

September 2010

Comparing Health Insurance Estimates from the American Community Survey and the Current Population Survey

Introduction

In 2008, the U.S. Census Bureau began fielding a health insurance question in the American Community Survey (ACS), with the first set of estimates released in September 2009. The ACS provides state policy makers and analysts with a powerful new tool for monitoring health insurance coverage and assessing policy changes at the state level. Data users may be more familiar with health insurance coverage estimates from the Census Bureau's Annual Social and Economic Supplement to the Current Population Survey (CPS), which was previously the only available source of annual health insurance estimates for all 50 states and the District of Columbia.

The ACS and CPS use different sampling methodologies, modes of data collection, question wording and processing regimens. Data users face a challenge when choosing the most appropriate data source for their needs. The purpose of this brief is to introduce health policy data users to the ACS, explain how it differs from the CPS, and provide guidance on issues to consider in deciding when to use each survey.

Survey History and Methods

American Community Survey

The ACS is a general household survey and was designed as a replacement for the "long form" of the decennial census in order to collect detailed economic, social, demographic, and housing information annually instead of once every ten years. Data are collected continuously using monthly mailings to a sample of U.S. households. The ACS is a mixed mode incremental survey, with mail non-respondents being called for a computer assisted telephone interview (CATI), and phone non-respondents sampled for an in-person computer assisted personal interview (CAPI). The same questions are asked for all three modes of data collection.

The ACS samples about three million addresses annually, with about two million interviews completed. The ACS collects sample in all U.S. counties or county equivalents as well as Puerto Rico every year. The Census Bureau began testing the ACS in a sample of U.S. counties in 1996 and it became fully operational in 2005 for residential addresses. In 2006, people living in institutionalized and non-institutionalized group quarters (for example nursing homes, correctional facilities, and college dormitories) were added to the sample.

Current Population Survey

The CPS is a monthly survey conducted by the Census Bureau for the Bureau of Labor Statistics to collect data on labor force participation and unemployment. It is the official source of government statistics on employment status. Data on health insurance coverage and income are collected through the Annual Social and Economic Supplement (ASEC), which was initially added to the CPS in March of each year. In 2001, collection of data on health insurance and income was expanded to February through April of each year. The ASEC provides the official source of national poverty estimates. Data are collected through a combination of telephone (CATI) and in-person (CAPI) modes using computer-assisted instruments.

The CPS interviews about 77,000 households per year since 2000. This is about 1/25th the size of the ACS. The CPS collects data in all states and the District of Columbia, but does not collect data in all counties each year, nor in any territories.

State-level health insurance estimates are available from the CPS beginning with data for calendar year 1987. The question series has undergone several changes over the years, notably the addition of an insurance verification question (SHADAC 2009a). The CPS is administered to the civilian non-institutionalized population of the U.S. and does not include an institutionalized group quarters sample, as does the ACS.

Table 1 on the next page provides a summary of the major features of the ACS and CPS discussed in this brief.

Level of Geography Available

American Community Survey

Single-year estimates from the ACS are available for areas with populations of 65,000 or more. This includes estimates for the nation, all states, all congressional districts, and about 25 percent of counties. For areas with smaller population, multiple years of ACS data are pooled together to produce reliable period estimates. Beginning in 2008, 3-year estimates are available for areas with populations of 20,000 or more; beginning in 2010, 5-year estimates are available for all statistical, legal, and administrative entities. The first release of 3-year health insurance coverage estimates will be in 2011, based on the 2008-2010 surveys, and the first release of 5-year health insurance coverage estimates will be in 2013, based on the 2008-2012 surveys.

Current Population Survey

The CPS provides estimates for the nation and all states and the District of Columbia. The Census Bureau recommends using 3-year average estimates to compare estimates across states and 2-year averages to evaluate changes in state estimates over time, due to relatively small sample sizes (particularly for states with smaller populations). The CPS multiyear estimates are averages of the estimates for single years; in contrast, the ACS multiyear estimates are calculated by pooling and reweighting the data.

