

Behavioral Risk Factor Surveillance System

2011 Summary Data Quality Report

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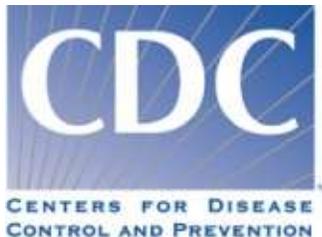


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Introduction

The Behavioral Risk Factor Surveillance System (BRFSS) survey is conducted annually by the Division of Behavioral Surveillance (DBS) at the Centers for Disease Control and Prevention (CDC). After the 2011 BRFSS survey was conducted, this summary data quality report was created, in order to present detailed descriptions of the 2011 BRFSS survey call outcomes in one document. This document, therefore, presents call summary information for each of the states and territories that participated in the 2011 BRFSS. All BRFSS data (with the exception of pilot study data) are collected by phone, and for the first time, cell phone and landline phone samples were used to produce a single data set using data collected from the 2011 BRFSS. The variables and outcomes provided herein are applicable to a combined data set of responses from landline- and cell phone-respondents within each of the states.

The inclusion of data from cell phone interviews in the public release data is a major step forward for the BRFSS, and, in many respects, 2011 has been a year of change in terms of the approach and methodology used to conduct this survey. The BRFSS has also adopted new weighting procedures in order to accommodate the inclusion of new variables, including the type of phones owned by respondents. Data users should note that new weighting procedures are likely to affect trend lines when comparing BRFSS pre- and post- 2011; because of these changes, users are advised not to make direct comparisons with pre-2011 data, and instead, begin new trend lines with this year. Details are provided in a recent issue of the *Morbidity and Mortality Weekly Report (MMWR)*, which highlights weighting effects on trend lines.¹

The measures presented in this document are designed to summarize the quality of the 2011 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 This document includes several other internal changes over previous versions of the Summary Data Quality Report. BRFSS has calculated 2011 response rates using AAPOR Response Rate #4, which is in keeping with rates provided by BRFSS in the past using Council of American Survey Research Organizations (CASRO) rates.²

Based on the guidelines of AAPOR, response rate calculations include assumptions of eligibility among potential respondents/households that are not interviewed. Changes in the distribution of cell phone numbers by telephone companies and the portability of landline telephone numbers are likely to make it extremely more difficult than in the past to ascertain which telephone numbers are out-of-sample and which telephone phone numbers represent “likely households.” Therefore, the BRFSS uses proportions of unknown households in each of the states to estimate the total number of households from those whose eligibility is undetermined. This “eligibility factor” appears in calculations of response, cooperation, resolution, and refusal rates.

The BRFSS continuously improves and tests its methodology. Currently, DBS is conducting several pilot studies. Multiple-state pilots are assessing mail- and web-based follow-up surveys sent to households that did not respond to landline-based requests to participate in the BRFSS data collection. Similarly, a pilot is being conducted to test the feasibility of text messaging as a means of following up with potential cell phone respondents. Meanwhile, internet sampled Web-based pilots are gauging health status, healthcare use, and health behaviors at Metropolitan/Micropolitan statistical area, state, and national levels, then

comparing findings to those of BRFSS, the National Health Interview Survey (NHIS), and the National Health and Nutrition Examination Survey (NHANES).

Interpretation of BRFSS Response Rates

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

Table 1
Examples of Cell Phone and Landline Survey Response Rates

Survey	Year(s)	Landline response rate	Cell phone response rate
California Health Interview Survey (CHIS) ¹	2007–2008	35.5%	22.1%
The Commonwealth Fund 2010 Biennial Health Insurance Survey ²	2010	29.0%	25.0%
National Immunization Survey Cell Phone Pilot (NIS) ³	2007–2008	N/A	21.4%
National Immunization Survey (NIS) ⁴	2011	61.7% ^a	25.2%
Pew Research Center for People and the Press ⁵	2006	30.0%	20.0%
Pew Internet and American Life Project ⁶	2012	11.1%	10.0%
BRFSS	2011	53.0%	27.9%

^a Unlike 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>

² <http://www.commonwealthfund.org/Surveys/2011/Mar/2010-Biennial-Health-Insurance-Survey.aspx?view=print&page=all>.

³ <http://www.amstat.org/sections/srms/proceedings/y2008/Files/barronmartin.pdf>

⁴ <http://www.cdc.gov/vaccines/stats-surv/nis/dual-frame-sampling-08282012.htm>

⁵ <http://www.pewinternet.org/reports/2012/Politics-on-SNS/methodology>

⁶ <http://www.people-press.org/2006/05/15/the-cell-phone-challenge-to-survey-research/>.

Note: The National Health and Nutrition Examination Survey (NHANES) and the National Health Interview Survey (NHIS) response rates are not included here. Response rates for personal interview surveys are not comparable to telephone survey response rates.

In the tables below, landline and cell phone calling outcomes and rates are presented. The BRFSS cell phone survey was collected in a manner similar to the BRFSS landline survey. One important difference is that landline interviews include random selection among adults within households, while cell phone interviews are conducted with adults who are contacted on personal (nonbusiness) cell phones. The report presents data on three general types of measures by state:

- (1) Call outcome measures, including response rates, which are based on landline disposition codes.
- (2) Call outcome measures, including response rates, which are based on cell phone disposition codes.

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(3) A weighted response rate based on a combination of the landline response rate with the cell phone 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:

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 and Washington, DC, in 2011 was 49.72, and ranged from 33.77 to 64.14.^a Response rates for states and territories included in this analysis had a median of XXX and ranged from XXX to XXX,^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 2011 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. Disposition codes reflect whether interviewers have completed or partially completed and interview (100 level codes) determined that the household was eligible without completing and interview (200 level codes), determined that a household or respondent was ineligible (400 level codes) or was unable to determine the eligibility of a household and/or respondent (300 level codes). The table below illustrates the codes used by the BRFSS in 2011.

