



# Comparing Federal Government Surveys That Count the Uninsured: 2017

## INTRODUCTION

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. This brief provides an annual update to comparisons of uninsurance estimates from four federal surveys<sup>i,ii</sup>:

- The American Community Survey (ACS)
- The Current Population Survey (CPS)
- The Medical Expenditure Panel Survey – Household Component (MEPS-HC)
- The National Health Interview Survey (NHIS)

In this brief, we present current and historical national estimates of uninsurance along with the most recent available state-level estimates from these surveys. We also discuss the main reasons for variation in the estimates across the different surveys.

## National Estimates

Table 1 shows the most recent available estimates of uninsurance from each of the four surveys listed above. 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.

**Table 1. National Uninsurance Estimates from Four Federal Surveys: Total Population**

Survey	Time Period	Uninsured for the Entire Year		Uninsured at a Specific Point in Time	
		Number (millions)	Percent of Population	Number (millions)	Percent of Population
ACS	2016	N/A	N/A	27.3	8.6
CPS	2016	28.1	8.8	N/A	N/A
MEPS	2015	26.1	8.1	N/A	N/A
NHIS	2016	16.7	5.2	28.6	9.0

Sources: CPS estimates from U.S. Census Bureau, 2017, "Health Insurance Coverage in the United States: 2016"; ACS estimates for civilian noninstitutionalized population from U.S. Census Bureau, 2017, "Health Insurance Coverage in the United States: 2016" and American Fact Finder, accessed September 15, 2017; NHIS estimates from Cohen, Zammitti, and Martinez, 2017, "Health Insurance Coverage: Early Release of Estimates From the National Health Interview Survey, 2016"; MEPS estimates from [http://meps.ahrq.gov/mepsweb/data\\_stats/summ\\_tables/hc/hlth\\_insr/2015/alltablesfy.pdf](http://meps.ahrq.gov/mepsweb/data_stats/summ_tables/hc/hlth_insr/2015/alltablesfy.pdf).

<sup>i</sup>See Appendix A for 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 insurance estimates.

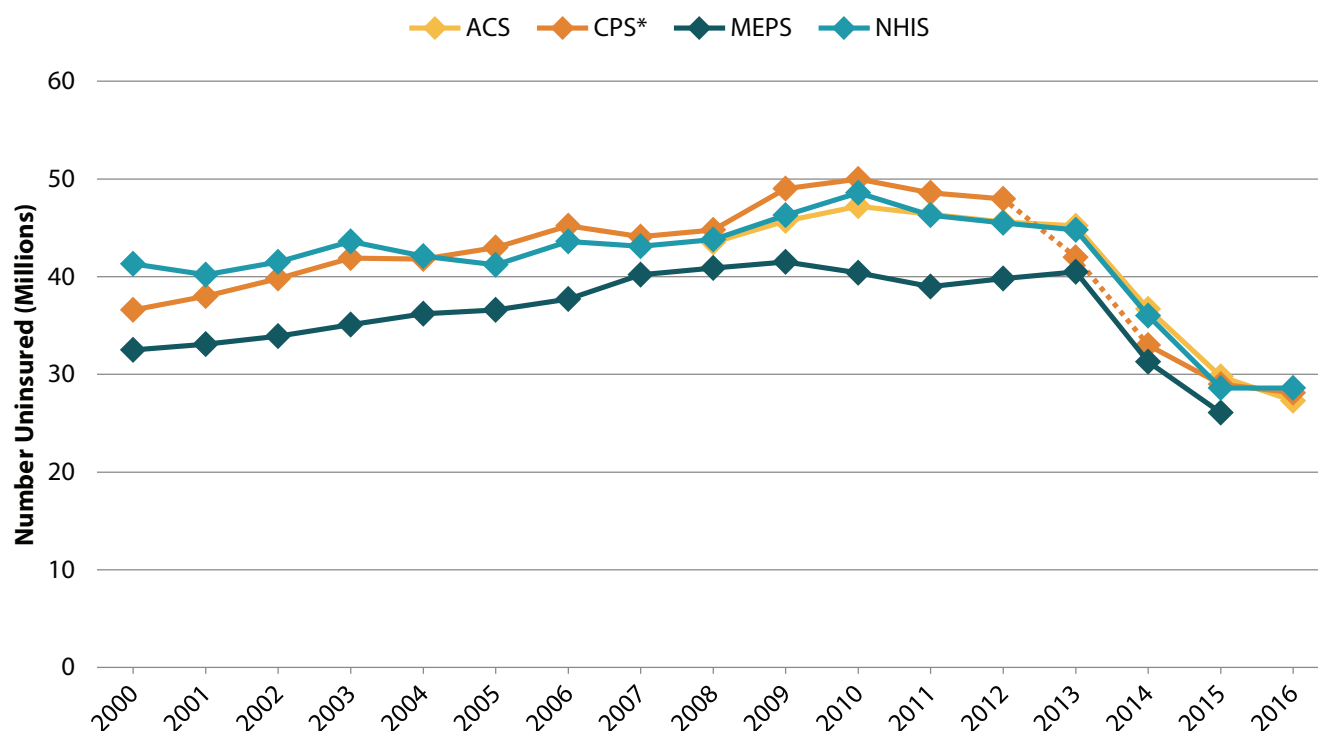
<sup>ii</sup>Another federal survey that provides estimates of the uninsured is the Behavioral Risk Factor Surveillance System (BRFSS), which provides uninsurance estimates for the adult population 18 years and over nationally and among states. Details about the BRFSS are included in Appendix A, and estimates from the BRFSS are provided in Appendix B.

