



## **Variation in Health Insurance Coverage Surveys: Behavioral Risk Factor Survey vs. Current Population Survey**

To select a single source of data for the state-by-state analyses conducted for *Cover the Uninsured Week*, SHADAC considered the availability of the following:

- Consistent and timely data from all 50 states and Washington DC
- Large annual sample sizes in all states
- Health insurance coverage measures
- Healthcare access measures
- Large state samples of minority group members
- Data on children
- Data on adults 18-64 years of age

The two surveys that scored the highest on our criteria were the Center for Disease Control and Prevention's Behavioral Risk Factor Surveillance System (BRFSS) survey and the Census Bureau's Current Population Survey Annual Demographic Supplement (CPS-DS). Both surveys produce estimates of health insurance coverage for all 50 states and Washington DC. The CPS-DS, however, has a smaller sample size of 18-64 year olds (in most states and for the nation as a whole) and does not measure health care access. The BRFSS met all of the above criteria except having data available on children in all states and DC (Blewett et al. 2004). We therefore chose the BRFSS for our analysis because it includes healthcare access items and this is crucial to our analysis.

Our choice of survey impacts our estimates of the percent and number of people with particular characteristics such as health insurance coverage, labor force participation, healthcare access, and healthcare utilization. Despite the differences, *the significant findings* do not often vary by survey. For example, the following list of statements is supported by data from a number of national surveys, including the BRFSS and CPS-DS:

- Significant numbers of uninsured adults live in every state and D.C.
- Many uninsured people are working.
- Minorities are less likely to have health insurance coverage.
- Individuals who lack health insurance coverage are less likely to access healthcare.
- There is a significant amount of variation among states with respect to the factors listed above.

## **BRFSS vs. CPS-DS: Methods**

The literature has explored the specific differences between the BRFSS and the CPS-DS described below (Nelson et al. 2003; Congressional Budget Office 2003; Fronstin 2000; Lewis et al. 1998; Farley-Short 2001). The surveys differ in:

- Sample selection and population coverage
- Mode of survey administration
- Operationalization of the concept of uninsurance, and
- Data processing procedures (e.g., imputation).

**Sample selection and population coverage:** BRFSS and CPS-DS use different sampling strategies – BRFSS samples telephone numbers using random digit dialing (RDD) and CPS-DS samples households from an address-listing file (updated continuously by the Census Bureau.) Thus, population coverage varies by survey as households without telephones are included in the CPS-DS, but not in the BRFSS. Also, people in phoneless households are more likely to be uninsured than those with telephones (Davern, Lepkowski et al. 2004). Furthermore, population coverage problems in RDD-only surveys affect concepts other than health insurance because people in households with telephones have different characteristics than those in households without telephones (Groves 1990; Keeter 1995).<sup>1</sup>

**Mode of survey administration:** CPS-DS is a mixed mode survey using both telephone and in-person interviews. In-person interviews are used for the first month a household and/or family is included in the sample, and primarily by telephone thereafter. The 2003 BRFSS was a telephone-only survey, which tends to have lower response rates than mixed-mode government surveys like the CPS-DS. The median response rate for the 2003 BRFSS was 42.4 percent compared to the CPS-DS' 84 percent. Furthermore, evidence indicates some differences in sample demographic representation in telephone-only surveys compared to mixed-mode or in-person-only surveys (Groves 1990; Groves and Kahn 1979; Thornberry and Massey 1988). For example, telephone surveys tend to have a smaller percentage of people in lower income categories, and a smaller percentage of people with less than a high school education.

**Operationalization of the concept of uninsurance:** The manner in which the surveys operationalize the concept of uninsurance includes both the reference period (or the timeframe addressed by the survey questions) and the timing of data collection activities.

Reference period: CPS-DS employs a list of specific possible types of health insurance coverage and elicits responses regarding coverage at any time during the previous calendar year, whereas BRFSS asks one general question regarding health insurance coverage at the point in time the person is interviewed.