Table 2 1022 Landline and Cell Phone BRFSS Disposition Codes	
Landline Disposition Codes	
Interviewed	
110	Complete
120	Partial Complete
Eligible, Non-Interview	
210	Termination within questionnaire
220	Refusal after respondent selection
230	Selected respondent never reached or was reached but did not begin interview
240	Selected respondent away from residence during the entire interviewing period
250	Language problem after respondent selection
260	Selected respondent physically or mentally unable to complete an interview
270	Hang up or termination after number of adults recorded but before respondent selection
280	Household contact after number of adults recorded but before respondent selection

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Unknown Eligibility	
305	Household members away from residence during entire interviewing period
310	Hang-up or termination, housing unit, unknown if eligible respondent
315	Household contact, eligibility undetermined
320	Language problem before respondent selection
325	Physical or mental impairment before respondent selection
330	Hang-up or termination, unknown if private residence
332	Contact, unknown if private residence
335	Telephone answering device, message confirms private residential status
340	Telecommunication technological barrier, message confirms private residential status
345	Telephone answering device, not sure if private residence
350	Telecommunication technological barrier, not sure if private residence
355	Telephone number is no longer in service or has been changed
360	No answer
365	Busy
370	On never call list
Not Eligible	
405	Out-of-state/out of sample
410	Household, no eligible respondent
420	Not a private residence
430	Dedicated fax/data/modem line with no human contact
435	Ineligible cellular telephone
440	Fast busy
450	Non-working/disconnected number
Cell Phone Disposition Codes	
Interviewed	
110	Completed interview
120	Partially completed interview
Eligible/ Non-Interview	
210	Term. in Quest.
220	Refusal – Resp. Sel.
230	Not Interviewed – Resp. Sel.
250	Language Barrier – Resp. Sel.
260	Unable to Communicate – Resp. Sel.
Unknown Eligibility	
310	Hang Up or Term. - Unknown if Elig. Resp.
317	Cell Contact – Unknown if Elig. Resp.
319	Contact – Unknown if Elig. Resp.
320	Language Barrier – Bef. Resp. Sel.
325	Unable to Communicate – Bef. Resp. Sel.
330	Hang Up or Term. - Unknown if working cell phone
332	Contact – Unknown if working cell phone
335	Tel. Ans. Device – Is working cell phone

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340	Tech. Barrier – Is working cell phone
345	Tel. Ans. Device – Not sure if working cell phone
350	Tech. Barrier – Not sure if working cell phone
355	Phone no longer in service or changed
360	No Answer
365	Busy
370	On Never Call List
Not Eligible	
405	Not in the US
415	Cell Phone – Not an Adult
421	Cell Phone – Does not live in a private residence
422	Cell Phone – Business only
425	Landline Phone
430	Dedicated Fax/data/modem
437	Cell Phone with Landline in HH
440	Fast Busy
450	Non-working/Disconnected
455	Wrong number (person indicates number dialed is incorrect)

The factors affecting the distribution of disposition codes by state may be categorized by telephone systems, sample designs, surveyed populations, and data collection processes. Differences in these factors affect different outcome measures in various ways. Table 3 defines the categories of landline call outcomes shown in Tables 5a and 6a. Table 4 defines the categories of cell phone call outcomes shown in Tables 5b and 6b. “P” in the table below is the proportion of records with a final disposition code of 210 (break off or termination) for which more than half of the core questionnaire prior to the demographics section was completed. These interviews are included in the response rate numerator but are not used in calculating health related prevalence estimates created from BRFSS data.

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Table 3 Landline Categories of Call Outcomes		
Category	Disposition Code Definition	Format In Tables/Formulae
Completed Interview	110+120+(210* P)	COIN
Terminations and Refusals	(210*(1- P))+220	TERE
Known Household, Possibly Eligible, Non-interview	230+240+250+260+270+280+305+310+315+335	KNHH
Likely Households	320+325+330+332+340+355+370	LIHH
Ineligible Households	410	INHH
All Known or Probable Households	COIN+TERE+KNHH+LIHH+INHH	HH
Unknown Eligibility	305+310+315+320+325+330+332+335+340+345+350+355+360+365+370	Unknown
Known Households	110+120+210+220+230+240+250+260+270+280	Eligible
Ineligible	405+410+420+430+435+440+450	Ineligible
Estimated proportion of eligible unknowns	Eligible/(Eligible + Ineligible)	e
Total Landline Records	All numbers in sample	TOTAL_LL

Table 4 Cell Phone Categories of Call Outcomes		
Category	Disposition Code Definition	Format In Tables/Formulae
Completed Interview	110+120+(210* P)	COIN
Terminations and Refusals	(210*(1- P))+220	TERE
Unknown Eligibility	310+315+317+319+320+325+330+332+335+340+345+350+355+360+365+370	Unknown
Known Personal Cell Phones	110+120+210+220+230+250+260	Eligible
Ineligible	405+415+421+422+425+430+437+440+450+455	Ineligible
Total Cell Phone Records	All numbers in sample	TOTAL_CP

Tables 5a and 6a show the frequency distribution of landline sample categories and resulting landline call outcomes by state. Tables 5b and 6b show the frequency distribution of cell phone sample categories and resulting cell phone call outcomes by state

Tables 7a and 7b provide outcome rates for each state that are used to measure respondent cooperation, data quality, and data collection efficiency. A cooperation rate is the proportion of all cases interviewed of all eligible units in which a respondent was selected and actually contacted. The AAPOR Cooperation Rate #4 (AAPOR COOP4)² is the number of complete and partial complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews that involve the identification of and contact with an

