Attachment 11: 2013 Summary Data Quality Report

| Behavioral Risk Factor Surveillance System |
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| 2013 Summary Data Quality Report |
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# Introduction

The Behavioral Risk Factor Surveillance System (BRFSS) is a state-based, CDC-assisted health data collection project. It comprises telephone surveys conducted by the health departments of all 50 states, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam. This Summary Data Quality Report presents detailed descriptions of the 2013 BRFSS calling outcomes and call summary information for each of the states and territories that participated in the 2013 BRFSS. All BRFSS public-use data are collected by landline telephone and cellular telephone to produce a single data set aggregated from the 2013 BRFSS territorial and state-level data sets. The variables and outcomes provided in this document are applicable to a combined data set of responses from participants using landline telephones and cellular telephones within each of the states and territories.

The inclusion of data from cellular telephone interviews in the BRFSS public release data set has been standard protocol since 2011. In many respects, 2011 was a year of change—both in BRFSS approach and methodology. As the results of cellular telephone interviews were added in 2011, so were new weighting procedures that could accommodate the inclusion of new weighting variables. Data users should note that new weighting procedures are likely to affect trend lines when comparing BRFSS data collected before and after 2011; because of these changes, users are advised NOT to make direct comparisons with pre-2011 data, and instead, begin new trend lines with that year. Details of changes beginning with the 2011 BRFSS are provided in the *Morbidity and Mortality Weekly Report* (*MMWR*), which highlights weighting and coverage effects on trend lines [1].

The measures presented in this document are designed to summarize the quality of the 2013 BRFSS survey data. Response rates, cooperation rates, and refusal rates for BRFSS are calculated using standards set by the American Association of Public Opinion Research (AAPOR) [2]. The BRFSS has calculated 2013 response rates using AAPOR Response Rate #4, which is in keeping with rates provided by BRFSS prior to 2011 using rates from the Council of American Survey Research Organizations (CASRO) [3].

Based on the guidelines of AAPOR, response rate calculations include assumptions of eligibility among potential respondents/households that are not interviewed. Changes in the geographic distribution of cellular telephone numbers by telephone companies and the portability of landline telephone numbers are likely to make it more difficult than in the past to ascertain which telephone numbers are out-of-sample and which telephone numbers represent “likely households.” The BRFSS calculates likely households using the proportions of eligible households among all phone numbers where eligibility has been determined. This “eligibility factor” appears in calculations of response-, cooperation-, resolution-, and refusal rates.

# Interpretation of BRFSS Response Rates

Because this report reflects the initial inclusion of BRFSS cellular telephone interviews, contextual information on cellular telephone response rates is provided below. Although cellular telephone response rates are generally lower than landline telephone response rates across most surveys, the BRFSS has achieved a cellular telephone response rate that compares favorably with other similar surveys (Table 1).

|  |
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| **Table 1**Examples of Cellular Telephone and Landline Survey Response Rates |
|  | **Response Rates** |
| **Survey** | **Year(s)** | **Landline** | **Cell Phone** |
| California Health Interview Survey (CHIS)1 | 2011–2012 | 19.7% | 11.1% |
| The Commonwealth Fund 2010 Biennial Health Insurance Survey2 | 2012 | 22.0% | 19.0% |
| National Immunization Survey (NIS)3 | 2011 | 61.7% a | 25.2% |
| Pew Internet and American Life Project4 | 2012 | 11.1% | 10.0% |
| National Adult Tobacco Survey (NATS)5 | 2009–2010 | 40.4% | 24.9% |
| BRFSS6 | 2013 | 49.6% | 37.8% |
| aUnlike the BRFSS, the NIS does not include household sampling in the landline portion of the study but interviews the adult who self-identifies as "most knowledgeable" about household immunization information. |
| [1](http://www.statcan.gc.ca/pub/12-001-x/2011001/article/11443-eng.pdf)http://healthpolicy.ucla.edu/chis/design/Documents/chis2011-2012-method-2\_2014-02-21.pdf |
| [2http://www.commonwealthfund.org/Surveys/2013/Biennial-Health-Insurance-Survey.aspx](http://www.commonwealthfund.org/Surveys/2011/Mar/2010-Biennial-Health-Insurance-Survey.aspx?view=print&page=all.) |
| [3http://www.cdc.gov/vaccines/stats-surv/nis/dual-frame-sampling-08282012.htm](http://www.cdc.gov/vaccines/stats-surv/nis/dual-frame-sampling-08282012.htm) |
| [4http://www.people-press.org/2006/05/15/the-cell-phone-challenge-to-survey-research/](http://www.people-press.org/2006/05/15/the-cell-phone-challenge-to-survey-research/.) |
| 5http://www.cdc.gov/tobacco/data\_statistics/surveys/nats/ |
| 6BRFSS response rates are presented here as median rates for all states and territories |

Research by the Pew Research Center indicates that response rates for all telephone-based surveys have declined in recent years [4]. Despite lower response rates, this research supports previous findings [5] that weighting to demographic characteristics of respondents ensures accurate estimates for most measures.

The following tables present landline telephone and cellular telephone calling outcomes and rates. The BRFSS cellular telephone survey was collected in a manner similar to the BRFSS landline telephone survey. One important difference, however, is that interviews conducted by landline telephones include random selection among adults within households, while cellular telephone interviews are conducted with adults who are contacted on personal (nonbusiness) cellular telephones. The report presents data on three general types of measure by state:

1. Call outcome measures, including response rates, which are based on landline telephone disposition codes.

2. Call outcome measures, including response rates, which are based on cellular telephone disposition codes.

3. A weighted response rate, based on a combination of the landline telephone response rate with the cellular telephone response rate proportional to the total sample used to collect the data for a state.