Specifically, the CPS-DS question stem asks the respondent if s/he or anyone else in the household had the following types of insurance coverage at any point during the last year:

- *Employer-based*
- *Private insurance (self-purchased insurance)*
- *Medicare*
- *Medicaid*<sup>2</sup>
- *State-specific health insurance programs (including SCHIP)*
- *CHAMPUS/VA/Military Health Care*
- *Indian Health Service*<sup>3</sup>

Respondents are classified as uninsured if they do not answer, “yes” to any of the above options. If no coverage is reported, an uninsurance verification question is asked:

*I have recorded that (READ NAMES) were not covered by a health plan at any time in YEAR. Is that correct?*

*(IF NO) Who should be marked as covered?*

*(FOR EACH PERSON) What type of insurance was (NAME) covered by in YEAR? (Read list)*

Respondents are allowed to report up to six different types of insurance from the list. In our multivariate analysis, our dependent variable is equal to ‘1’ if the person is uninsured and ‘0’ if they are covered.

The BRFSS, by contrast, asks a single, general question about the respondent’s health insurance coverage at the point in time s/he is interviewed:

*Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?*

Timing of data collection: The BRFSS is conducted throughout the year, while the CPS-DS is conducted in February through April (Centers for Disease Control and Prevention 2004; US Census Bureau 2002).

Despite the fact that the CPS-DS health insurance items use the entire last year as the reference period for the health insurance coverage survey items, there is considerable debate about what these estimates actually measure. Officially, the Census Bureau refers to the 2003 CPS-DS health insurance estimates as representing calendar year 2002. Some researchers, however, feel that the estimates actually reflect a point-in-time estimate as of the interview (Congressional Budget Office 2003; Swartz 1994; Nelson and Short 1990). This assertion is based on comparing the CPS estimates derived from other surveys such as the National Health Interview Survey (NHIS) and the Medical Expenditure Panel Survey (MEPS).

**Data processing procedures:** BRFSS does not impute missing items so in preparing this report we fully imputed all the variables used in the analysis using a similar procedure to the CPS-DS. We did not do this for the Characteristics of the Uninsured: A View from the States released as part of the 2004 Cover the Uninsured Week (a set of comparable tables using the same method on the data released last year is available upon request). The US Census Bureau, on the other hand, fully imputes and edits the CPS-DS data file. Both the Census Bureau’s routine for imputing data as well as the one we used could introduce biases into the estimates that could lead to differing estimates between the surveys (Davern, Blewett et al. forthcoming; Little and Rubin 1987). Data editing procedures can introduce differences as well. For example, the CPS-DS edits children to have Medicaid if one of the primary family members reports TANF income regardless of whether Medicaid coverage was reported (Lewis et al. 1998).

Another possibly important difference between the surveys is that different vendors, selected by the states, conduct the BRFSS interviews, while the Census Bureau maintains control over the CPS-DS. Despite the best efforts of the CDC to maintain a tight set of standards for vendors to follow when collecting BRFSS data (Centers for Disease Control 2004), even seemingly small differences in interviewer training, data collection procedures, and sample management could produce heterogeneity from state to state.

## **BRFSS vs. CPS-DS: Demographics**

Table 1 shows economic and demographic variables for adults 18-64 from the 2003 BRFSS and CPS-DS surveys.

Race: The percentage of Blacks in the two surveys differs, with 11.7 percent in the CPS-DS and 10.3 percent in the BRFSS sample.

Employment/Education: Compared to the BRFSS, the CPS-DS has more employed people, more people with a high school degree, and more people with less than a high school degree. The BRFSS sample has more people with some college education or a college degree.

Health: The CPS-DS sample has more people who report at least being in good health than the BRFSS.

Income: The income differences between the two surveys are also non-trivial. The BRFSS has fewer people in the \$50,000-\$74,999 and the \$75,000 and over income brackets than does the CPS-DS. The BRFSS also has more people in the middle of the income distribution than the CPS-DS with more people in the following four income groups: \$15,000-\$19,999, \$20,000-\$24,999, \$25,000-\$34,999, and \$35,000-\$49,999. Finally, the BRFSS has fewer people with either missing income or income below \$10,000 than the CPS-DS.