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eligible respondent (refusal and break-offs). This rate calculation is comparable with the Interview Completion Rate reported for the BRFSS landline survey in the 2010 Summary Data Quality Report. Respondents unable to cooperate for an interview because of language barrier or physical/mental impairment are excluded from the base. The formula for the Cooperation Rate #4 is

$$(\text{COIN} / (\text{COIN} + \text{TERE})) * 100.$$

The AAPOR Cooperation Rate #2 (AAPOR COOP2)² is the number of complete and partial complete interviews divided by the number of interviews (complete plus partial) plus the number of non-interviews that involve the identification of and contact with an eligible respondent (refusal and break-offs plus other). It differs from the #4 rate in that the denominator includes additional categories of eligible respondents (those who were unable to complete the interview due to language barriers and/or physical or mental health barriers). This rate calculation is comparable with the Cooperation Rate reported for the BRFSS landline survey in the 2010 Summary Data Quality Report. The formula for the BRFSS Cooperation Rate is

$$(\text{COIN} / (\text{COIN} + \text{TERE} + 250 + 260)) * 100.$$

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 response rate is an indicator of the potential for bias in the results of a survey. The amount of bias can be conceptualized as a function of two factors—the amount of non-response, which is measured by a response rate, and the differences between the respondents and the non-respondents. A response rate does not address the latter factor. If the non-respondents characteristics are highly similar to the respondents' characteristics being reviewed, then even a low response rate will result in little non-response bias.³

A proportion of the terminations (210) is included as partial interviews in the BRFSS Response Rate (AAPOR RR4)² calculation because more than fifty percent of the core questionnaire prior to demographics was completed for these telephone numbers. 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. This estimated level of eligibility provides a conservative response rate because the proportion of these unknown eligible telephone numbers that are eligible is probably quite low, given the fifteen or more call attempts required by BRFSS landline survey protocol and six or more call attempts required by BRFSS cell phone survey protocol. The formula for the BRFSS Response Rate (AAPOR RR4) is:

$$(\text{COIN} / (\text{ELIGIBLE} + e * \text{UNKNOWN})) * 100.$$

Table 5a presents the BRFSS Landline Overall Response Rate. The Overall Response Rate is a more conservative response rate than (AAPOR RR4)² for the landline survey. This rate assumes more unknown records are eligible households and thus includes a higher proportion of all numbers in the denominator. The rate assumes that all likely households are households and that 98 percent of known or probable households contain an adult who uses the telephone number. The Overall Response Rate formula is:

$$(\text{COIN} / (0.98 * \text{HH})) * 100.$$

The BRFSS Refusal Rate (AAPOR REF2)² 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.

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Refusals and terminations (TERE) are in the numerator, and the denominator is the same as that of the Response Rate. This formula is:

$$(\text{TERE} / (\text{ELIGIBLE} + e * \text{UNKNOWN})) * 100.$$

Table 6 contains the combined landline and cell phone response rate, which is presented as a summation of the respective weighted response rates. The response rate (AAPOR RR4) generated for each survey mode is weighted to the respective sample size. The total sample equals the landline sample plus cell phone sample. The proportion of each sample is calculated using the total sample as the denominator. The formulas for the proportions of the sample are:

$$P_1 = (\text{TOTAL_LL} / (\text{TOTAL_LL} + \text{TOTAL_CP}))$$

$$P_2 = (\text{TOTAL_CP} / (\text{TOTAL_LL} + \text{TOTAL_CP})).$$

The formula for the Combined Landline and Cell Phone Weighted Response Rate is then:

$$((P_1 * (\text{LANDLINE RESPONSE RATE})) + (P_2 * (\text{CELL PHONE RESPONSE RATE}))).$$

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Tables of Outcomes and Rates by State

Table 5a

BRFSS Landline Distributions of Call Outcomes by State, 2011

State	COIN ¹		TERE ²		KNHH ³		LIHH ⁴		INHH ⁵		HH ⁶ Total
	N	%	N	%	N	%	N	%	N	%	
AL	6,693	9.33	2,633	3.67	9,015	12.57	4,203	5.86	26	0.04	22,570
AK	3,302	9.21	728	2.03	1,232	3.44	1,306	3.64	9	0.03	6,577
AZ	6,219	5.74	3,638	3.36	6,471	5.98	8,205	7.58	14	0.01	24,547
AR	4,491	7.42	1,771	2.93	1,764	2.92	5,233	8.65	9	0.01	13,268
CA	17,201	6.10	14,311	5.08	28,956	10.27	11,887	4.22	20	0.01	72,375
CO	12,525	11.73	1,916	1.79	4,639	4.34	5,128	4.80	15	0.01	24,223
CT	6,373	7.57	2,844	3.38	6,411	7.62	8,055	9.57	20	0.02	23,703
DE	4,159	9.52	1,253	2.87	8,087	18.51	2,835	6.49	18	0.04	16,352
DC	4,346	3.91	1,917	1.73	6,375	5.74	6,377	5.74	31	0.03	19,046
FL	11,159	6.06	5,099	2.77	7,243	3.93	21,702	11.78	23	0.01	45,226
GA	9,114	6.36	1,477	1.03	19,637	13.69	7,784	5.43	123	0.09	38,135
HI	6,547	6.79	1,585	1.64	6,331	6.57	6,124	6.35	8	0.01	20,595
ID	5,663	8.11	2,022	2.90	2,126	3.05	6,088	8.72	10	0.01	15,909
IL	4,947	7.93	1,461	2.34	4,422	7.09	3,793	6.08	2	0.00	14,625
IN	7,720	6.70	3,758	3.26	4,277	3.71	11,380	9.87	9	0.01	27,144
IA	6,117	9.71	1,502	2.38	2,208	3.50	2,554	4.05	6	0.01	12,387
KS	17,444	9.66	6,123	3.39	10,706	5.93	11,751	6.51	40	0.02	46,064
KY	9,925	6.80	1,830	1.25	3,794	2.60	13,201	9.04	416	0.28	29,166
LA	10,228	6.27	3,733	2.29	15,564	9.54	14,403	8.83	246	0.15	44,174
ME	12,444	10.88	3,518	3.08	4,418	3.86	11,210	9.80	17	0.01	31,607
MD	9,522	9.49	1,693	1.69	15,986	15.94	5,419	5.40	110	0.11	32,730
MA	20,718	6.46	5,468	1.71	62,254	19.42	22,718	7.09	276	0.09	111,434
MI	9,459	6.94	2,542	1.87	12,795	9.39	4,457	3.27	45	0.03	29,298
MN	10,380	9.51	1,283	1.18	11,504	10.54	4,400	4.03	122	0.11	27,689
MS	7,440	9.24	2,440	3.03	6,391	7.94	6,150	7.64	46	0.06	22,467
MO	5,464	10.56	1,371	2.65	2,545	4.92	2,723	5.26	4	0.01	12,107
MT	8,805	11.52	1,938	2.54	6,703	8.77	1,131	1.48	15	0.02	18,592
NE	20,837	12.14	4,422	2.58	12,312	7.17	2,794	1.63	39	0.02	40,404
NV	4,735	7.81	1,521	2.51	8,804	14.52	3,352	5.53	86	0.14	18,498
NH	5,782	9.34	2,416	3.90	6,854	11.07	4,138	6.68	14	0.02	19,204
NJ	14,293	7.88	2,937	1.62	29,600	16.32	9,323	5.14	215	0.12	56,368
NM	8,046	10.87	1,991	2.69	3,052	4.12	3,534	4.77	12	0.02	16,635
NY	6,459	4.66	3,639	2.63	5,814	4.20	19,392	13.99	17	0.01	35,321
NC	10,761	10.97	3,412	3.48	9,883	10.07	5,168	5.27	31	0.03	29,255
ND	4,654	8.71	1,510	2.82	1,610	3.01	3,891	7.28	7	0.01	11,672
OH	8,901	7.48	2,580	2.17	15,585	13.10	6,486	5.45	106	0.09	33,658
OK	7,756	13.14	1,763	2.99	3,505	5.94	2,458	4.16	11	0.02	15,493
OR	5,118	8.35	1,805	2.95	3,584	5.85	6,678	10.90	6	0.01	17,191
PA	9,902	7.71	4,284	3.34	5,882	4.58	16,184	12.61	12	0.01	36,264
RI	6,246	10.38	2,761	4.59	6,742	11.20	4,455	7.40	14	0.02	20,218
SC	10,884	10.95	2,269	2.28	6,641	6.68	4,483	4.51	14	0.01	24,291
SD	7,364	7.96	1,364	1.47	3,177	3.43	3,365	3.64	13	0.01	15,283
TN	5,776	6.21	1,992	2.14	2,486	2.67	13,917	14.96	25	0.03	24,196
TX	13,673	6.75	4,711	2.32	8,025	3.96	20,777	10.25	13	0.01	47,199