## National Trends

The uninsurance estimates from the four surveys have demonstrated similar national trends over time, as shown in Figure 1. See Appendix A for information on historical changes to the CPS that affect trend analyses.

**Figure 1. Trend in National Number of Uninsured, 2000 to 2016: All Ages**

ACS and NHIS point-in-time estimates of the uninsured; CPS and MEPS estimates of the full-year uninsured



\* Dashed line “---” indicates a break in series.

Sources: CPS estimates from U.S. Census Bureau, 2017, “Health Insurance Coverage in the United States: 2016”; ACS estimates for civilian noninstitutionalized population from U.S. Census Bureau, 2017, “Health Insurance Coverage in the United States: 2016” and American Fact Finder, accessed September 15, 2017; NHIS estimates from Cohen, Zammitti, and Martinez, 2017, “Health Insurance Coverage: Early Release of Estimates From the National Health Interview Survey, 2016”; MEPS estimates from [http://meps.ahrq.gov/mepsweb/data\\_stats/summ\\_tables/hc/hlth\\_insr/2015/alltablesfy.pdf](http://meps.ahrq.gov/mepsweb/data_stats/summ_tables/hc/hlth_insr/2015/alltablesfy.pdf).

## State-Level Estimates

The ACS, CPS, and NHIS are designed to produce state-level uninsurance estimates for all 50 states and the District of Columbia. No state-level estimates of uninsurance are published from the MEPS-HC.

Table 2 presents the most recent state-level estimates of uninsurance from the ACS, CPS, and NHIS. As with the national estimates, the estimated level of uninsurance for states varies across surveys; however, general patterns are consistent, insofar as states with low uninsurance levels have low levels in all the surveys, and states with high levels of uninsurance have high levels in all the surveys, etc.

Table 2: 2016 State-Level Uninsured Rates from Three Federal Surveys: Total Population