The BRFSS recommends that authors/researchers referencing BRFSS data quality include the following language, below. Note the places where authors should include information specific to their projects.

|  |
| --- |
| Response rates for BRFSS are calculated using standards set by the American Association of Public Opinion Research (AAPOR) Response Rate Formula #4 (http://www.aapor.org/Standard\_Definitions2.htm). The response rate is the number of respondents who completed the survey as a proportion of all eligible and likely-eligible persons. The median survey response rate for all states, territories and Washington, DC, in 2013 was 46.4, and ranged from 29.0 to 60.3.a Response rates for states and territories included in this analysis had a median of [provide median] and ranged from [provide range],b For detailed information see the BRFSS Summary Data Quality Report.c |
| a Response rates and ranges should reflect the year(s) included in the analyses.b Response rates for states selected for analysis should be included here. This sentence may be omitted if all states are used in the analysis. c This link is to the Summary Data Quality Report for the year(s) included in the analyses. http://www.cdc.gov/brfss/technical\_infodata/quality.htm |

# BRFSS 2013 Call Outcome Measures and Response Rate Formulae

The calculations of calling outcome rates are based on final disposition codes that are assigned after all calling attempts have been exhausted. The BRFSS may make up to 15 attempts to reach respondents prior to assigning a final disposition code. In 2013, the BRFSS used a single set of disposition codes for both landline and cell phones, adapted from standardized AAPOR disposition codes for telephone surveys. A few disposition codes apply only to landline telephone or cellular telephone sample numbers. For example, answering-device messages may confirm household eligibility for landline telephone numbers but are not used to determine eligibility of cellular telephone numbers. Disposition codes reflect whether interviewers have completed or partially completed an interview (1000 level codes), determined that the household was eligible without completing an interview (2000 level codes), determined that a household or respondent was ineligible (4000 level codes), or was unable to determine the eligibility of a household and/or respondent (3000 level codes). The table below illustrates the codes used by the BRFSS in 2013 and it notes the instances where codes are used only for landline telephone or cellular telephone sample numbers.

The Disposition Code Table below uses a number of terms to define and categorize outcomes. These include:

* Respondent: A person who is contacted by an interviewer and who may be eligible for interview.
* Landline telephone: A telephone that is used within a specific location, including traditional household telephones, VOIP, and internet phones connected to computers in a household.
* Cellular telephone: A mobile device that is not tied to specific location for use.
* Selected respondent: A person who is eligible for interview. For the cellular telephone sample, a selected respondent is an adult associated with the phone number who lives in a private residence or college housing within the US or territories covered by the BRFSS. For the landline telephone sample, a selected respondent is the person chosen for interview during the household enumeration section of the screening questions.
* Personal cellular telephone: A cellular telephone that is used for personal calls. Cellular telephones that are used for both personal and business calls may be categorized as personal telephones and persons contacted on one are eligible for interview. Persons using business-only telephones are not using personal telephones and, therefore, are not eligible for interview.

| **Table 2**2013 Landline Telephone and Cellular Telephone BRFSS Disposition Codes |
| --- |
| **Category** | **Code** | **Description** |
| Interviewed (1000 level codes) | 1100 | Completed interview |
| 1200 | Partially completed interview |
| Eligible, Non-Interview (2000 level codes) | 2111 | Household level refusal (used for landline only) |
| 2112 | Selected respondent refusal |
| 2120 | Break off/termination within questionnaire |
| 2210 | Selected respondent never available |
| 2220 | Household (nonbusiness) answering device (used for landline only) |
| 2320 | Selected respondent physically or mentally unable to complete interview |
| 2330 | Language barrier of selected respondent |
| Unknown Eligibility | 3100 | Unknown if housing unit |
| 3130 | No answer |
| 3140 | Answering device, unknown whether eligible |
| 3150 | Telecommunication barrier (i.e. call blocking) |
| 3200 | Household, not know if respondent eligible |
| 3322 | Physical or mental impairment (household level) |
| 3330 | Language barrier (household level) |
| 3700 | On never call list |
| Not Eligible | 4100 | Out of sample |
| 4200 | Fax/data/modem |
| 4300 | Nonworking/disconnected number |
| 4400 | Technological barrier (i.e. fast busy, phone circuit barriers) |
| 4430 | Call forwarding/pager |
| 4450 | Cellular telephone number (used for landline telephone only) |
| 4460 | Landline telephone number (used for cellular telephone only) |
| 4470 | Cellular telephone respondent ineligible due to percent of landline usage |
| 4500 | Non-residence |
| 4510 | Group home |
| 4700 | Household, no eligible respondent (teen phone/minor child cellular telephone) |
| 4900 | Miscellaneous, non-eligible |

Factors affecting the distribution of disposition codes by state include differences in telephone systems, sample designs, surveyed populations, and data collection processes. Table 3 defines the categories of disposition codes used to calculate outcome and response rates illustrated in Tables 4A through 6.

| **Table 3**2013 Landline and Cellular Telephone BRFSS Disposition Codes |
| --- |
| **Category** | **Disposition Code Definitions** | **Formulae Abbreviation** |
| Completed interviews | 1100+1200 | COIN |
| Eligible | 1100+1200+2111+2112+2120+2210+2220+2320+2330 | ELIG |
| Contacted eligible | 1100+1200+2111+2112+2120+2210+2320+2330 | CONELIG |
| Terminations and refusals | 2111+2112+2120 | TERE |
| Ineligible phone numbers | All 4000 level disposition codes | INELIG |
| Unknown whether eligible | All 3000 level disposition codes | UNKELIG |
| Eligibility factor | ELIG/(ELIG + INELIG) | E |

**Eligibility Factor**

E = ELIG/ (ELIG + INELIG)

The Eligibility Factor is the proportion of eligible phone numbers from among all sample numbers for which eligibility has been determined. The eligibility factor, therefore, provides a measure of eligibility that can be applied to sample numbers with unknown eligibility. The purpose of the eligibility factor is to estimate the proportion of the sample that is likely to be eligible. The eligibility factor is used in the calculations of refusal and response rates. Separate eligibility factors are calculated for landline telephones and cellular telephone samples for each state and territory.