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Table 5a
BRFSS Landline Distributions of Call Outcomes by State, 2011

State	COIN ¹		TERE ²		KNHH ³		LIHH ⁴		INHH ⁵		HH ⁶ Total
	N	%	N	%	N	%	N	%	N	%	
UT	10,402	12.76	1,980	2.43	4,766	5.84	2,319	2.84	5	0.01	19,472
VT	6,765	11.92	2,025	3.57	3,479	6.13	3,940	6.94	12	0.02	16,221
VA	5,654	6.89	1,264	1.54	13,663	16.65	4,709	5.74	46	0.06	25,336
WA	14,195	7.23	5,963	3.04	14,946	7.62	13,401	6.83	18	0.01	48,523
WV	4,470	18.53	823	3.41	1,267	5.25	1,826	7.57	13	0.05	8,399
WI	4,716	9.43	1,691	3.38	1,772	3.54	2,742	5.48	15	0.03	10,936
WY	5,598	8.18	1,662	2.43	2,438	3.56	5,571	8.14	6	0.01	15,275
GU	1,694	4.71	386	1.07	1,405	3.90	518	1.44	6	0.02	4,009
PR	4,518	9.73	327	0.70	1,606	3.46	577	1.24	6	0.01	7,034
VI	2,682	5.95	995	2.21	960	2.13	2,398	5.32	17	0.04	7,052
Total	450,285		142,348		451,712		378,613		2,459		1,425,417
Med	7,440	8.18	1,992	2.63	6,391	5.98	5,233	6.35	15	0.02	23,703
Min	3,302	3.91	728	1.03	1,232	2.60	1,131	1.48	2	0.00	6,577
Max	20,837	18.53	14,311	5.08	62,254	19.42	22,718	14.96	416	0.28	111,434

* The Median, Minimum, and Maximum values do not include Guam (GU), Puerto Rico (PR), or the U.S. Virgin Islands (VI).

¹ COIN = Complete Interviews

² TERE = Terminations and Refusals

³ KNHH = Known Household, Possibly Eligible, Non-interview

⁴ LIHH = Likely Households

⁵ INHH = Ineligible Households

⁶ HH = All Known or Probable Households

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Table 5b
BRFSS Cell Phone Distributions of Call Outcomes by State, 2011

State	COIN ¹		TERE ²		TOTAL_CP
	N	%	N	%	N
AL	1,132	4.18	413	1.52	27,090
AK	330	3.34	67	0.68	9,895
AZ	606	3.27	222	1.20	18,510
AR	440	4.87	195	2.16	9,030
CA	1,691	4.43	1,543	4.04	38,149
CO	1,227	9.65	150	1.18	12,720
CT	946	1.93	327	0.66	49,140
DE	735	5.20	14	0.10	14,130
DC	878	3.01	192	0.66	29,220
FL	1,681	5.91	403	1.42	28,440
GA	875	3.83	279	1.22	22,860
HI	1,468	6.70	674	3.08	21,899
ID	543	10.90	262	5.26	4,980
IL	612	4.95	108	0.87	12,360
IN	1,160	4.80	873	3.61	24,150
IA	1,235	9.17	226	1.68	13,470
KS	3,671	5.05	1,015	1.40	72,630
KY	1,306	5.72	287	1.26	22,830
LA	1,001	4.75	237	1.13	21,058
ME	1,243	5.55	639	2.86	22,380
MD	447	3.88	136	1.18	11,520
MA	1,946	3.60	1,005	1.86	54,060
MI	1,847	5.47	267	0.79	33,780
MN	4,996	8.39	1,493	2.51	59,580
MS	1,758	7.57	328	1.41	23,220
MO	1,077	6.39	185	1.10	16,859
MT	1,850	6.68	416	1.50	27,690
NE	5,613	9.95	1,234	2.19	56,400
NV	1,074	3.90	257	0.93	27,509
NH	934	2.89	316	0.98	32,340
NJ	1,394	3.24	839	1.95	43,020
NM	1,901	9.35	332	1.63	20,340
NY	1,635	3.08	576	1.09	53,070
NC	987	5.06	404	2.07	19,494
ND	877	3.22	618	2.27	27,210
OH	1,109	4.40	578	2.30	25,180
OK	981	5.88	322	1.93	16,679
OR	1,403	6.06	83	0.36	23,140
PA	2,156	3.23	1,772	2.66	66,720
RI	839	3.16	305	1.15	26,580
SC	2,549	6.85	502	1.35	37,229
SD	1,058	5.68	201	1.08	18,636
TN	76	3.96	26	1.35	1,920
TX	1,595	4.34	1,279	3.48	36,780
UT	2,682	10.28	456	1.75	26,098
VT	646	3.68	197	1.13	17,549

