SEPTEMBER 2014

Comparing Federal Government Surveys that Count the Uninsured: 2014

Robert Wood Johnson Foundation

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ABOUT SHADAC

The University of Minnesota's State Health Access Data Assistance Center (SHADAC) helps states monitor rates of health insurance coverage and understand factors associated with uninsurance. SHADAC provides targeted policy analysis and technical assistance to states that are conducting their own health insurance surveys and/or using data from national surveys. SHADAC's work is funded by the Robert Wood Johnson Foundation. More information is available at www.shadac.org.

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Comparing Federal Government Surveys that Count the Uninsured

Timely and accurate estimates of the number of people who do not have health insurance coverage are important for understanding trends in health insurance coverage and the impacts of policy changes that affect health insurance. Estimates of the number of people who are uninsured are available from several different sources. This brief provides an annual update to comparisons of uninsurance estimates from five federal surveys.[1] It presents trends in national estimates of uninsurance, presents the most recent available state-level estimates from these surveys, and describes the main reasons for variation in the estimates across the different surveys.

FEDERAL GOVERNMENT SURVEYS USED TO ESTIMATE THE NUMBER OF PEOPLE WITHOUT HEALTH INSURANCE

This brief compares five federal surveys that are used to estimate the level of uninsurance in the United States. These include:

- The **American Community Survey (ACS)**: Conducted by the U.S. Census Bureau, the ACS is an annual household survey that replaced the decennial census long form questionnaire. A question on health insurance coverage was added to the ACS in 2008.

- The **Behavioral Risk Factor Surveillance System (BRFSS)**: Sponsored by the U.S. Centers for Disease Control and Prevention, the BRFSS is a state-based survey of adults focusing on population health, risk factors, and health behaviors. Since 1991, it has included a question that asks whether respondents are uninsured or have some form of health insurance.[2]

- The **Current Population Survey (CPS)**: The CPS is conducted by the U.S. Census Bureau for the Bureau of Labor Statistics, and the survey's Annual Social and Economic Supplement (ASEC) collects data on health insurance coverage. The CPS estimates of health insurance coverage are among the most commonly cited estimates, and they are used to monitor both state and national trends in health insurance coverage. The estimates date back to 1987.

- The **Medical Expenditure Panel Survey – Household Component (MEPS-HC)**: The MEPS-HC is sponsored by the Agency for Healthcare Research and Quality, and consists of several interviews with the same respondents over two full calendar years. Conducted since 1996, the MEPS-HC collects data on health status and health conditions, health insurance coverage, access to and utilization of health care services, medical expenditures, and various demographic and socioeconomic characteristics.

- The **National Health Interview Survey (NHIS)**: Sponsored by the National Center for Health Statistics, the NHIS includes questions about health insurance coverage, health care utilization and access, health conditions and behaviors, and general health status, in addition to demographic and socioeconomic characteristics. The NHIS has been conducted annually since 1957; annual health insurance coverage estimates are available beginning with 1998.

Each of these surveys was designed to collect information for different research and policy purposes. Table 1 summarizes key information from each of these surveys, such as who is included in the survey, when and how the survey is conducted, response rates, and the availability of state-level health insurance estimates. In addition to collecting data on uninsurance, most of these surveys also have undergone revisions to help them measure effects of the Patient Protection and Affordable Care Act. [3]