 **Resolution Rate**

((ELIG + INELIG) / (ELIG+INELIG+UNKELIG))\*100

The Resolution Rate is the percentage of numbers in the total sample for which eligibility has been determined. The total number of eligible and ineligible sample phone numbers is divided by the total number of phone numbers in the entire sample. The result is multiplied by 100 to calculate the percentage of the sample for which eligibility is determined. Separate resolution rates are calculated for landline telephone and cellular telephone samples for each state and territory.

 **Interview Completion Rate**

(COIN / (COIN + TERE)) \* 100

The Interview Completion Rate is the rate of completed interviews among all respondents who have been determined to be eligible and selected for interviewing. The numerator is the number of complete and partially completed interviews. This number is divided by the number of completed interviews, partially completed interviews, and all break offs, refusals, and terminations. The result is multiplied by 100 to provide the percentage of completed interviews among eligible respondents who are contacted by interviewers. Separate interview completion rates are calculated for landline telephone and cellular telephone samples for each state and territory.

 **Cooperation Rate**

(COIN / CONELIG) \*100

The AAPOR Cooperation Rate is the number of complete and partial complete interviews divided by the number of contacted and eligible respondents. The BRFSS Cooperation Rate follows the guidelines of AAPOR Cooperation Rate #2. Separate cooperation rates are calculated for landline telephone and cellular telephone samples for each state and territory.

**Refusal Rate**

(TERE / (ELIG + (E \* UNKELIG))) \* 100

The BRFSS Refusal Rate is the proportion of all eligible respondents who refused to complete an interview or terminated an interview prior to the threshold required to be considered a partial interview. Refusals and terminations (TERE) are in the numerator, and the denominator includes all eligible numbers and a proportion of the numbers with unknown eligibility. The proportion of numbers with unknown eligibility is determined by the eligibility factor (E; described above). The result is then multiplied by 100 to provide a percentage of refusals among all eligible and likely to be eligible numbers in the sample. Separate refusal rates are calculated for landline telephone and cellular telephone samples for each state and territory.

**Response Rate**

(COIN / ((ELIG + (E \* UNKELIG))) \* 100

A Response Rate is an outcome rate with the number of complete and partial interviews in the numerator and an estimate of the number of eligible units in the sample in the denominator. The BRFSS Response Rate calculation assumes that the unresolved numbers contain the same percentage of eligible households or eligible personal cell phones as the records whose eligibility or ineligibility are determined. The BRFSS Response Rate follows the guidelines for AAPOR Response Rate #4. It also is similar to the BRFSS CASRO Rates reported prior to 2011. Separate eligibility factors are calculated for landline telephone and cellular telephone samples for each state and territory and a combined Response Rate for landline telephone and cellular telephone also is calculated. The combined landline telephone and cellular telephone response rate is generated by weighting to the respective size of the two samples. The total sample equals the landline telephone sample plus cellular telephone sample. The proportion of each sample is calculated using the total sample as the denominator. The formulae for the proportions of the sample are found below:

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| **P1 = TOTAL LANDLINE SAMPLE / (TOTAL LANDLINE SAMPLE + TOTAL CELL PHONE SAMPLE);** |
| **P2 = TOTAL CELL PHONE SAMPLE / (TOTAL LANDLINE SAMPLE + TOTAL CELL PHONE SAMPLE);** |
| The formula for the Combined Landline Telephone and Cellular Telephone Weighted Response Rate, therefore, is described below: |
| **COMBINED RESPONSE RATE= (P1 \* LANDLINE RESPONSE RATE) + (P2 \* CELL PHONE RESPONSE RATE).** |

# Tables of Outcomes and Rates by State

The tables on the following pages illustrate calling outcomes in categories of eligibility, rates of cooperation, refusal, resolution, and response by landline telephone and cellular telephone samples.

* Tables 4A and 4B provide information on the size of the sample and the numbers and percentages of completed interviews, terminations and refusals, and contacts with eligible households by state and territory.
* Tables 5A and 5B provide information on the number and percentage of landline telephone and cellular telephone sample numbers that are eligible, ineligible, and of unknown eligibility.
* Table 6 provides response rates for landline telephone samples, cellular telephone samples, and combined samples.