	ACS (Point-in-Time)	CPS (Full Year)	NHIS (Point-in-Time)		ACS (Point-in-Time)	CPS (Full Year)	NHIS (Point-in-Time)
United States	8.6	8.8	9.0	Missouri	8.9	8.3	9.4
Alabama	9.1	8.7	10.0	Montana	8.1	7.0	9.3
Alaska	14.0	13.6	N/A	Nebraska	8.6	6.9	10.2
Arizona	10.0	12.1	11.0	Nevada	11.4	8.7	11.0
Arkansas	7.9	7.7	7.1	New Hampshire	5.9	6.5	7.2
California	7.3	7.7	7.1	New Jersey	8.0	7.9	7.2
Colorado	7.5	9.6	7.7	New Mexico	9.2	11.2	11.3
Connecticut	4.9	6.1	3.9	New York	6.1	5.6	5.4
Delaware	5.7	8.9	3.6	North Carolina	10.4	10.8	11.4
Dist. of Columbia	3.9	5.2	N/A	North Dakota	7.0	7.7	N/A
Florida	12.5	12.0	13.8	Ohio	5.6	5.6	6.3
Georgia	12.9	12.3	12.9	Oklahoma	13.8	10.5	16.5
Hawaii	3.5	5.4	2.7	Oregon	6.2	5.3	8.3
Idaho	10.1	8.8	11.2	Pennsylvania	5.6	4.8	7.2
Illinois	6.5	7.4	5.7	Rhode Island	4.3	4.8	4.2
Indiana	8.1	6.6	7.8	South Carolina	10.0	9.1	10.0
Iowa	4.3	5.2	3.7	South Dakota	8.7	7.8	N/A
Kansas	8.7	8.4	7.9	Tennessee	9.0	11.2	8.9
Kentucky	5.1	6.2	6.8	Texas	16.6	15.3	18.7
Louisiana	10.3	10.6	13.1	Utah	8.8	12.1	7.1
Maine	8.0	7.1	7.7	Vermont	3.7	5.4	N/A
Maryland	6.1	6.3	5.6	Virginia	8.7	10.0	9.3
Massachusetts	2.5	5.6	*2.6	Washington	6.0	7.0	5.7
Michigan	5.4	6.3	6.7	West Virginia	5.3	7.3	6.2
Minnesota	4.1	5.9	5.0	Wisconsin	5.3	7.2	6.5
Mississippi	11.8	11.9	12.3	Wyoming	11.5	9.7	N/A

\* Estimates are considered unreliable. Data preceded by an asterisk have a relative standard error (RSE) greater than 30% and less than or equal to 50% and should be used with caution. N/A Data not shown have an RSE greater than 50% or could not be shown due to considerations of sample size.

Sources: ACS estimates for civilian noninstitutionalized population from U.S. Census Bureau, 2017, "Health Insurance Coverage in the United States: 2016" and American Fact Finder, accessed September 15, 2017; CPS estimates from U.S. Census Bureau, 2017, CPS Table Creator, Accessed September 13, 2017; NHIS estimates from Cohen, Zammitti, and Martinez, 2017, "Health Insurance Coverage: Early Release of Estimates From the National Health Interview Survey, 2016."

## 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 they use different questions, statistical designs, and data collection and processing methods. Each of these factors likely contributes to differences in uninsurance estimates. The following section articulates specific differences between the surveys that are included in this brief.

### *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 insurance status at a particular point in time, and some collect multiple measures.

### *Reference period*

Differences in the time period for which coverage is being reported contribute to differences in the survey estimates. Differences in the length of time for which respondents are being asked to recall their insurance coverage status can also result in differences in measurement error across the surveys.<sup>1,2,3,4,5</sup>

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. For their measures of coverage during the prior year, NHIS and MEPS have shorter recall periods than the CPS. The ACS collects information about current coverage only.

### *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.<sup>6</sup> The NHIS and MEPS also verify insurance status for people who do not report any of the specific types of coverage that the survey asks about, but the ACS does not.

Another difference in survey questions that can lead to different estimates across surveys is the fact that the CPS, NHIS, and MEPS use state-specific names for Medicaid and Children’s Health Insurance Program (CHIP) programs, while the ACS does not, instead referring to these programs as Medicaid, Medical Assistance or any kind of government assistance program for those with low incomes or a disability.

### *Missing data and imputation*

The CPS and ACS 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 ACS about 14 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 data.