Table 1. Survey Comparisons

	ACS	CPS
Survey Methods		
Data collection period	Continuous	February to April
Mode of data collection	Mail, phone, and in-person	Phone and in-person
Annual number surveyed	About 2 million housing units About 4.4 million persons	About 80,000 housing units About 200,000 persons
Geographic sampling	Surveys conducted in all U.S. counties and county equivalents each year	Surveys conducted in all states each year but not in all counties within a state
Population surveyed	U.S. population including group quarters	Civilian non-institutionalized population ¹
Geography for which estimates are published²		
Nation, States and District of Columbia	All	All
Counties	All	Most over 100,000 in population
Places ³	All	None
Metropolitan Areas	All	Largest 250 in population
Congressional districts	All	None
Census tracts	All	None
Health insurance measurement		
Uninsurance measure	Point in time	Uninsured all year ⁴
State specific public program names included	No	Yes
Verification question included	No	Yes

¹ Members of the Armed Forces living off post or with their families on post are included in the sample if at least one civilian adult lives in the household.

² For a comprehensive list of geography available for the ACS 1-year, 3-year, and 5-year estimates see http://www.census.gov/acs/www/guidance_for_data_users/geography/

³ Census "Places" include incorporated government areas and statistical counterparts of incorporated places. A complete description is at "Geographic Terms and Concepts (2008)" Appendix A: Geographic Terms and Concepts, available at http://www.census.gov/geo/www/geoareas/GTC_08.pdf.

⁴ Research has shown that the CPS estimates tend to look more like a point-in-time estimate than a full year measure of coverage (Congressional Budget Office 2003; Davern et al. 2007)

Health Insurance Measurement

American Community Survey

The ACS health insurance question is asked individually of every person in the household and asks about coverage at the time of the survey. However, the questionnaire may be completed by a single member of the household who serves as proxy for the other household members. The survey has a single question that asks about each of seven types of health insurance coverage: employer or union; purchased directly from an insurance company; Medicare; Medicaid or other public; TRICARE or other military; VA; and Indian Health Service. The respondent is instructed to mark “yes” or “no” for each of these types.

The respondent also has the option to write in any other type of health insurance or health coverage plan they have. The Census Bureau then codes these write-ins to one of the seven types of coverage listed. Because it is primarily a mail survey, the ACS does not include state-specific names in the Medicaid and public program section of the question. The ACS does not include a question to verify that someone who does not report any type of coverage is, in fact, uninsured.⁵

Current Population Survey

In the CPS interview, a series of health insurance coverage questions is asked of every person in the household, with one person responding for all others in the household. The questions are asked at the household level where the respondent is asked “does anyone in the household...?”, followed by “who...?” This is a different approach from the ACS, which asks about each person individually. The question series includes a comprehensive list of insurance options that include public program names specific to the state in which the interview is conducted. Since 2000, a verification question has been included to confirm that respondents who did not indicate any coverage are, in fact, uninsured.⁶

The CPS health insurance coverage question asks about coverage over the prior calendar year (January through December). The survey is fielded in February through April, so the respondent is asked to recall insurance coverage status for a period that began 14 to 16 months prior to the interview. A respondent is considered insured if they had coverage for at least one day during the prior calendar year. This long reference period is a limitation, and research has shown that the CPS estimates tend to look more like point-in-time estimates than a full year measure of coverage (Congressional Budget Office 2003; Davern et al. 2007).

Type of Coverage

For reporting purposes, the Census Bureau classifies health insurance coverage into private and public coverage, as well as an overall measure of insured and uninsured. The categories of coverage are not mutually exclusive, so a person may be covered by both private and public coverage at the same time. Both the ACS and CPS consider respondents with Indian Health Service (IHS) alone to be uninsured, as IHS is not considered comprehensive coverage (SHADAC 2005).

⁵ The ACS questionnaire is available at http://www.census.gov/acs/www/methodology/questionnaire_archive

⁶ The CPS questionnaire is available at <http://www.census.gov/aprd/techdoc/cps/cps-main.html>

The individual types of coverage included in private and public coverage are listed in Table 2. Private coverage includes employment-based and direct purchase. The ACS also classifies TRICARE or other military health care as private coverage. In the ACS, public coverage includes Medicare, Medicaid, and Veterans Affairs (VA) coverage. The CPS combines TRICARE and VA coverage and classifies them as public coverage along with Medicare and Medicaid.