TABLE 1: Comparison of Federal Surveys Used to Estimate Uninsurance

	ACS	BRFSS	CPS	MEPS-HC	NHIS
Sponsor(s)	Census Bureau	Centers for Disease Control and Prevention (conducted by states)	Bureau of Labor Statistics, U.S. Dept. of Labor (conducted by the Census Bureau)	Agency for Healthcare Research & Quality (conducted by Census Bureau)	National Center for Health Statistics, Centers for Disease Control and Prevention
Primary focus	General household survey, replaced decennial census long form	Population health, risk factors, and health behaviors	Labor force participation and unemployment	Health care access, utilization, and cost	Population health
Target population	Entire population	Adult civilian non-institutionalized population	Civilian non-institutionalized population	Civilian non-institutionalized population	Civilian non-institutionalized population
Sample frame	Address-based (National Master Address File)	Telephone-based (households with landline telephones, plus cell phones added in the 2011 survey)	Address-based (Census 2000 sampling frame updated with new construction)	NHIS respondents	Address-based (Census 2000 sampling frame updated with new construction)
Data collection mode	Mail; in-person; phone; and internet	Phone	In-person; phone	In-person	In-person
Type of uninsurance measures	Point in time	Point in time; uninsured at some point in the past year (an optional question adopted by 38 states and the District of Columbia in 2013)	All of prior calendar year; point-in-time (added in 2014)	Point in time; all of prior year; if uninsured, length of time uninsured; uninsured at some point in the past year	Point in time; all of prior year; if uninsured, length of time uninsured; uninsured at some point in the past year
Health insurance coverage: verification question for uninsured	No	No	Yes	Yes	Yes
State-specific names included for Medicaid/CHIP	No	No	Yes	Yes	Yes

	ACS	BRFSS	CPS	MEPS-HC	NHIS
Response rate	89.9% (2013)	46.4% (2013 combined landline/cell phone median response rate for states)	79.5% (2013)	61.3% (2012)	75.7% (2013)
Survey period	Monthly	Monthly	February through April	Panel over 2 calendar years	February, May, August, November
State health insurance estimates	50 states and D.C.	50 states and D.C.	50 states and D.C.	Not published	43 states
Years available	2008 to 2013	1991 to 2013	1987 to 2013 (plus limited point-in-time estimates for 2014)	1996 to 2012	1998 to 2013 (plus first quarter of 2014)

NATIONAL ESTIMATES

Table 2 shows the most recent available estimates of uninsurance from each of the five surveys. As described in Table 1, some of the surveys produce estimates of the number of adults who were uninsured for an entire year, while others estimate uninsurance at a specific point in time (i.e., at the time of the survey), and some collect multiple measures of uninsurance. CPS produces the highest estimate of the number of people without health insurance coverage for the entire year, at 42 million people, and the NHIS produces the lowest, at 33.4 million. The range of the point in time estimates is much smaller (from 45.2 million to 44.8 million people).

TABLE 2: Comparison of Uninsurance Estimates

Survey	Time Period	Uninsured for the Entire Year		Uninsured at a Specific Point in Time	
		Number (millions)	% of population	Number (millions)	% of population
Total population					
ACS	2013	N/A	N/A	45.2	14.5%
CPS	2013	42.0	13.4%	N/A	N/A
MEPS	2012	39.8	12.7%	N/A	N/A
NHIS	2013	33.4	10.7%	44.8	14.4%
Non-elderly adults (ages 18 to 64)					
ACS	2013	N/A	N/A	39.5	20.3%
BRFSS	2013	N/A	N/A	41.2	21.1%
CPS	2013	35.8	18.4%	N/A	N/A
MEPS	2012	35.8	18.4%	N/A	N/A
NHIS	2013	30.5	15.7%	39.6	20.4%

Sources: CPS estimates from U.S. Census Bureau, 2014, "Health Insurance Coverage in the United States: 2013"; ACS estimates for civilian noninstitutionalized population from U.S. Census Bureau, 2014, "Health Insurance Coverage in the United States: 2013" and American Fact Finder, accessed September 18, 2014; NHIS estimates from Cohen and Martinez, 2014, "Health Insurance Coverage: Early Release of Estimates from the National Health Interview Survey, 2013"; MEPS estimates from http://meps.ahrq.gov/mepsweb/data_stats/summ_tables/hc/hlth_insr/2012/alltablesfy.pdf. BRFSS estimates analyzed by SHADAC using 2013 public use file.