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Table 5b
BRFSS Cell Phone Distributions of Call Outcomes by State, 2011

State	COIN ¹		TERE ²		TOTAL_CP
	N	%	N	%	N
VA	850	4.12	398	1.93	20,610
WA	752	3.81	321	1.63	19,740
WV	900	7.08	184	1.45	12,720
WI	675	7.58	122	1.37	8,910
WY	1,638	3.74	811	1.85	43,830
GU	273	3.13	73	0.84	8,730
PR	2,220	16.37	111	0.82	13,560
Total	73,518		24,273		1,405,644
Median *	1,109	4.87	322	1.42	23,140
Minimum *	76	1.93	14	0.10	1,920
Maximum *	5,613	10.90	1,772	5.26	72,630

* The Median, Minimum, and Maximum values do not include Guam (GU), Puerto Rico (PR), or the U.S. Virgin Islands (VI).

¹ COIN = Complete Interviews

² TERE = Terminations and Refusals

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Table 6a
BRFSS Landline Categories of Eligibility by State, 2011

State	Total Eligible		Total Unknown		Total Ineligible		TOTAL_LL
	N	%	N	%	N	%	N
AL	11,595	16.17	13,584	18.94	46,549	64.90	71,728
AK	4,653	12.98	4,071	11.36	27,126	75.67	35,850
AZ	11,663	10.77	21,268	19.64	75,339	69.58	108,270
AR	7,244	11.97	9,790	16.18	43,476	71.85	60,510
CA	34,727	12.32	68,872	24.44	178,235	63.24	281,834
CO	16,769	15.71	15,550	14.56	74,451	69.73	106,770
CT	11,110	13.20	19,468	23.13	53,572	63.66	84,150
DE	6,449	14.76	12,756	29.20	24,475	56.03	43,680
DC	7,592	6.84	24,247	21.83	79,221	71.33	111,060
FL	19,395	10.52	42,195	22.90	122,700	66.58	184,290
GA	13,276	9.26	32,727	22.82	97,397	67.92	143,400
HI	11,036	11.45	17,365	18.01	68,020	70.54	96,421
ID	8,757	12.54	10,520	15.07	50,533	72.39	69,810
IL	7,514	12.04	12,423	19.91	42,463	68.05	62,400
IN	13,334	11.57	20,472	17.76	81,454	70.67	115,260
IA	8,638	13.71	6,970	11.06	47,392	75.23	63,000
KS	26,362	14.61	24,697	13.68	129,440	71.71	180,499
KY	12,915	8.84	29,449	20.16	103,695	71.00	146,059
LA	15,488	9.50	32,481	19.92	115,111	70.59	163,080
ME	18,031	15.77	20,634	18.05	75,665	66.18	114,330
MD	13,197	13.15	25,955	25.87	61,168	60.97	100,320
MA	32,710	10.20	96,773	30.19	191,097	59.61	320,580
MI	14,237	10.45	23,031	16.90	99,022	72.66	136,290
MN	13,833	12.67	17,446	15.98	77,871	71.34	109,150
MS	11,912	14.79	14,802	18.38	53,820	66.83	80,534
MO	7,964	15.39	7,469	14.43	36,328	70.18	51,761
MT	12,081	15.81	8,497	11.12	55,832	73.07	76,410
NE	28,459	16.58	16,976	9.89	126,195	73.53	171,630
NV	7,358	12.13	14,018	23.12	39,268	64.75	60,644
NH	9,264	14.96	13,036	21.05	39,617	63.98	61,917
NJ	21,839	12.04	48,724	26.86	110,847	61.10	181,410
NM	11,561	15.61	9,204	12.43	53,275	71.95	74,040
NY	12,622	9.11	35,396	25.54	90,552	65.35	138,570
NC	16,223	16.54	17,453	17.79	64,424	65.67	98,100
ND	6,954	13.01	6,828	12.77	39,678	74.22	53,460
OH	14,216	11.95	24,278	20.40	80,516	67.65	119,010
OK	11,545	19.55	8,767	14.85	38,727	65.60	59,039
OR	7,631	12.45	15,178	24.77	38,466	62.78	61,275
PA	16,662	12.98	30,998	24.15	80,710	62.87	128,370
RI	10,440	17.35	12,872	21.39	36,868	61.26	60,180
SC	15,508	15.61	14,903	15.00	68,949	69.39	99,360
SD	10,114	10.93	8,060	8.71	74,346	80.36	92,520
TN	8,184	8.80	21,040	22.62	63,793	68.58	93,017
TX	21,986	10.85	42,793	21.11	137,901	68.04	202,680
UT	14,853	18.22	10,652	13.06	56,035	68.72	81,540

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Table 6a
BRFSS Landline Categories of Eligibility by State, 2011