## Deciding Which Survey Estimates to Use

Health policy analysts must decide which estimates to use among the multiple options available. No single survey provides the “best” estimates overall; rather, the most appropriate estimates will depend on the specific policy or research question being examined. The timeliness of the estimates, the geographies for which estimates are available, and the demographic or socioeconomic characteristics that are included in the estimates—along with the other factors described above—are among key considerations when choosing which estimates to use. For example, those interested in a “first look” at new health insurance coverage estimates will want to use the NHIS, since the NHIS estimates are released before the ACS and CPS estimates. If, on the other hand, sub-state estimates are of interest, the ACS will be the best source due to its large sample size, which allows for sub-state analyses.<sup>7</sup> Every research question will require a consideration of survey characteristics in relation to analytic requirements.

## Conclusion

Federal surveys are essential resources for estimating the number of uninsured. 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 and with health status.

## Suggested Citation

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## About SHADAC

SHADAC is a multidisciplinary health policy research center with a focus on state policy. We are located at the University of Minnesota School of Public Health.

For more information, please visit us at [www.shadac.org](http://www.shadac.org), or contact us at [shadac@umn.edu](mailto:shadac@umn.edu).

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<sup>1</sup> Klerman J.A., Ringel, J.S., & Roth, B. 2005. Under-reporting of Medicaid and welfare in the Current Population Survey. Working Paper. Santa Monica CA: RAND, March 2005.

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<sup>4</sup> Bhandari, S. 2004. People with health insurance: A comparison of estimates from two surveys. Working Paper No. 243. Washington DC: U.S. Census Bureau, June 2004. Available at: <http://www.census.gov/dusd/MAB/wp243.pdf>

<sup>5</sup> Lewis, K, MR Elwood, and J Czajka. 1998. Counting the uninsured: A review of the literature. Washington DC: The Urban Institute, July 1998.

<sup>6</sup> Nelson, C.T. and R.J. Mills. 2001. "The March CPS Health Insurance Verification Question and Its Effect on Estimates of the Uninsured." 2001 Proceedings of the Section on Survey Research Methods, Alexandria, VA: the American Statistical Association.

<sup>7</sup> Planp, C., Sonier, J., & Turner, J. 2014. "Using Recent Revisions to Federal Surveys for Measuring the Effects of the Affordable Care Act." Issue Brief #41. Minneapolis, MN: State Health Access Data Assistance Center, University of Minnesota.

## Appendix A

### Comparison of Federal Surveys Used to Estimate Uninsurance

	ACS	CPS	MEPS-HC	NHIS	BRFSS
<b>Sponsor(s)</b>	Census Bureau	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)	Centers for Disease Control and Prevention (conducted by states)
<b>Primary Focus</b>	General household survey; replaced decennial census long form	Labor force participation and unemployment	Health care access, utilization, and cost	Population health	Population health, risk factors, and health behaviors
<b>Target Population</b>	Entire population	Civilian non-institutionalized population	Civilian non-institutionalized population	Civilian non-institutionalized population	Adult civilian non-institutionalized population
<b>Sample Frame</b>	Address-based (National Master Address File)	Address-based (Census 2010 sampling frame updated with new construction)	NHIS respondents	Commercial address list	Telephone-based (households with landline telephones, plus cell phones added in the 2011 survey)
<b>Data Collection Mode</b>	Mail; in-person; phone; internet	In-person; phone	In-person	In-person	Phone
<b>Type of Uninsurance Measures</b>	Point-in-time	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	Point-in-time; uninsured at some point in the past year (an optional question adopted by 38 states and D.C. in 2013)
<b>Health Insurance Coverage: Verification Question for Uninsured</b>	No	Yes	Yes	Yes	No
<b>State-Specific Names Included for Medicaid/CHIP</b>	No	Yes	Yes	Yes	No
<b>Response Rate</b>	94.7% (2016)	74.4% (2016)	52.2% (2015)	67.9% (2016)	47.1% (2016 combined landline/cell phone median response rate for states)
<b>Survey Period</b>	Monthly	February through April	Panel over two calendar years	Continuous	Monthly
<b>State Health Insurance Estimates</b>	50 states and D.C.	50 states and D.C.	Not published	50 states and DC	50 states and DC
<b>Years Available</b>	2008 to 2016	1987 to 2016 (plus limited point-in-time estimates for 2017)	1996 to 2015	1998 to 2016 (plus first quarter of 2017)	1991 to 2016

## Within-Survey Changes over Time: Questions & Methodology

In the same way that estimates *across* different surveys may not be comparable, estimates *within* the same survey may not always be comparable over time. This incomparability can be due to changes in survey questions and/or changes in survey methodology.