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| **Table 4A****Completions, Terminations and Refusals, Contacted Eligible Households** **and Total Sample by State (Landline Sample)** |
|  | **COIN1** | **TERE1** | **CONELIG1** |  |
| **State** | **N** | **%** | **N** | **%** | **N** | **%** | **Total Landline Sample** |
| AL | 5,034 | 3.9 | 4,300 | 3.3 | 11,359 | 8.8 | 128,697 |
| AK | 3,453 | 3.0 | 1,554 | 1.4 | 5,906 | 5.2 | 113,850 |
| AZ | 2,730 | 5.0 | 1,303 | 2.4 | 4,573 | 8.4 | 54,240 |
| AR | 4,033 | 5.1 | 2,133 | 2.7 | 7,149 | 9.0 | 79,650 |
| CA | 6,634 | 2.9 | 2,486 | 1.1 | 12,954 | 5.7 | 225,697 |
| CO | 9,847 | 8.9 | 1,710 | 1.5 | 13,259 | 12.0 | 110,550 |
| CT | 5,874 | 5.3 | 2,692 | 2.4 | 10,025 | 9.1 | 110,250 |
| DE | 3,978 | 5.4 | 1,717 | 2.3 | 6,818 | 9.2 | 73,920 |
| DC | 4,029 | 2.7 | 2,195 | 1.5 | 7,200 | 4.9 | 148,320 |
| FL | 27,763 | 4.5 | 14,013 | 2.3 | 48,639 | 7.9 | 614,630 |
| GA | 5,716 | 3.7 | 1,386 | 0.9 | 9,089 | 5.9 | 153,630 |
| HI | 4,207 | 5.3 | 1,271 | 1.6 | 7,389 | 9.3 | 79,830 |
| ID | 4,096 | 5.3 | 1,622 | 2.1 | 6,553 | 8.5 | 77,250 |
| IL | 4,067 | 5.9 | 1,246 | 1.8 | 6,239 | 9.1 | 68,580 |
| IN | 7,730 | 5.3 | 3,492 | 2.4 | 12,814 | 8.9 | 144,750 |
| IA | 6,129 | 6.7 | 2,471 | 2.7 | 9,944 | 10.9 | 91,350 |
| KS | 16,031 | 7.6 | 5,396 | 2.5 | 23,419 | 11.0 | 212,130 |
| KY | 8,550 | 5.2 | 2,352 | 1.4 | 11,689 | 7.1 | 163,620 |
| LA | 4,539 | 4.4 | 1,825 | 1.8 | 7,082 | 6.9 | 103,158 |
| ME | 6,494 | 8.2 | 1,780 | 2.2 | 9,263 | 11.7 | 79,410 |
| MD | 11,147 | 7.0 | 2,099 | 1.3 | 15,959 | 10.1 | 158,400 |
| MA | 12,160 | 4.4 | 4,234 | 1.5 | 21,023 | 7.7 | 274,290 |
| MI | 8,762 | 5.2 | 2,740 | 1.6 | 13,912 | 8.2 | 169,020 |
| MN | 10,551 | 6.4 | 1,920 | 1.2 | 14,989 | 9.0 | 165,900 |
| MS | 5,465 | 5.9 | 2,300 | 2.5 | 9,047 | 9.8 | 92,580 |
| MO | 5,332 | 12.5 | 1,499 | 3.5 | 8,013 | 18.7 | 42,763 |
| **Table 4A****Completions, Terminations and Refusals, Contacted Eligible Households****and Total Sample by State (Landline Sample)** |
|  | **COIN1** | **TERE1** | **CONELIG1** |  |
| **State** | **N** | **%** | **N** | **%** | **N** | **%** | **Total Landline Sample** |
| MT | 6,763 | 6.5 | 2,012 | 1.9 | 10,060 | 9.7 | 103,412 |
| NE | 12,973 | 8.5 | 3,966 | 2.6 | 19,249 | 12.6 | 153,300 |
| NV | 3,438 | 6.3 | 1,042 | 1.9 | 5,098 | 9.3 | 54,899 |
| NH | 4,954 | 7.7 | 1,810 | 2.8 | 7,670 | 11.9 | 64,530 |
| NJ | 9,933 | 5.3 | 2,914 | 1.5 | 16,296 | 8.6 | 188,490 |
| NM | 5,668 | 6.8 | 2,337 | 2.8 | 9,223 | 11.1 | 83,370 |
| NY | 5,517 | 3.8 | 3,230 | 2.2 | 10,837 | 7.5 | 143,730 |
| NC | 6,667 | 7.6 | 2,809 | 3.2 | 10,813 | 12.3 | 87,779 |
| ND | 5,640 | 6.1 | 1,575 | 1.7 | 8,217 | 8.9 | 92,430 |
| OH | 8,843 | 5.5 | 1,989 | 1.2 | 13,537 | 8.4 | 160,260 |
| OK | 5,830 | 8.1 | 2,087 | 2.9 | 9,392 | 13.0 | 72,338 |
| OR | 4,078 | 6.1 | 1,888 | 2.8 | 6,111 | 9.1 | 67,257 |
| PA | 8,583 | 5.6 | 3,968 | 2.6 | 14,462 | 9.4 | 154,507 |
| RI | 5,123 | 7.3 | 2,481 | 3.5 | 8,993 | 12.8 | 70,200 |
| SC | 7,768 | 8.2 | 2,120 | 2.2 | 11,775 | 12.4 | 95,070 |
| SD | 4,480 | 5.5 | 1,025 | 1.3 | 6,303 | 7.7 | 81,720 |
| TN | 4,193 | 4.4 | 1,600 | 1.7 | 6,175 | 6.4 | 95,910 |
| TX | 7,235 | 5.2 | 2,527 | 1.8 | 11,480 | 8.3 | 137,940 |
| UT | 8,239 | 6.9 | 2,443 | 2.0 | 12,742 | 10.7 | 119,520 |
| VT | 5,069 | 9.3 | 1,341 | 2.5 | 7,163 | 13.1 | 54,630 |
| VA | 6,022 | 5.2 | 1,321 | 1.1 | 9,234 | 7.9 | 116,190 |
| WA | 8,396 | 5.2 | 4,758 | 2.9 | 15,524 | 9.6 | 162,240 |
| WV | 4,319 | 15.5 | 1,003 | 3.6 | 5,918 | 21.2 | 27,900 |
| WI | 4,623 | 7.0 | 2,001 | 3.0 | 7,301 | 11.0 | 66,240 |
| WY | 5,272 | 4.4 | 2,148 | 1.8 | 8,320 | 7.0 | 118,710 |
| GU | 1,461 | 5.8 | 443 | 1.8 | 2,847 | 11.3 | 25,110 |
| PR | 3,545 | 6.8 | 431 | 0.8 | 5,002 | 9.6 | 51,841 |
| Minimum | 1,461 | 2.7 | 431 | 0.8 | 2,847 | 4.9 | 25,110 |
| Maximum | 27,763 | 15.5 | 14,013 | 3.6 | 48,639 | 21.2 | 614,630 |
| Mean | 6,773 | 6.2 | 2,434 | 2.1 | 10,831 | 9.7 | 120,490 |
| Median | 5,668 | 5.6 | 2,087 | 2.1 | 9,234 | 9.1 | 103,158 |
| 1These abbreviations refer to the formulae for calculations of calling outcomes and rates presented in Table 3. |