State	Total Eligible		Total Unknown		Total Ineligible		TOTAL_LL
	N	%	N	%	N	%	N
VT	9,948	17.53	10,010	17.64	36,802	64.84	56,760
VA	8,415	10.25	21,926	26.71	51,739	63.03	82,080
WA	24,667	12.57	37,856	19.29	133,707	68.14	196,230
WV	5,811	24.09	4,540	18.82	13,769	57.09	24,120
WI	7,158	14.31	6,924	13.85	35,928	71.84	50,010
WY	8,279	12.09	11,272	16.47	48,909	71.44	68,460
GU	2,870	7.97	1,953	5.43	31,177	86.60	36,000
PR	5,995	12.91	5,361	11.54	35,084	75.55	46,440
VI	4,348	9.64	5,377	11.93	35,365	78.43	45,090
Total	695,392		1,089,907		3,774,099		5,559,398
Median *	11,663	12.67	16,976	18.82	63,793	68.14	93,017
Minimum *	4,653	6.84	4,071	8.71	13,769	56.03	24,120
Maximum *	34,727	24.09	96,773	30.19	191,097	80.36	320,580

* The Median, Minimum, and Maximum values do not include Guam (GU), Puerto Rico (PR), or the U.S. Virgin Islands (VI).

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Table 6b
BRFSS Cell Phone Distributions of Categories of Eligibility by State, 2011

State	Total Eligible		Total Unknown		Total Ineligible		TOTAL_CP N
	N	%	N	%	N	%	
AL	1,738	6.42	15,578	57.50	9,774	36.08	27,090
AK	463	4.68	2,684	27.12	6,748	68.20	9,895
AZ	962	5.20	11,345	61.29	6,203	33.51	18,510
AR	706	7.82	4,022	44.54	4,302	47.64	9,030
CA	3,621	9.49	21,460	56.25	13,068	34.26	38,149
CO	1,497	11.77	6,660	52.36	4,563	35.87	12,720
CT	1,511	3.07	32,914	66.98	14,715	29.95	49,140
DE	838	5.93	7,143	50.55	6,149	43.52	14,130
DC	1,224	4.19	19,278	65.98	8,718	29.84	29,220
FL	2,215	7.79	18,291	64.31	7,934	27.90	28,440
GA	1,224	5.35	13,041	57.05	8,595	37.60	22,860
HI	2,661	12.15	11,726	53.55	7,512	34.30	21,899
ID	885	17.77	2,167	43.51	1,928	38.71	4,980
IL	790	6.39	6,856	55.47	4,714	38.14	12,360
IN	2,317	9.59	12,605	52.19	9,228	38.21	24,150
IA	1,547	11.48	4,355	32.33	7,568	56.18	13,470
KS	4,967	6.84	36,977	50.91	30,686	42.25	72,630
KY	1,720	7.53	13,849	60.66	7,261	31.80	22,830
LA	1,339	6.36	13,255	62.95	6,464	30.70	21,058
ME	2,155	9.63	12,075	53.95	8,150	36.42	22,380
MD	639	5.55	7,781	67.54	3,100	26.91	11,520
MA	3,251	6.01	34,400	63.63	16,409	30.35	54,060
MI	2,288	6.77	20,403	60.40	11,089	32.83	33,780
MN	6,875	11.54	33,810	56.75	18,895	31.71	59,580
MS	2,247	9.68	11,388	49.04	9,585	41.28	23,220
MO	1,418	8.41	9,157	54.32	6,284	37.27	16,859
MT	2,472	8.93	8,410	30.37	16,808	60.70	27,690
NE	7,539	13.37	21,983	38.98	26,878	47.66	56,400
NV	1,521	5.53	18,092	65.77	7,896	28.70	27,509
NH	1,386	4.29	19,474	60.22	11,480	35.50	32,340
NJ	2,471	5.74	25,611	59.53	14,938	34.72	43,020
NM	2,384	11.72	8,830	43.41	9,126	44.87	20,340
NY	2,368	4.46	35,804	67.47	14,898	28.07	53,070
NC	1,524	7.82	11,105	56.97	6,865	35.22	19,494
ND	1,758	6.46	11,954	43.93	13,498	49.61	27,210
OH	1,800	7.15	14,991	59.54	8,389	33.32	25,180
OK	1,546	9.27	7,179	43.04	7,954	47.69	16,679
OR	1,486	6.42	18,176	78.55	3,478	15.03	23,140
PA	4,577	6.86	38,136	57.16	24,007	35.98	66,720
RI	1,327	4.99	16,769	63.09	8,484	31.92	26,580
SC	3,349	9.00	16,210	43.54	17,670	47.46	37,229
SD	1,367	7.34	5,972	32.05	11,297	60.62	18,636
TN	105	5.47	1,294	67.40	521	27.14	1,920
TX	3,472	9.44	19,881	54.05	13,427	36.51	36,780
UT	3,769	14.44	12,363	47.37	9,966	38.19	26,098

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Table 6b
BRFSS Cell Phone Distributions of Categories of Eligibility by State, 2011

State	Total Eligible		Total Unknown		Total Ineligible		TOTAL_CP N
	N	%	N	%	N	%	
VT	939	5.35	9,905	56.44	6,705	38.21	17,549
VA	1,346	6.53	13,218	64.13	6,046	29.34	20,610
WA	1,083	5.49	13,350	67.63	5,307	26.88	19,740
WV	1,133	8.91	8,992	70.69	2,595	20.40	12,720
WI	818	9.18	3,936	44.18	4,156	46.64	8,910
WY	2,799	6.39	10,907	24.88	30,124	68.73	43,830
GU	433	4.96	3,273	37.49	5,024	57.55	8,730
PR	2,864	21.12	5,737	42.31	4,959	36.57	13,560
VI	4,348	9.64	5,377	11.93	35,365	78.43	45,090
Total	108,734		764,772		532,138		1,405,644
Median *	1,546	6.86	12,605	56.44	8,389	35.98	23,140
Minimum *	105	3.07	1,294	24.88	521	15.03	1,920
Maximum *	7,539	17.77	38,136	78.55	30,686	68.73	72,630

* The Median, Minimum, and Maximum values do not include Guam (GU), Puerto Rico (PR), or the U.S. Virgin Islands (VI).