In addition, two surveys have released estimates of point-in-time uninsurance from early 2014. The NHIS point-in-time estimate is 13.1 percent of the population (41.0 million people). The CPS point-in-time uninsurance rate estimate is 13.8 percent of the population, though an estimate of the number of uninsured was not released in September 2014 along with the rate. While the NHIS' early 2014 estimate can be compared against point-in-time estimates from previous years, the CPS point-in-time estimate of uninsurance is based on new survey questions, so comparable data do not exist for prior years. It is important to note that these estimates come from surveys conducted during the Affordable Care Act's first open enrollment period, with the NHIS being conducted from January to March and the CPS being conducted from February to April 2014.
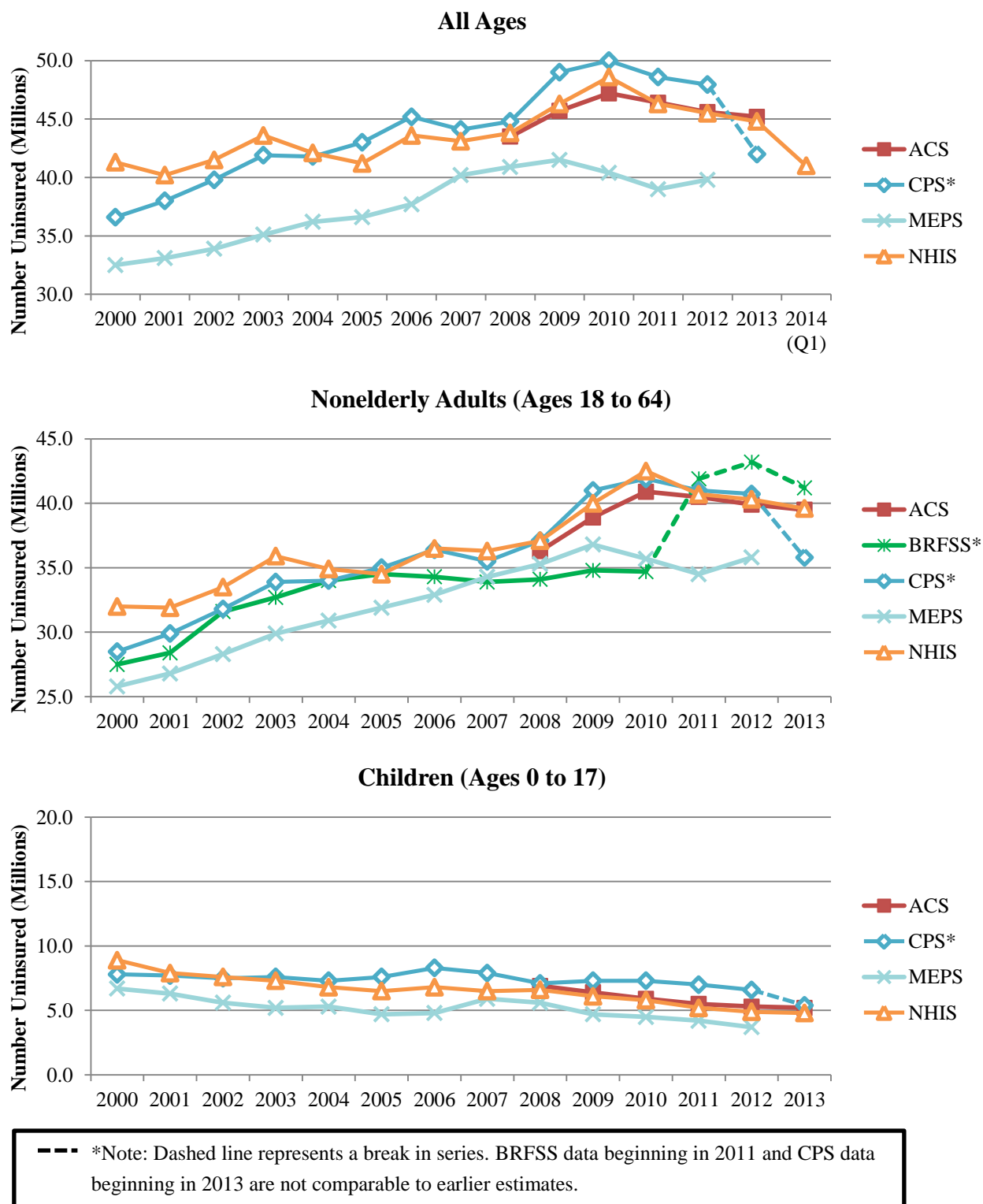
NATIONAL TRENDS