### **Changes in the BRFSS**

In 2011, the BRFSS began using a new sampling frame, adding cell phones to the landlines it had historically sampled. The purpose of this revision was to capture the growing segment of the U.S. population that uses cell phones exclusively so that the survey estimates would more closely reflect the overall population.<sup>i</sup> Because of this methodological change, the CDC advises against comparing BRFSS estimates from 2011 and onward against those from 2010 and earlier.<sup>ii</sup>

### **Changes in the CPS**

In 2014, the CPS incorporated 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 a measure of insurance coverage during the previous year (as was intended).<sup>iii,iv,v</sup> Because of the 2014 CPS revisions, CPS data from 2013 and onward are not comparable to data from 2012 and earlier.

The CPS has made other revisions that have created a break in its time series. In 2000, the survey added an insurance verification question, asking people who did not report coverage whether they were, in fact, uninsured.<sup>vi</sup> This change improved the accuracy of the CPS's uninsurance estimate by allowing respondents to confirm their coverage status, but it also caused a break in the comparability of CPS estimates from 1998 and earlier versus 1999 and later.

The CPS has also made methodological changes that could affect the comparability of its estimates over time, such as changes in the weighting of data.<sup>viii</sup>

## Appendix B

**Table B1. National Uninsurance Estimates from Five Federal Surveys: Non-Elderly Adults (Ages 18 to 64)**

Survey	Time Period	Uninsured for the Entire Year		Uninsured at a Specific Point in Time	
		Number (millions)	Percent of Population	Number (millions)	Percent of Population
ACS	2016	N/A	N/A	23.7	12.0
CPS	2016	23.5	11.9	N/A	N/A
MEPS	2015	23.2	11.7	N/A	N/A
NHIS	2016	14.9	7.6	24.5	12.4
BRFSS	2016	N/A	N/A	27.7	14.1

Sources: CPS estimates from U.S. Census Bureau, 2017, "Health Insurance Coverage in the United States: 2016"; ACS estimates for civilian noninstitutionalized population from U.S. Census Bureau, 2017, "Health Insurance Coverage in the United States: 2016" and American Fact Finder, accessed September 15, 2017; NHIS estimates from Cohen, Zammitti, and Martinez, 2017, "Health Insurance Coverage: Early Release of Estimates From the National Health Interview Survey, 2016."; MEPS estimates from [http://meps.ahrq.gov/mepsweb/data\\_stats/summ\\_tables/hc/hlth\\_insr/2015/alltablesfy.pdf](http://meps.ahrq.gov/mepsweb/data_stats/summ_tables/hc/hlth_insr/2015/alltablesfy.pdf). BRFSS estimates by SHADAC using 2016 public use files.