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| **Table 4B****Completions, Terminations and Refusals, Contacted Eligible Households** **and Total Sample by State (Cell Phone Sample)** |
|  | **COIN1** | **TERE1** | **CONELIG1** |  |
| **State** | **N** | **%** | **N** | **%** | **N** | **%** | **Total Cell Phone Sample** |
| AL | 1,372 | 4.1 | 778 | 2.3 | 2,285 | 6.9 | 33,299 |
| AK | 1,122 | 4.4 | 239 | 0.9 | 1,450 | 5.7 | 25,350 |
| AZ | 1,299 | 4.6 | 459 | 1.6 | 1,942 | 6.9 | 27,960 |
| AR | 1,195 | 6.8 | 376 | 2.2 | 1,851 | 10.6 | 17,460 |
| CA | 4,482 | 5.6 | 1,012 | 1.3 | 6,575 | 8.2 | 80,369 |
| CO | 3,786 | 10.8 | 465 | 1.3 | 4,681 | 13.4 | 34,996 |
| CT | 2,009 | 3.3 | 722 | 1.2 | 3,039 | 5.0 | 61,110 |
| DE | 1,365 | 5.3 | 241 | 0.9 | 1,929 | 7.5 | 25,740 |
| DC | 808 | 1.8 | 296 | 0.7 | 1,220 | 2.8 | 43,740 |
| FL | 6,212 | 5.1 | 3,113 | 2.5 | 9,559 | 7.8 | 122,578 |
| GA | 2,291 | 5.2 | 404 | 0.9 | 3,287 | 7.4 | 44,430 |
| HI | 4,080 | 9.3 | 1,150 | 2.6 | 5,796 | 13.2 | 44,009 |
| ID | 1,500 | 14.0 | 372 | 3.5 | 1,949 | 18.1 | 10,740 |
| IL | 1,379 | 6.4 | 282 | 1.3 | 1,753 | 8.2 | 21,458 |
| IN | 2,600 | 8.0 | 735 | 2.3 | 3,473 | 10.7 | 32,610 |
| IA | 2,012 | 9.2 | 333 | 1.5 | 2,578 | 11.8 | 21,899 |
| KS | 7,620 | 6.7 | 1,816 | 1.6 | 9,813 | 8.6 | 113,670 |
| KY | 2,567 | 4.7 | 413 | 0.8 | 3,052 | 5.6 | 54,450 |
| LA | 621 | 4.9 | 144 | 1.1 | 788 | 6.3 | 12,571 |
| ME | 1,670 | 7.5 | 373 | 1.7 | 2,118 | 9.6 | 22,138 |
| MD | 1,859 | 4.3 | 316 | 0.7 | 2,626 | 6.0 | 43,530 |
| MA | 3,022 | 4.3 | 549 | 0.8 | 4,493 | 6.4 | 70,500 |
| MI | 4,192 | 6.2 | 1,429 | 2.1 | 6,858 | 10.2 | 67,380 |
| MN | 5,150 | 8.4 | 504 | 0.8 | 6,376 | 10.4 | 61,050 |
| MS | 2,018 | 9.1 | 344 | 1.5 | 2,429 | 10.9 | 22,260 |
| MO | 1,598 | 8.6 | 261 | 1.4 | 2,084 | 11.2 | 18,633 |
| MT | 3,063 | 6.2 | 593 | 1.2 | 3,916 | 8.0 | 49,234 |
| NE | 4,396 | 10.5 | 1,007 | 2.4 | 6,127 | 14.6 | 42,060 |

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| **Table 4B****Completions, Terminations and Refusals, Contacted Eligible Households** **and Total Sample by State (Cell Phone Sample)** |
|  | **COIN1** | **TERE1** | **CONELIG1** |  |
| **State** | **N** | **%** | **N** | **%** | **N** | **%** | **Total Sample** |
| NV | 1,667 | 8.0 | 216 | 1.0 | 1,929 | 9.3 | 20,820 |
| NH | 1,637 | 4.6 | 424 | 1.2 | 2,242 | 6.3 | 35,580 |
| NJ | 3,685 | 4.5 | 836 | 1.0 | 5,746 | 7.0 | 82,350 |
| NM | 3,881 | 9.7 | 873 | 2.2 | 4,980 | 12.5 | 39,900 |
| NY | 2,549 | 4.9 | 1,214 | 2.3 | 4,099 | 7.9 | 51,748 |
| NC | 1,951 | 7.4 | 623 | 2.4 | 2,788 | 10.6 | 26,393 |
| ND | 2,453 | 5.0 | 609 | 1.2 | 3,204 | 6.6 | 48,809 |
| OH | 3,106 | 4.7 | 495 | 0.7 | 4,385 | 6.6 | 66,240 |
| OK | 2,420 | 6.6 | 806 | 2.2 | 3,751 | 10.3 | 36,567 |
| OR | 1,781 | 5.7 | 386 | 1.2 | 2,442 | 7.8 | 31,138 |
| PA | 2,768 | 5.1 | 923 | 1.7 | 3,908 | 7.3 | 53,760 |
| RI | 1,521 | 4.2 | 596 | 1.6 | 2,377 | 6.6 | 36,150 |
| SC | 3,012 | 7.7 | 648 | 1.7 | 3,952 | 10.2 | 38,880 |
| SD | 2,534 | 5.9 | 414 | 1.0 | 3,127 | 7.3 | 43,004 |
| TN | 1,503 | 4.4 | 244 | 0.7 | 1,756 | 5.2 | 33,978 |
| TX | 3,141 | 7.4 | 1,140 | 2.7 | 4,516 | 10.6 | 42,450 |
| UT | 4,760 | 11.5 | 1,384 | 3.3 | 6,521 | 15.7 | 41,520 |
| VT | 1,277 | 4.6 | 304 | 1.1 | 1,691 | 6.2 | 27,480 |
| VA | 2,338 | 5.4 | 313 | 0.7 | 3,257 | 7.6 | 42,930 |
| WA | 2,608 | 4.1 | 1,799 | 2.8 | 5,673 | 8.8 | 64,260 |
| WV | 1,667 | 8.8 | 382 | 2.0 | 2,185 | 11.6 | 18,869 |
| WI | 1,990 | 8.3 | 460 | 1.9 | 2,618 | 10.9 | 23,970 |
| WY | 1,220 | 4.3 | 226 | 0.8 | 1,535 | 5.5 | 28,140 |
| GU | 445 | 3.5 | 179 | 1.4 | 736 | 5.7 | 12,805 |
| PR | 2,490 | 17.5 | 314 | 2.2 | 3,261 | 22.9 | 14,226 |
| Minimum | 445 | 1.8 | 144 | 0.7 | 736 | 2.8 | 10,740 |
| Maximum | 7,620 | 17.5 | 3,113 | 3.5 | 9,813 | 22.9 | 122,578 |
| Mean | 2,522 | 6.6 | 652 | 1.6 | 3,523 | 9.0 | 41,268 |
| Median | 2,291 | 5.7 | 460 | 1.4 | 3,052 | 8.0 | 36,567 |
| 1These abbreviations refer to the formulae for calculations of calling outcomes and rates presented in Table 3. |