Over time, the uninsurance estimates from these surveys have demonstrated similar national trends, as shown in Figure 1. Together, the surveys show a decrease in the number of uninsured people since 2011. Before then, the surveys showed a steady increase over several years in the number of people who were uninsured. Additionally, the three surveys (ACS, BRFSS and NHIS) with comparable data between 2012 and 2013 also show a decrease in the number of uninsured for this most-recent time period. With its estimate from the first quarter of 2014, the NHIS also shows this trend of declining uninsurance continuing. The CPS estimate of uninsurance in early 2014 cannot be used to evaluate a trend because this is the first time the survey has produced a point-in-time estimate.

When examining trends in uninsurance, it is important to consider that similar to the way estimates *across* different surveys may not be comparable, estimates *within* the same survey may not always be comparable over time. This can be due to changes in survey questions and changes in methodology:

- **Changes in BRFSS:** In 2011, the BRFSS began using a new sampling frame, adding cell phones to the landlines it historically had sampled. This revision was intended to capture the growing segment of the U.S. population that uses cell phones exclusively, allowing the survey estimates to more closely reflect the overall population.[4] Because of this change, the CDC advises against comparing estimates since 2011 against those in 2010 or before.[5]

- **Changes in CPS:** In 2014, the CPS was fielded with a revised set of survey questions designed to improve the accuracy of its uninsurance estimate, which researchers have suggested more closely resembled a point-in-time measure than its intended measure of insurance during the previous year.[6,7,8] These new data beginning in 2013 will not be comparable to data from 2012 and earlier. This is not the first time the CPS has undergone revisions that have created a break in its time series. In 2000, the survey added a verification question, asking people who did not report coverage whether they were in fact uninsured.[9] While this change improved the accuracy of the uninsurance estimate by allowing respondents to confirm their coverage status, it also caused a break in the comparability of CPS estimates from 1998 and earlier versus 1999 and later.[10] The CPS also has made methodological changes that could affect the comparability of its estimates over time, such as changes in weighting of data.[11]

FIGURE 1. Trend in Number of Uninsured, 2000 to 2013
(ACS, BRFSS, and NHIS point-in-time estimates of the uninsured; CPS and MEPS estimates of the full-year uninsured)

Sources: CPS estimates from U.S. Census Bureau, 2014, "Health Insurance Coverage in the United States: 2013"; ACS estimates for civilian noninstitutionalized population from U.S. Census Bureau, 2014, "Health Insurance Coverage in the United States: 2013" and American Fact Finder, accessed September 18, 2014; NHIS estimates from Cohen and Martinez, 2014, "Health Insurance Coverage: Early Release of Estimates from the National Health Interview Survey, 2013"; MEPS estimates from http://meps.ahrq.gov/mepsweb/data_stats/summ_tables/hc/hlth_insr/2012/alltablesfy.pdf. BRFSS estimates analyzed by SHADAC using 2013 public use file.

STATE-LEVEL ESTIMATES

The CPS, ACS and BRFSS are designed to produce state-level estimates for all 50 states and the District of Columbia. Insurance coverage estimates from NHIS are published for 43 states, and no state-level estimates of insurance coverage are published from the MEPS-HC.

Table 3 presents the most recent state-level estimates of uninsurance from the ACS, BRFSS, and NHIS (standard errors are shown in Appendix). As with the national estimates, the estimated level of uninsurance for states varies across surveys; however, general patterns are consistent (e.g., states with low uninsurance rates are low in all three surveys).

FACTORS CONTRIBUTING TO DIFFERENCES IN SURVEY ESTIMATES

There are many reasons why health insurance estimates vary across surveys. The surveys are designed to fulfill different goals, and use different questions, statistical designs, and data collection and processing methods. Each of these factors likely contributes to differences in uninsurance estimates.

Specific differences include the following:

- **Conceptual differences in measures of uninsurance:** As noted earlier, some surveys collect information about whether a person lacked health insurance coverage for a full year, while others collect information on point in time insurance status, and some collect multiple measures.