**Table B2. 2016 State-Level Uninsured Rates from Four Federal Surveys: Non-Elderly Adults (Ages 18 to 64)**

	ACS (Point-in-Time)	CPS (Full Year)	BRFSS (Point-in-Time)	NHIS (Point-in-Time)		ACS (Point-in-Time)	CPS (Full Year)	BRFSS (Point-in-Time)	NHIS (Point-in-Time)
<b>United States</b>	12.0	11.9	14.1	12.4	<b>Missouri</b>	12.8	12.0	13.8	13.0
<b>Alabama</b>	13.9	12.7	16.0	15.0	<b>Montana</b>	11.7	10.9	12.4	13.6
<b>Alaska</b>	17.8	15.3	12.3	N/A	<b>Nebraska</b>	12.0	10.0	14.7	13.3
<b>Arizona</b>	13.7	15.5	15.5	13.0	<b>Nevada</b>	15.5	12.1	17.9	14.5
<b>Arkansas</b>	11.6	10.9	13.0	11.0	<b>New Hampshire</b>	8.4	8.9	8.3	10.0
<b>California</b>	10.3	9.8	12.8	9.5	<b>New Jersey</b>	11.2	10.4	13.1	9.9
<b>Colorado</b>	10.2	12.8	12.7	11.1	<b>New Mexico</b>	13.0	15.4	12.0	16.9
<b>Connecticut</b>	6.7	8.6	8.2	6.0	<b>New York</b>	8.5	8.0	11.4	7.2
<b>Delaware</b>	7.9	13.2	10.9	5.4	<b>North Carolina</b>	15.1	14.8	17.0	16.2
<b>Dist. of Columbia</b>	4.6	6.0	5.9	N/A	<b>North Dakota</b>	8.3	10.2	9.3	N/A
<b>Florida</b>	18.4	17.4	21.4	20.0	<b>Ohio</b>	7.7	7.6	8.4	8.9
<b>Georgia</b>	18.0	16.7	20.3	18.5	<b>Oklahoma</b>	19.7	14.3	18.3	23.6
<b>Hawaii</b>	4.9	7.7	8.3	3.6	<b>Oregon</b>	8.7	7.4	11.4	11.1
<b>Idaho</b>	14.9	12.9	18.9	16.7	<b>Pennsylvania</b>	7.5	6.8	8.5	8.9
<b>Illinois</b>	9.2	10.7	10.7	8.6	<b>Rhode Island</b>	6.1	6.7	9.2	6.1
<b>Indiana</b>	10.8	8.8	13.6	11.3	<b>South Carolina</b>	14.9	12.6	16.2	15.0
<b>Iowa</b>	6.0	7.6	7.8	5.8	<b>South Dakota</b>	12.8	11.0	10.3	N/A
<b>Kansas</b>	12.6	11.9	15.9	11.7	<b>Tennessee</b>	13.3	16.4	13.9	13.3
<b>Kentucky</b>	7.1	8.5	6.8	9.6	<b>Texas</b>	22.7	20.5	25.6	25.3
<b>Louisiana</b>	15.5	15.0	16.7	19.0	<b>Utah</b>	11.7	15.0	13.3	10.0
<b>Maine</b>	11.6	9.0	11.2	11.4	<b>Vermont</b>	5.4	7.3	6.2	N/A
<b>Maryland</b>	8.3	8.6	10.2	6.8	<b>Virginia</b>	12.0	13.6	13.7	13.7
<b>Massachusetts</b>	3.6	6.6	6.8	4.0	<b>Washington</b>	8.5	9.4	10.6	8.3
<b>Michigan</b>	7.6	8.4	9.9	9.5	<b>West Virginia</b>	8.0	10.8	9.3	9.5
<b>Minnesota</b>	5.3	8.6	7.7	6.7	<b>Wisconsin</b>	7.2	9.3	10.3	8.5
<b>Mississippi</b>	17.7	17.7	20.2	18.8	<b>Wyoming</b>	15.3	12.4	16.8	N/A

\* Estimates are considered unreliable. Data preceded by an asterisk have a relative standard error (RSE) greater than 30% and less than or equal to 50% and should be used with caution. N/A Data not shown have an RSE greater than 50% or could not be shown due to considerations of sample size.

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- <sup>iii</sup> Turner, J, Boudreaux, M. 2014. "An Introduction to Redesigned Health Insurance Coverage Questions in the 2014 CPS." SHADAC Brief #39. Minneapolis, MN: State Health Access Data Assistance Center. Available at: <http://www.shadac.org/publications/cpsbrief>
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- <sup>vii</sup> 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 IPUMS CPS (<https://cps.ipums.org/cps/>). The enhanced time series is available from 1987 to 2012. It does not bridge the re-design introduced in 2013.
- <sup>viii</sup> State Health Access Data Assistance Center. 2010. "Comparing State Uninsurance Estimates: SHADAC-Enhanced CPS and CPS." Issue Brief #21. Minneapolis, MN: University of Minnesota. Available at: <http://www.shadac.org/files/shadac/publications/IssueBrief21.pdf>