Table 2. Classification of Private and Public Coverage in the ACS and CPS

	Private coverage	Public coverage
ACS	<ul style="list-style-type: none"> • Employment-based • Direct purchase • TRICARE or other military health care 	<ul style="list-style-type: none"> • Medicare • Medicaid • VA
CPS	<ul style="list-style-type: none"> • Employment-based • Direct purchase 	<ul style="list-style-type: none"> • Medicare • Medicaid • Military health care (includes TRICARE and VA)

Deciding Which Survey Estimates to Use

Both the ACS and CPS can be used for state-level health insurance coverage estimates. However, having the option of two data sources leaves the health policy analyst with the problem of deciding which to use. The discussion below presents the major issues to consider when making this decision.

Precision of state-level estimates

All survey estimates have some level of uncertainty associated with them. For this reason, it is important to consider the precision of survey estimates as well as the point estimates. In general, larger survey samples produce estimates with more precision; however, the precision of estimates is also affected by the sampling design of a survey. The standard errors or confidence intervals that are often published with survey estimates reflect the uncertainty associated with the estimates. For example, the U.S. uninsurance rate for the civilian non-institutionalized population in 2009 as measured by the ACS was 15.1 percent, with a 90% confidence interval from 15.0 percent to 15.2 percent. The CPS measured uninsurance at 16.7 percent in 2009, with a 90% confidence interval ranging from 16.5 percent to 16.9 percent. Particularly in smaller states, the confidence intervals for health insurance estimates can be fairly wide, making this an important consideration in choosing which data source to use.

An additional source of error in survey estimates is non-sampling error, which can be very difficult to measure. Sources of non-sampling error include random or systematic issues related to question design, response errors or incompleteness, or problems reaching the target population. Both the ACS and CPS have non-sampling error, but more research has been conducted on the CPS to understand the nature of these errors.

Need for sub-state estimates (geographic or small populations within state)

Because of the dramatically larger sample size of the ACS and the sample design that includes respondents in all counties/equivalents each year, the ACS is a better source for sub-state estimates. The CPS can produce reliable estimates for larger metropolitan areas, particularly in larger states, but in general is not a good option for sub-state estimates. Likewise, for analysis of small population groups within a state (e.g. by race/ethnicity), the larger sample size of the ACS means that estimates can be calculated with more precision.

Need for time series or trended estimates

For analysis of long term state-level trends in health insurance coverage, the CPS is the only data source available. As noted earlier, state-level health insurance estimates from the CPS date back to 1987. The ACS, by contrast, began collecting information on health insurance coverage in 2008. One important issue to note about the CPS time series estimates is that the survey has undergone a number of changes to the design and the health insurance question (SHADAC 2009a). The estimates published by the Census Bureau do not adjust for these changes over time, which results in a time series that is not completely comparable from year to year. SHADAC has developed the SHADAC-Enhanced CPS estimates that are adjusted to account for these changes, along with some additional adjustments that have been shown to result in a more accurate measure of coverage (SHADAC 2009b). SHADAC recommends using this enhanced CPS data for trend analysis.⁷

Familiarity with data source

Another factor to consider is the familiarity of policy makers, stakeholders and researchers with the different sources of data. Because of the long history of the CPS estimates, this is often the most familiar source and states may choose to use it for this reason. Over time, the ACS estimates are likely to become more widely used as researchers better understand their strengths and limitations, and as policy makers and stakeholders become more familiar with the ACS.

Conclusions

Because the ACS health insurance estimates are new to researchers, there is still much to be learned and health services researchers are just beginning to explore a variety of questions about the data. The CPS has enough history that much research has been conducted to understand the issues and error associated with the survey.

Both the CPS and the ACS surveys have strengths and limitations and both are useful for different purposes. The decision about which survey to use will depend on the specific questions that need to be answered. This brief provides guidance to help make this decision by introducing the ACS, explaining how the ACS differs from the CPS, and presenting some of the major issues to consider when deciding which survey to use.

⁷ Enhanced CPS estimates are available from SHADAC's Data Center, <http://www.shadac.org/datacenter>, and data are available from Minnesota Population Center's Integrated Public Use Microdata Series (IPUMS), <http://usa.ipums.org/usa>.

Suggested Citation

State Health Access Data Assistance Center. 2010. "Comparing Health Insurance Estimates from the American Community Survey and the Current Population Survey." Issue Brief #22. Minneapolis, MN: University of Minnesota.

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