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Table 7a
BRFSS Landline Call Outcome Rates by State, 2011

State	AAPOR Cooperation Rate #4 (%)	AAPOR Cooperation Rate #2 (%)	AAPOR Refusal Rate #2 (%)	Overall Response Rate (%)	AAPOR Response Rate #4 (%)
AL	71.77	68.63	18.41	30.26	46.79
AK	81.94	79.49	13.87	51.23	62.91
AZ	63.09	60.03	25.07	25.85	42.85
AR	71.72	67.91	20.49	34.54	51.97
CA	54.58	52.78	31.14	24.25	37.43
CO	86.73	83.95	9.76	52.76	63.81
CT	69.14	66.75	19.68	27.43	44.09
DE	76.85	74.61	13.75	25.96	45.66
DC	69.39	67.51	19.74	23.29	44.75
FL	68.64	65.15	20.27	25.18	44.36
GA	86.05	81.73	8.59	24.39	52.98
HI	80.51	73.79	11.78	32.44	48.64
ID	73.69	71.16	19.61	36.32	54.92
IL	77.20	75.08	15.57	34.52	52.73
IN	67.26	64.45	23.18	29.02	47.61
IA	80.29	77.51	15.46	50.39	62.98
KS	74.02	72.09	20.05	38.64	57.12
KY	84.43	83.79	11.31	34.72	61.35
LA	73.26	71.49	19.30	23.63	52.89
ME	77.96	75.15	15.99	40.17	56.56
MD	84.90	82.02	9.51	29.69	53.49
MA	79.12	75.48	11.67	18.97	44.22
MI	78.82	75.69	14.84	32.94	55.21
MN	89.00	85.88	7.79	38.25	63.04
MS	75.30	70.64	16.72	33.79	50.98
MO	79.94	77.19	14.73	46.05	58.71
MT	81.96	79.97	14.26	48.33	64.78
NE	82.49	80.34	14.00	52.62	65.98
NV	75.69	72.31	15.89	26.12	49.48
NH	70.53	68.96	20.59	30.72	49.27
NJ	82.95	79.79	9.84	25.87	47.87
NM	80.16	76.12	15.08	49.35	60.94
NY	63.96	59.82	21.47	18.66	38.10
NC	75.93	72.91	17.29	37.53	54.53
ND	75.50	73.40	18.94	40.69	58.38
OH	77.53	74.20	14.45	26.99	49.84
OK	81.48	77.72	13.00	51.08	57.20
OR	73.93	72.15	17.79	30.38	50.46
PA	69.80	66.68	19.50	27.86	45.08
RI	69.34	66.69	20.79	31.52	47.03
SC	82.75	78.47	12.44	45.72	59.66
SD	84.37	82.18	12.31	49.17	66.47
TN	74.36	72.69	18.83	24.36	54.61
TX	74.37	70.79	16.90	29.56	49.06
UT	84.01	81.13	11.59	54.51	60.88

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Table 7a
BRFSS Landline Call Outcome Rates by State, 2011

State	AAPOR Cooperation Rate #4 (%)	AAPOR Cooperation Rate #2 (%)	AAPOR Refusal Rate #2 (%)	Overall Response Rate (%)	AAPOR Response Rate #4 (%)
VT	76.96	75.48	16.77	42.56	56.01
VA	81.73	78.80	11.01	22.77	49.24
WA	70.42	66.86	19.51	29.85	46.44
WV	84.45	81.81	11.50	54.31	62.44
WI	73.61	72.65	20.35	44.00	56.76
WY	77.11	74.54	16.77	37.40	56.48
GU	81.44	76.03	12.72	43.12	55.82
PR	93.25	88.74	4.82	65.54	66.66
VI	72.94	69.48	20.16	38.81	54.33
Median *	76.96	74.20	15.99	32.94	52.98
Minimum *	54.58	52.78	7.79	18.66	37.43
Maximum *	89.00	85.88	31.14	54.51	66.47

* The Median, Minimum, and Maximum values do not include Guam (GU), Puerto Rico (PR), or the U.S. Virgin Islands (VI).

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Table 7b
BRFSS Cell Phone Outcome Rates by State, 2011

State	AAPOR Cooperation Rate #4 (%)	AAPOR Cooperation Rate #2 (%)	AAPOR Refusal Rate #2 (%)	AAPOR Response Rate #4 (%)
AL	73.27	72.42	10.10	27.68
AK	83.12	82.09	10.55	51.94
AZ	73.18	72.23	8.93	24.38
AR	69.29	68.97	15.32	34.56
CA	52.30	51.36	18.64	20.43
CO	89.11	88.40	4.77	39.05
CT	74.33	73.58	7.14	20.68
DE	98.14	94.84	0.82	43.37
DC	82.08	81.02	5.33	24.41
FL	80.66	79.82	6.49	27.08
GA	75.82	74.53	9.79	30.71
HI	68.53	64.98	11.77	25.63
ID	67.45	67.04	16.72	34.66
IL	85.00	84.65	6.09	34.50
IN	57.06	56.70	18.01	23.93
IA	84.53	83.79	9.89	54.02
KS	78.34	77.87	10.03	36.28
KY	81.98	81.22	6.56	29.87
LA	80.86	79.51	6.56	27.70
ME	66.05	65.52	13.65	26.56
MD	76.67	74.87	6.91	22.70
MA	65.94	64.14	11.24	21.77
MI	87.37	86.19	4.62	31.97
MN	76.99	75.51	9.39	31.43
MS	84.28	83.59	7.44	39.87
MO	85.34	84.34	5.96	34.70
MT	81.64	81.46	11.72	52.11
NE	81.98	81.45	9.99	45.43
NV	80.69	79.03	5.78	24.17
NH	74.71	74.48	9.07	26.81
NJ	62.43	60.90	13.74	22.83
NM	85.13	84.68	7.88	45.12
NY	73.95	72.51	7.91	22.46
NC	70.96	70.30	11.41	27.87
ND	58.66	58.23	19.71	27.97
OH	65.74	64.70	12.99	24.93
OK	75.29	74.83	11.86	36.14
OR	94.41	94.41	1.20	20.25
PA	54.89	53.77	16.59	20.18
RI	73.34	72.71	8.48	23.34
SC	83.55	80.13	8.46	42.97
SD	84.03	82.85	9.99	52.59
TN	74.51	73.08	8.07	23.60
TX	55.50	54.72	16.93	21.11
UT	85.47	83.58	6.37	37.45