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| **Table 5A****Categories of Eligibility by State (Landline Sample)** |
|  | **ELIG1** | **INELIG1** | **UNKELIG1** |
| **State** | **N** | **%** | **N** | **%** | **N** | **%** |
| AL | 15,462 | 12.0 | 95,112 | 73.9 | 18,123 | 14.1 |
| AK | 6,349 | 5.6 | 97,641 | 85.8 | 9,860 | 8.7 |
| AZ | 5,290 | 9.8 | 40,291 | 74.3 | 8,659 | 16.0 |
| AR | 8,096 | 10.2 | 61,141 | 76.8 | 10,413 | 13.1 |
| CA | 13,965 | 6.2 | 170,941 | 75.7 | 40,791 | 18.1 |
| CO | 13,918 | 12.6 | 82,929 | 75.0 | 13,703 | 12.4 |
| CT | 11,499 | 10.4 | 77,679 | 70.5 | 21,072 | 19.1 |
| DE | 6,989 | 9.5 | 48,109 | 65.1 | 18,822 | 25.5 |
| DC | 8,989 | 6.1 | 113,672 | 76.6 | 25,659 | 17.3 |
| FL | 62,598 | 10.2 | 451,002 | 73.4 | 101,030 | 16.4 |
| GA | 9,330 | 6.1 | 114,981 | 74.8 | 29,319 | 19.1 |
| HI | 8,347 | 10.5 | 59,957 | 75.1 | 11,526 | 14.4 |
| ID | 7,217 | 9.3 | 61,807 | 80.0 | 8,226 | 10.6 |
| IL | 6,841 | 10.0 | 51,792 | 75.5 | 9,947 | 14.5 |
| IN | 15,194 | 10.5 | 109,748 | 75.8 | 19,808 | 13.7 |
| IA | 10,392 | 11.4 | 71,046 | 77.8 | 9,912 | 10.9 |
| KS | 24,773 | 11.7 | 162,626 | 76.7 | 24,731 | 11.7 |
| KY | 12,268 | 7.5 | 126,201 | 77.1 | 25,151 | 15.4 |
| LA | 9,676 | 9.4 | 78,949 | 76.5 | 14,533 | 14.1 |
| ME | 9,953 | 12.5 | 58,155 | 73.2 | 11,302 | 14.2 |
| MD | 16,596 | 10.5 | 106,473 | 67.2 | 35,331 | 22.3 |
| MA | 21,182 | 7.7 | 182,384 | 66.5 | 70,724 | 25.8 |
| MI | 15,578 | 9.2 | 129,304 | 76.5 | 24,138 | 14.3 |
| MN | 15,075 | 9.1 | 126,741 | 76.4 | 24,084 | 14.5 |
| MS | 11,563 | 12.5 | 71,226 | 76.9 | 9,791 | 10.6 |
| MO | 8,453 | 19.8 | 25,410 | 59.4 | 8,900 | 20.8 |
| MT | 10,730 | 10.4 | 82,051 | 79.3 | 10,631 | 10.3 |
| NE | 21,916 | 14.3 | 119,617 | 78.0 | 11,767 | 7.7 |
| NV | 6,019 | 11.0 | 38,662 | 70.4 | 10,218 | 18.6 |

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| **Table 5A****Categories of Eligibility by State (Landline Sample)** |
|  | **ELIG1** | **INELIG1** | **UNKELIG1** |
| NH | 9,511 | 14.7 | 44,193 | 68.5 | 10,826 | 16.8 |
| NJ | 16,484 | 8.7 | 128,951 | 68.4 | 43,055 | 22.8 |
| NM | 9,626 | 11.5 | 64,758 | 77.7 | 8,986 | 10.8 |
| NY | 13,705 | 9.5 | 102,462 | 71.3 | 27,563 | 19.2 |
| NC | 14,371 | 16.4 | 62,428 | 71.1 | 10,980 | 12.5 |
| ND | 8,711 | 9.4 | 76,690 | 83.0 | 7,029 | 7.6 |
| OH | 13,646 | 8.5 | 120,267 | 75.0 | 26,347 | 16.4 |
| OK | 9,667 | 13.4 | 53,739 | 74.3 | 8,932 | 12.3 |
| OR | 8,498 | 12.6 | 45,280 | 67.3 | 13,479 | 20.0 |
| PA | 17,537 | 11.4 | 108,368 | 70.1 | 28,602 | 18.5 |
| RI | 10,939 | 15.6 | 42,624 | 60.7 | 16,637 | 23.7 |
| SC | 13,017 | 13.7 | 69,690 | 73.3 | 12,363 | 13.0 |
| SD | 7,104 | 8.7 | 68,950 | 84.4 | 5,666 | 6.9 |
| TN | 6,832 | 7.1 | 71,470 | 74.5 | 17,608 | 18.4 |
| TX | 17,310 | 12.5 | 102,478 | 74.3 | 18,152 | 13.2 |
| UT | 13,633 | 11.4 | 92,771 | 77.6 | 13,116 | 11.0 |
| VT | 8,142 | 14.9 | 38,490 | 70.5 | 7,998 | 14.6 |
| VA | 9,313 | 8.0 | 80,800 | 69.5 | 26,077 | 22.4 |
| WA | 20,170 | 12.4 | 119,675 | 73.8 | 22,395 | 13.8 |
| WV | 6,279 | 22.5 | 16,956 | 60.8 | 4,665 | 16.7 |
| WI | 7,904 | 11.9 | 49,618 | 74.9 | 8,718 | 13.2 |
| WY | 10,264 | 8.6 | 92,142 | 77.6 | 16,304 | 13.7 |
| GU | 2,922 | 11.6 | 20,397 | 81.2 | 1,791 | 7.1 |
| PR | 5,044 | 9.7 | 41,925 | 80.9 | 4,872 | 9.4 |
| Minimum | 2,922 | 5.6 | 16,956 | 59.4 | 1,791 | 6.9 |
| Maximum | 62,598 | 22.5 | 451,002 | 85.8 | 101,030 | 25.8 |
| Mean | 12,356 | 11.0 | 89,260 | 74.0 | 18,874 | 15.1 |
| Median | 10,264 | 10.5 | 77,679 | 74.9 | 13,479 | 14.3 |
| 1These abbreviations refer to the formulae for calculations of calling outcomes and rates presented in Table 3. |