- **Reference period:** The CPS Annual Social and Economic Supplement, conducted in February through April each year, has historically asked respondents about their health insurance coverage during the entire previous calendar year, with respondents being asked to report their coverage for a time period as long as 16 months prior to the interview. Beginning with data collected in 2013, the CPS asks respondents about their current coverage status (point in time), as well as the current year-to-date and previous calendar year (up to 16 months). For their measures of coverage during the prior year, NHIS and MEPS have shorter recall periods than the CPS. Like the redesigned CPS, the ACS and BRFSS also collect information about current coverage. These differences in the time period for which coverage is being reported contribute to differences in the survey estimates; in addition, differences in the length of time that respondents are being asked to recall their insurance coverage status can also result in differences in measurement error across the surveys. [12] As mentioned above, many researchers believe that the CPS pre-2013 measure is closer to a point-in-time measure of uninsurance than a full-year measure.[13]

- **Differences in survey questions:** Differences in the ways that health insurance questions are asked can lead to differences in uninsurance estimates. For example, when the Census Bureau added a "verification question" to the CPS in 2000 that asked people who did not report any coverage if they were in fact uninsured for all of 1999, the estimated number of people without health insurance declined by 8 percent, from 42.6 million to 39.3 million.[14] The CPS, NHIS, and MEPS all verify insurance status for people who do not report any of the specific types of coverage that the survey asks about, but the ACS and BRFSS do not. Another difference in survey questions that can lead to different estimates across surveys is the fact that some of the surveys (CPS, NHIS, and MEPS) use state-specific names for Medicaid and Children's Health Insurance Program (CHIP) programs, while the ACS and BRFSS do not.

- **Missing data and imputation:** Some of these surveys have processes in place to manage missing data and impute missing values. In the CPS supplement that includes the health insurance questions, about 10 percent of the respondents do not answer any questions, and the missing values are imputed by the Census Bureau. Similarly, in the 2008 ACS about 11 percent of responses had one or more of the health insurance items missing; these missing data were imputed by the Census Bureau. In contrast, the NHIS and MEPS impute little or no health insurance coverage, because the data are much more complete than the CPS or ACS. The BRFSS does not impute health insurance coverage.

CONCLUSION

Federal surveys are essential resources for estimating the number of uninsured. As coverage reforms are implemented, we expect to see changes in health insurance coverage nationwide and across states. Each survey provides a unique view of the problem of uninsurance, and together the surveys provide a wealth of information about how uninsurance varies by population characteristics, and how it is associated with differences in access to and use of health care services, as well as health status. For state-level analysis, the ACS and CPS are both commonly used; however, the Census Bureau has not yet published state-level estimates from the CPS for 2013, and these CPS estimates cannot be compared to prior years.

Surveys produce different estimates because they have different sampling methodologies, survey questions, data collection, and editing procedures. Understanding these differences is important, but it should not distract policymakers from the need to address issues of cost and access for those without health insurance coverage.

TABLE 3. State-Level Estimates of Uninsurance from Federal Surveys, 2013
(Percent of Population Uninsured)