Age: The BRFSS sample includes a larger number of people in the 50-64 year old age group. The BRFSS sample also has more married people than the CPS-DS.

## **Conclusion**

Though BRFSS, CPS-DS, and other health insurance coverage surveys offer different point estimates of insurance coverage rates, the major findings from these surveys are similar. Namely, that there are many people in every state without health insurance, most of whom are working adults. Minority populations are less like to be insured, and the uninsured have less access to health care services.

Comparing the health insurance coverage estimates produced by the BRFSS and the National Health Interview Survey (NHIS), Nelson et al. (2003) found that the two surveys produced similar results despite a host of methodological differences between the surveys. Also, Davern, Davidson et al. (2004) use multivariate statistical techniques to evaluate the BRFSS and CPS-DS and find that, despite substantive differences in survey design and methodologies, the two surveys result in remarkably similar insights about health insurance coverage.

Both the BRFSS and CPS-DS have advantages and disadvantages, depending on one's analysis design and criteria. Our criteria led us to choose the BRFSS for the CTUW state-by-state analysis. Many states collect extremely high quality data on health insurance coverage and its relationship to the factors examined in the CTUW report. When doing an analysis within the particular state this data is often preferred to the CPS-DS and the BRFSS (SHADAC Issue Brief #3). However, when the objective is comparing all the states to each other in order the options are narrowed to either the CPS-DS or the BRFSS.

**Table 1: Differences Between the 2003 Current Population Survey (CPS-DS) and the 2003 Behavioral Risk Factor Surveillance System (BRFSS) Demographics, Adults 18-64**

Variables	CPS-DS 2003		BRFSS 2003		
	Estimate	Std Error	Estimate	Std Error	
Covered	80.5%	0.17%	81.7%	0.18%	***
Black	11.7%	0.14%	10.3%	0.13%	***
Hispanic	13.4%	0.15%	13.9%	0.19%	
Male	49.3%	0.12%	49.8%	0.21%	*
Employed	72.6%	0.16%	70.7%	0.20%	***
Age 18-29	25.9%	0.17%	25.8%	0.21%	
Age 30-49	48.2%	0.19%	47.7%	0.21%	
Age 50-64	25.9%	0.18%	26.5%	0.17%	*
No high school degree	14.0%	0.14%	10.9%	0.15%	***
High school degree	30.9%	0.17%	29.5%	0.19%	***
Some college	20.6%	0.15%	27.7%	0.19%	***
College degree	34.4%	0.19%	31.9%	0.19%	***
At least good health	89.8%	0.11%	86.7%	0.15%	***
Married	56.8%	0.20%	59.3%	0.21%	***
<\$10,000 or Income Missing	20.6%	0.20%	15.6%	0.16%	***
\$10,000 - \$14,999	4.5%	0.09%	4.3%	0.10%	
\$15,000 - \$19,999	3.7%	0.09%	6.3%	0.11%	***
\$20,000 - \$24,999	5.1%	0.10%	7.9%	0.11%	***
\$25,000 - \$34,999	10.5%	0.14%	11.6%	0.14%	***
\$35,000 - \$49,999	13.3%	0.16%	15.7%	0.15%	***
\$50,000 - \$74,999	17.7%	0.19%	16.4%	0.15%	***
\$75,000 and over	24.6%	0.21%	22.2%	0.17%	***

\* p < .05

\*\*\* p<.001

Source: 2003 Current Population Survey – Demographic Supplement (CPS-DS), U.S. Census Bureau  
 2003 Behavioral Risk Factor Surveillance System (BRFSS), Centers for Disease Control and Prevention

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<sup>1</sup> The 2003 BRFSS did not use a telephone service interruption weighting adjustment (Centers for Disease Control 2003).

<sup>2</sup> States vary considerably in how they refer to their public health care programs. The March CPS-DS allows state flexibility in use of state-specific program language (e.g., Medicaid is referred to as Medi-Cal in California and Medical Assistance in Minnesota).

<sup>3</sup> Respondents with Indian Health Service coverage only were not considered insured.