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| **Table 5B****Categories of Eligibility by State (Cell Phone Sample)** |
|  | **ELIG1** | **INELIG1** | **UNKELIG1** |
| **State** | **N** | **%** | **N** | **%** | **N** | **%** |
| AL | 2,285 | 6.9 | 15,917 | 47.8 | 15,097 | 45.3 |
| AK | 1,450 | 5.7 | 19,060 | 75.2 | 4,840 | 19.1 |
| AZ | 1,942 | 6.9 | 11,486 | 41.1 | 14,532 | 52.0 |
| AR | 1,851 | 10.6 | 9,135 | 52.3 | 6,474 | 37.1 |
| CA | 6,575 | 8.2 | 39,746 | 49.5 | 34,048 | 42.4 |
| CO | 4,681 | 13.4 | 14,983 | 42.8 | 15,332 | 43.8 |
| CT | 3,039 | 5.0 | 19,244 | 31.5 | 38,827 | 63.5 |
| DE | 1,929 | 7.5 | 10,286 | 40.0 | 13,525 | 52.5 |
| DC | 1,220 | 2.8 | 20,653 | 47.2 | 21,867 | 50.0 |
| FL | 9,559 | 7.8 | 38,792 | 31.6 | 74,227 | 60.6 |
| GA | 3,287 | 7.4 | 19,444 | 43.8 | 21,699 | 48.8 |
| HI | 5,796 | 13.2 | 15,946 | 36.2 | 22,267 | 50.6 |
| ID | 1,949 | 18.1 | 4,649 | 43.3 | 4,142 | 38.6 |
| IL | 1,753 | 8.2 | 8,948 | 41.7 | 10,757 | 50.1 |
| IN | 3,473 | 10.7 | 14,676 | 45.0 | 14,461 | 44.3 |
| IA | 2,578 | 11.8 | 11,360 | 51.9 | 7,961 | 36.4 |
| KS | 9,813 | 8.6 | 59,902 | 52.7 | 43,955 | 38.7 |
| KY | 3,052 | 5.6 | 26,635 | 48.9 | 24,763 | 45.5 |
| LA | 788 | 6.3 | 6,343 | 50.5 | 5,440 | 43.3 |
| ME | 2,118 | 9.6 | 10,277 | 46.4 | 9,743 | 44.0 |
| MD | 2,626 | 6.0 | 17,623 | 40.5 | 23,281 | 53.5 |
| MA | 4,493 | 6.4 | 26,388 | 37.4 | 39,619 | 56.2 |
| MI | 6,858 | 10.2 | 30,149 | 44.7 | 30,373 | 45.1 |
| MN | 6,376 | 10.4 | 23,247 | 38.1 | 31,427 | 51.5 |
| MS | 2,429 | 10.9 | 11,113 | 49.9 | 8,718 | 39.2 |
| MO | 2,084 | 11.2 | 7,233 | 38.8 | 9,316 | 50.0 |
| MT | 3,916 | 8.0 | 32,941 | 66.9 | 12,377 | 25.1 |
| NE | 6,127 | 14.6 | 22,692 | 54.0 | 13,241 | 31.5 |
| NV | 1,929 | 9.3 | 6,812 | 32.7 | 12,079 | 58.0 |
| **Table 5B****Categories of Eligibility by State (Cell Phone Sample)** |
|  | **ELIG1** | **INELIG1** | **UNKELIG1** |
| NH | 2,242 | 6.3 | 14,194 | 39.9 | 19,144 | 53.8 |
| NJ | 5,746 | 7.0 | 32,478 | 39.4 | 44,126 | 53.6 |
| NM | 4,980 | 12.5 | 21,620 | 54.2 | 13,300 | 33.3 |
| NY | 4,099 | 7.9 | 21,368 | 41.3 | 26,281 | 50.8 |
| NC | 2,788 | 10.6 | 10,980 | 41.6 | 12,625 | 47.8 |
| ND | 3,204 | 6.6 | 33,755 | 69.2 | 11,850 | 24.3 |
| OH | 4,385 | 6.6 | 27,112 | 40.9 | 34,743 | 52.5 |
| OK | 3,751 | 10.3 | 21,523 | 58.9 | 11,293 | 30.9 |
| OR | 2,442 | 7.8 | 6,679 | 21.4 | 22,017 | 70.7 |
| PA | 3,908 | 7.3 | 22,975 | 42.7 | 26,877 | 50.0 |
| RI | 2,377 | 6.6 | 12,536 | 34.7 | 21,237 | 58.7 |
| SC | 3,952 | 10.2 | 14,170 | 36.4 | 20,758 | 53.4 |
| SD | 3,127 | 7.3 | 24,786 | 57.6 | 15,091 | 35.1 |
| TN | 1,756 | 5.2 | 11,699 | 34.4 | 20,523 | 60.4 |
| TX | 4,516 | 10.6 | 20,400 | 48.1 | 17,534 | 41.3 |
| UT | 6,521 | 15.7 | 14,250 | 34.3 | 20,749 | 50.0 |
| VT | 1,691 | 6.2 | 12,067 | 43.9 | 13,722 | 49.9 |
| VA | 3,257 | 7.6 | 16,484 | 38.4 | 23,189 | 54.0 |
| WA | 5,673 | 8.8 | 21,087 | 32.8 | 37,500 | 58.4 |
| WV | 2,185 | 11.6 | 5,304 | 28.1 | 11,380 | 60.3 |
| WI | 2,618 | 10.9 | 12,589 | 52.5 | 8,763 | 36.6 |
| WY | 1,535 | 5.5 | 18,815 | 66.9 | 7,790 | 27.7 |
| GU | 736 | 5.7 | 9,327 | 72.8 | 2,742 | 21.4 |
| PR | 3,261 | 22.9 | 5,708 | 40.1 | 5,257 | 37.0 |
| Minimum | 736 | 2.8 | 4,649 | 21.4 | 2,742 | 19.1 |
| Maximum | 9,813 | 22.9 | 59,902 | 75.2 | 74,227 | 70.7 |
| Mean | 3,523 | 9.0 | 18,256 | 45.2 | 19,488 | 45.8 |
| Median | 3,052 | 8.0 | 15,946 | 42.8 | 15,097 | 48.8 |
| 1These abbreviations refer to the formulae for calculations of calling outcomes and rates presented in Table 3. |