	Total population		Non-elderly adults (ages 18 to 64)		
	ACS	NHIS	ACS	BRFSS	NHIS
	Point in time	Point in time	Point in time	Point in time	Point in time
United States	14.5	14.4	20.3	21.1	20.4
Alabama	13.6	11.1	20.1	21.2	17.3
Alaska	18.5	*	23.8	20.2	*
Arizona	17.1	18.0	23.5	25.3	23.4
Arkansas	16.0	18.5	24.1	28.3	27.5
California	17.2	17.0	24.0	20.3	23.7
Colorado	14.1	13.3	18.8	20.0	18.3
Connecticut	9.4	9.1	13.2	12.3	13.2
Delaware	9.1	9.3	12.9	14.3	13.8
District of Columbia	6.7	3.5	8.7	9.9	4.7**
Florida	20.0	20.5	28.8	29.1	29.1
Georgia	18.8	19.7	25.9	27.3	27.2
Hawaii	6.7	*	9.6	10.0	*
Idaho	16.2	17.0	23.0	24.1	24.3
Illinois	12.7	12.4	18.4	19.4	17.8
Indiana	14.0	12.7	19.2	20.9	19.0
Iowa	8.1	7.4	11.6	12.7	11.3
Kansas	12.3	12.7	17.5	20.8	19.5
Kentucky	14.3	16.4	20.6	22.0	24.1
Louisiana	16.6	13.1	24.2	26.0	19.8
Maine	11.2	10.4	15.9	15.3	15.9
Maryland	10.2	11.4	14.1	15.5	16.4
Massachusetts	3.7	4.6	5.2	7.2	6.0**
Michigan	11.0	11.0	16.0	17.4	15.8
Minnesota	8.2	7.1	10.9	12.9	9.7
Mississippi	17.1	16.7	24.7	28.1	24.2
Missouri	13.0	14.6	18.3	18.8	20.1
Montana	16.5	*	23.0	21.5	*
Nebraska	11.3	12.5	16.1	17.6	18.5
Nevada	20.7	21.7	27.0	27.3	29.3
New Hampshire	10.7	10.6	15.4	15.6	16.1
New Jersey	13.2	12.0	18.6	19.4	17.5
New Mexico	18.6	*	26.9	26.2	*
New York	10.7	9.6	15.0	17.0	13.6
North Carolina	15.6	17.0	22.6	24.2	25.6
North Dakota	10.4	*	13.4	12.4	*
Ohio	11.0	11.4	15.7	16.7	16.3
Oklahoma	17.7	20.2	24.7	22.6	28.3
Oregon	14.7	14.2	21.2	25.	20.4
Pennsylvania	9.7	11.4	13.5	15.2	16.4
Rhode Island	11.6	9.1	16.2	18.7	13.1
South Carolina	15.8	16.1	22.9	23.9	23.2
South Dakota	11.3	*	15.9	14.9	*
Tennessee	13.9	10.0	20.0	21.2	16.2
Texas	22.1	20.6	29.9	32.8	28.4
Utah	14.0	15.3	18.5	19.2	20.7
Vermont	7.2	*	10.2	11.5	*
Virginia	12.3	11.9	17.2	18.4	16.0
Washington	14.0	16.4	19.8	20.6	23.4
West Virginia	14.0	20.1	20.7	23.7	28.8
Wisconsin	9.1	8.2	12.8	14.2	11.1
Wyoming	13.4	*	19.2	23.6	*

* NHIS does not release estimates for some states due to sample size.

** The NHIS recommends using estimates from these states with caution because of their relative standard errors between 30% and 50%.

Sources: ACS estimates for civilian noninstitutionalized population from U.S. Census Bureau, 2014, "Health Insurance Coverage in the United States: 2013" and American Fact Finder, accessed September 18, 2014; NHIS estimates from Cohen and Martinez, 2014, "Health Insurance Coverage: Early Release of Estimates Interview Survey, 2013"; BRFSS estimates analyzed by SHADAC using 2013 public use file.

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[1] Annual updates to SHADAC's brief Comparing Federal Surveys that Count the Uninsured from previous years are available at http://www.shadac.org/content/rwj-briefs-and-reports.

[2] In 2013, the BRFSS added an optional module that includes a question asking whether respondents were uninsured at any point in the previous year, as well as a question on type of coverage. However, these questions were adopted by only 38 states and the District of Columbia, so national data are not available.

[3] For additional information on comparing the content of these surveys, including changes related to the ACA, see SHADAC's May 2014 issue brief "Using Recent Revisions to Federal Surveys for Measuring the Effects of the Affordable Care Act." Available at http://www.shadac.org/publications/using-recent-revisions-federal-surveys-measuring-effects-affordable-care-act.

For greater detail on recent revisions to the CPS, see SHADAC's May 2014 issue brief "An Introduction to Redesigned Health Insurance Coverage Questions in the 2014 Current Population Survey's Annual Social and Economic Supplement." Available at http://www.shadac.org/publications/cpsbrief.

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10 To improve the comparability of CPS estimates of uninsurance over time, the State Health Access Data Assistance Center (SHADAC) has created an enhanced time series of CPS data, available at: http://datacenter.shadac.org. The enhanced time series is available from 1987 to 2012. It does not bridge the re-design introduced in 2013, but SHADAC is evaluating the continuation of the enhanced series from 2013 forward.

