociodemographic characteristics of people without health insurance, such as age, race and Hispanic origin, nativity, economic status, metropolitan status, and state; and
- Uninsurance trends over time.

Using CPS data, the Census Bureau also reports state-specific estimates of the number of uninsured children living in households with income less than 200 percent of the federal poverty level. These data are reported as 3-year

rolling averages and may not be published until sometime after the initial CPS release. In Connecticut, most uninsured children in low-income families are eligible for coverage in Medicaid (HUSKY A) and the Children's Health Insurance Program (CHIP or HUSKY B in Connecticut). The federal government relies on these estimates when allocating federal dollars for CHIP.

Using ACS data, with its larger sample size, the Census Bureau additionally reports on health insurance status by type of coverage for the state and for population areas of 65,000 or more (cities, counties, and Congressional districts).   Beginning with the 2010 estimates, it is possible to examine local trends in large towns over time, based on the three-year average.   When the 2012 estimates are available in 2013, local estimates for small towns will be available for the first time, based on the five-year average rates of uninsurance.

How Are the Estimates Reported?

The Census Bureau reports the number and percent of people who were uninsured during the previous calendar year. Since the estimate is based on a survey sample, rather than a count of the entire population, it is by definition an approximation of the actual number and percentage that were uninsured. Both the number and percent uninsured are reported with a corresponding "standard error," that is, a measure of the reliability of the estimate (see text box on the next page). Using the standard error, a range of values around the estimate can be calculated to indicate the margin of error at a given level of confidence.

The effect of the sample size on the precision of the estimate is evident when comparing the ranges around estimates for the U.S. (large sample) and Connecticut (relatively small sample). The ranges around the estimated number and percentage are wider when based on the smaller sample in Connecticut. Because of the relative imprecision of CPS estimates in all but the largest states, the Census Bureau recommends using 2-year rolling averages (for example, 2008-2009 and 2010-2011) when comparing time periods within a state and 3-year rolling averages (for example 2006-2008 and 2009-2011) when comparing states.   When reporting on the number and percentage of uninsured children in low income (less than 200% of the federal poverty level) families, the Census Bureau uses 3-year rolling averages. When the range or confidence intervals do not overlap from year to year or state to state, it can be said with a degree of certainty that the estimates are statistically different. (N.B.: Even if the confidence intervals overlap, it is possible that the estimates may be statistically different.)

The 2011 ACS one-year estimates for the nation, the state, and large population areas can be compared to ACS results from previous years.

How Many are Uninsured in Connecticut?

Each year, the Census Bureau reports a one-year estimate of the number of uninsured people and the number of uninsured children under 18 in Connecticut. These data do not appear in the comprehensive report, but are published on line in detailed tables on health insurance by type of coverage for recent years (www.census.gov/hhes/www/hlthins/historic/hihistt6.html).

In 2010, the Census Bureau estimated that based on CPS data, 384,000 persons (11.0%) were uninsured, including 49,000 children under 18 (6.0%).   Among children in low income families (less than 200% of the federal poverty level), an estimated 22,000 children under 19 were uninsured.

Single-year estimates for Connecticut may appear to be different from one year to the next; however, it is generally not possible to say with confidence that any real change occurred because of large margins of error. To determine state-level changes over time, two-year average estimates should be compared because the margin of error is reduced by combining the estimates. For example, an estimated 6.5 percent (52,500 children) were uninsured in 2009-2010, compared with 4.8 percent (39,000 children) in 2007-2008. The margins of error for each of the estimates are too wide to say with certainty that the percent of uninsured children in Connecticut changed in 2009-2010 compared with previous years.

According to ACS data for 2010, 9.1 percent of all persons were uninsured (320,000 persons). The single-year estimate of the uninsured rate for children was reportedly 3.0% (24,000 children), considerably lower than the CPS estimate for the same time period. Rates for children varied by county from 0.7 percent in Tolland County to 3.9 percent in Fairfield County. Three- and five-year averages at the state and local levels will improve the reliability of these estimates.

When Are the Data on Insurance Status Available?

The latest CPS data on insurance status in 2011 will be released on September 12, 2012.

The fourth year of ACS data on insurance status in 2011 will be available September 20, 2012.

Standard Error:
How to Describe an Estimate and Detect Change Over Time

The number and percentage of uninsured reported by the Census Bureau are derived from a sample rather than a count of the entire population, meaning that the value is estimated rather than actual. For each estimator, the difference between the number or percentage based on a sample and the number or percentage based on the entire population is called the sampling error. The standard error (SE) is a measure of the magnitude of the sampling error. The SE can be used to construct a range or confidence interval around the estimate. The range is a better representation of the estimate than the single number or percentage of uninsured. For example:

In 2007, the Census Bureau reported that nationwide an estimated 46.5 million people under 65 (17.8%) were uninsured in 2006. Using the SE reported for the number (322,000) and the percentage (0.1), we can say with 90% confidence (1.645 standard deviations above and below the mean) that after rounding, estimates based on repeated sampling would fall between 45.9 million (17.6%) and 47.0 million (18.0%):

$$46{,}543 \pm 322 \text{ times } 1.645 = 45{,}923 \text{ to } 46{,}983$$
(numbers in millions)

$$17.8 \pm 0.1 \text{ times } 1.645 = 17.6355 \text{ to } 17.9645$$
(numbers in percents)

In 2007, the Census Bureau reported that in Connecticut an estimated 321,000 people under 65 (10.7%) were uninsured in 2006. Using the standard error reported for the number (26,000) and the percentage (0.9), we can say with 90% confidence that the estimates fall between 278,000 (9.2%) and 364,000 (12.2%):

$$321 \pm 26 \text{ times } 1.645 = 278.230 \text{ to } 363.770$$
(numbers in thousands)

$$10.7 \pm 0.9 \text{ times } 1.645 = 9.22 \text{ to } 12.18$$
(numbers in percents)

When the range or confidence intervals for an estimate do not overlap, this means that the two estimates are statistically different from one another.

Sources: Census Bureau. Source and accuracy of estimates for *Income, Poverty, and Health Insurance Coverage in the United States, 2006.* Lewis K, Ellwood M, Czajka JL. Counting the Uninsured. Washington, DC: The Urban Institute, July 1998.