| **Table 6****Response Rates for Landline and Cell Phone Samples** |
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| **State** | **Landline Response Rate** | **Cell Phone Response Rate** | **Combined Response Rate** |
| AL | 28.0 | 32.8 | 29.0 |
| AK | 49.7 | 62.6 | 52.0 |
| AZ | 43.4 | 32.1 | 39.5 |
| AR | 43.3 | 40.6 | 42.8 |
| CA | 38.9 | 39.3 | 39.0 |
| CO | 62.0 | 45.4 | 58.0 |
| CT | 41.3 | 24.1 | 35.2 |
| DE | 42.4 | 33.6 | 40.1 |
| DC | 37.1 | 33.1 | 36.2 |
| FL | 37.1 | 25.6 | 35.2 |
| GA | 49.6 | 35.7 | 46.5 |
| HI | 43.1 | 34.8 | 40.2 |
| ID | 50.7 | 47.3 | 50.3 |
| IL | 50.8 | 39.2 | 48.1 |
| IN | 43.9 | 41.7 | 43.5 |
| IA | 52.6 | 49.7 | 52.0 |
| KS | 57.2 | 47.6 | 53.8 |
| KY | 59.0 | 45.9 | 55.7 |
| LA | 40.3 | 44.7 | 40.8 |
| ME | 56.0 | 44.1 | 53.4 |
| MD | 52.2 | 32.9 | 48.0 |
| MA | 42.6 | 29.5 | 39.9 |
| MI | 48.2 | 33.6 | 44.0 |
| MN | 59.8 | 39.2 | 54.3 |
| MS | 42.3 | 50.5 | 43.9 |
| MO | 50.0 | 38.3 | 46.4 |
| MT | 56.5 | 58.6 | 57.2 |
| NE | 54.7 | 49.2 | 53.5 |
| NV | 46.5 | 36.3 | 43.7 |
| NH | 43.3 | 33.7 | 39.9 |
| NJ | 46.5 | 29.8 | 41.4 |
| NM | 52.5 | 52.0 | 52.3 |
| NY | 32.5 | 30.6 | 32.0 |
| NC | 40.6 | 36.5 | 39.6 |
| ND | 59.8 | 58.0 | 59.2 |
| OH | 54.1 | 33.7 | 48.2 |
| OK | 52.9 | 44.6 | 50.1 |
| OR | 38.4 | 21.4 | 33.0 |
| PA | 39.9 | 35.4 | 38.7 |
| RI | 35.7 | 26.4 | 32.6 |
| SC | 51.9 | 35.5 | 47.2 |
| SD | 58.7 | 52.6 | 56.6 |
| TN | 50.1 | 33.9 | 45.9 |
| TX | 36.3 | 40.8 | 37.4 |
| UT | 53.8 | 36.5 | 49.3 |
| VT | 53.1 | 37.8 | 48.0 |
| VA | 50.1 | 33.0 | 45.5 |
| WA | 35.9 | 19.1 | 31.1 |
| WV | 57.3 | 30.3 | 46.4 |
| WI | 50.8 | 48.2 | 50.1 |
| WY | 44.3 | 57.5 | 46.8 |
| GU | 46.4 | 47.5 | 46.8 |
| PR | 63.7 | 48.1 | 60.3 |
| Minimum | 28.0 | 19.1 | 29.0 |
| Maximum | 63.7 | 62.6 | 60.3 |
| Mean | 47.7 | 39.5 | 45.3 |
| Median | 49.6 | 37.8 | 46.4 |

# References

1. Methodologic changes in the Behavioral Risk Factor Surveillance System in 2011 and potential effects on prevalence estimates. *MMWR Weekly* June 8, 2012 / 61(22); 410-3. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6122a3.htm.

2. The American Association for Public Opinion Research. 2011. *Standard Definitions: Final dispositions of case codes and outcome rates for surveys*. 7th edition.
http://www.aapor.org/AM/Template.cfm?Section=Standard\_Definitions2&Template=/CM/ContentDisplay.cfm&ContentID=3156

3. The Council of American Survey Research Organizations. 2013. Code of standards and ethics for market, opinion, and social research http://c.ymcdn.com/sites/ www.casro.org/resource/resmgr/code/september\_2013\_revised\_code.pdf?hhSearchTerms=%22casro+and+response+and+rate%22.

4. The Pew Research Center for People and the Press. 2012. Assessing the representativeness of public opinion surveys. http://www.people-press.org/files/legacy-pdf/Assessing%20the%20Representativeness%20of%20Public%20Opinion%20Surveys.pdf.

5. Groves, RM. Nonresponse rates and nonresponse bias in household surveys. *Public Opinion Quarterly* 70(5): Special Issue 2006, 646–75.