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APPENDIX. Standard Errors for Percent of Population Uninsured, 2013

	Total population		Non-elderly adults (ages 18 to 64)		
	ACS	NHIS*	ACS	BRFSS	NHIS*
	Point in time	Point in time	Point in time	Point in time	Point in time
United States	0.06	0.21	0.06	0.15	0.29
Alabama	0.24	1.39	0.30	1.00	2.14
Alaska	0.61	*	0.73	0.98	*
Arizona	0.24	1.64	0.24	1.58	1.26
Arkansas	0.30	1.79	0.43	1.16	2.40
California	0.12	0.52	0.12	0.60	0.73
Colorado	0.18	1.50	0.30	0.55	1.59
Connecticut	0.24	1.30	0.36	0.68	2.44
Delaware	0.43	1.48	0.55	0.82	2.56
District of Columbia	0.36	0.90	0.43	0.94	1.80**
Florida	0.12	0.84	0.18	0.72	1.21
Georgia	0.18	1.90	0.24	0.84	2.10
Hawaii	0.24	*	0.36	0.53	*
Idaho	0.49	1.99	0.67	1.04	2.92
Illinois	0.12	0.86	0.18	1.01	1.16
Indiana	0.18	1.45	0.24	0.68	2.29
Iowa	0.18	1.21	0.24	0.67	1.91
Kansas	0.24	1.54	0.30	0.43	2.60
Kentucky	0.18	1.68	0.30	0.76	2.19
Louisiana	0.24	1.52	0.30	1.28	2.33
Maine	0.30	1.57	0.43	0.68	1.84
Maryland	0.18	1.44	0.24	0.67	2.21
Massachusetts	0.12	0.87	0.12	0.43	2.12**
Michigan	0.12	1.02	0.18	0.61	1.38
Minnesota	0.18	1.14	0.18	0.61	1.72
Mississippi	0.30	1.67	0.43	0.97	1.74
Missouri	0.18	1.59	0.24	0.84	2.03
Montana	0.49	*	0.61	0.72	*
Nebraska	0.30	1.79	0.43	0.63	2.87
Nevada	0.36	1.92	0.43	1.43	2.32
New Hampshire	0.30	1.55	0.49	0.76	2.27
New Jersey	0.12	1.17	0.18	0.61	1.90
New Mexico	0.36	*	0.55	0.82	*
New York	0.12	0.69	0.12	0.66	0.87
North Carolina	0.18	1.15	0.24	0.74	1.80
North Dakota	0.49	*	0.61	0.67	*
Ohio	0.12	0.87	0.12	0.64	1.09
Oklahoma	0.18	1.87	0.30	0.76	2.26
Oregon	0.24	1.55	0.30	1.02	2.35
Pennsylvania	0.12	1.02	0.12	0.57	1.43
Rhode Island	0.43	1.43	0.55	0.86	2.23
South Carolina	0.24	1.71	0.30	0.74	2.15
South Dakota	0.43	*	0.49	0.90	*
Tennessee	0.18	1.39	0.24	0.95	2.26
Texas	0.12	0.93	0.18	0.83	1.32
Utah	0.30	1.50	0.36	0.56	2.04
Vermont	0.36	*	0.49	0.66	*
Virginia	0.18	1.23	0.24	0.71	1.72
Washington	0.18	1.49	0.24	0.66	1.77
West Virginia	0.30	1.85	0.49	0.84	2.17
Wisconsin	0.12	1.25	0.18	0.83	2.06
Wyoming	0.55	*	0.79	0.98	*

* NHIS does not release estimates for some states due to sample size.
** The NHIS recommends using estimates from these states with caution because of their relative standard errors between 30% and 50%.

Sources: ACS estimates for civilian noninstitutionalized population from U.S. Census Bureau, 2014, "Health Insurance Coverage in the United States: 2013" and American Fact Finder, accessed September 18, 2014; NHIS estimates from Cohen and Martinez, 2014, "Health Insurance Coverage: Early Release of Estimates from the National Health Interview Survey, 2013"; BRFSS estimates analyzed by SHADAC using 2013 public use file.