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Table 7b
BRFSS Cell Phone Outcome Rates by State, 2011

State	AAPOR Cooperation Rate #4 (%)	AAPOR Cooperation Rate #2 (%)	AAPOR Refusal Rate #2 (%)	AAPOR Response Rate #4 (%)
VT	76.58	76.49	9.16	29.94
VA	68.11	67.03	10.61	22.65
WA	70.04	69.91	9.61	22.46
WV	83.03	82.64	4.76	23.28
WI	84.69	84.38	8.33	46.07
WY	66.88	66.42	21.76	43.96
GU	78.90	72.99	10.54	39.41
PR	95.24	95.03	2.24	44.72
Median *	76.58	74.87	9.39	27.87
Minimum *	52.30	51.36	0.82	20.18
Maximum *	98.14	94.84	21.76	54.02

* The Median, Minimum, and Maximum values do not include Guam (GU), Puerto Rico (PR), or the U.S. Virgin Islands (VI).

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Table 8
BRFSS Combined Weighted Response Rates and Components by State, 2011

State	Landline Response Rate (RR4) %	Landline Total Sample TOTAL_LL N	Cell Phone Response Rate (RR4) %	Cell Phone Total Sample TOTAL_CP N	Landline & Cell Phone Total N	Landline Percent of Sample (P ₁) %	Cell Phone Percent of Sample (P ₂) %	Weighted Response Rate (RR4) %
AL	46.79	71728	27.68	27090	98818	72.59	27.41	41.55
AK	62.91	35850	51.94	9895	45745	78.37	21.63	60.53
AZ	42.85	108270	24.38	18510	126780	85.40	14.60	40.15
AR	51.97	60510	34.56	9030	69540	87.01	12.99	49.71
CA	37.43	281834	20.43	38149	319983	88.08	11.92	35.40
CO	63.81	106770	39.05	12720	119490	89.35	10.65	61.18
CT	44.09	84150	20.68	49140	133290	63.13	36.87	35.46
DE	45.66	43680	43.37	14130	57810	75.56	24.44	45.10
DC	44.75	111060	24.41	29220	140280	79.17	20.83	40.51
FL	44.36	184290	27.08	28440	212730	86.63	13.37	42.05
GA	52.98	143400	30.71	22860	166260	86.25	13.75	49.92
HI	48.64	96421	25.63	21899	118320	81.49	18.51	44.38
ID	54.92	69810	34.66	4980	74790	93.34	6.66	53.57
IL	52.73	62400	34.50	12360	74760	83.47	16.53	49.72
IN	47.61	115260	23.93	24150	139410	82.68	17.32	43.51
IA	62.98	63000	54.02	13470	76470	82.39	17.61	61.40
KS	57.12	180499	36.28	72630	253129	71.31	28.69	51.14
KY	61.35	146059	29.87	22830	168889	86.48	13.52	57.10
LA	52.89	163080	27.70	21058	184138	88.56	11.44	50.01
ME	56.56	114330	26.56	22380	136710	83.63	16.37	51.65
MD	53.49	100320	22.70	11520	111840	89.70	10.30	50.31
MA	44.22	320580	21.77	54060	374640	85.57	14.43	40.98
MI	55.21	136290	31.97	33780	170070	80.14	19.86	50.60
MN	63.04	109150	31.43	59580	168730	64.69	35.31	51.88
MS	50.98	80534	39.87	23220	103754	77.62	22.38	48.49
MO	58.71	51761	34.70	16859	68620	75.43	24.57	52.81
MT	64.78	76410	52.11	27690	104100	73.40	26.60	61.41
NE	65.98	171630	45.43	56400	228030	75.27	24.73	60.89
NV	49.48	60644	24.17	27509	88153	68.79	31.21	41.58
NH	49.27	61917	26.81	32340	94257	65.69	34.31	41.57
NJ	47.87	181410	22.83	43020	224430	80.83	19.17	43.07
NM	60.94	74040	45.12	20340	94380	78.45	21.55	57.53
NY	38.10	138570	22.46	53070	191640	72.31	27.69	33.77
NC	54.53	98100	27.87	19494	117594	83.42	16.58	50.11
ND	58.38	53460	27.97	27210	80670	66.27	33.73	48.12
OH	49.84	119010	24.93	25180	144190	82.54	17.46	45.49
OK	57.20	59039	36.14	16679	75718	77.97	22.03	52.57
OR	50.46	61275	20.25	23140	84415	72.59	27.41	42.18
PA	45.08	128370	20.18	66720	195090	65.80	34.20	36.56
RI	47.03	60180	23.34	26580	86760	69.36	30.64	39.77
SC	59.66	99360	42.97	37229	136589	72.74	27.26	55.11
SD	66.47	92520	52.59	18636	111156	83.23	16.77	64.14
TN	54.61	93017	23.60	1920	94937	97.98	2.02	53.99
TX	49.06	202680	21.11	36780	239460	84.64	15.36	44.77

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Table 8
BRFSS Combined Weighted Response Rates and Components by State, 2011

State	Landline Response Rate (RR4) %	Landline Total Sample TOTAL_LL N	Cell Phone Response Rate (RR4) %	Cell Phone Total Sample TOTAL_CP N	Landline & Cell Phone Total N	Landline Percent of Sample (P ₁) %	Cell Phone Percent of Sample (P ₂) %	Weighted Response Rate (RR4) %
UT	60.88	81540	37.45	26098	107638	75.75	24.25	55.20
VT	56.01	56760	29.94	17549	74309	76.38	23.62	49.86
VA	49.24	82080	22.65	20610	102690	79.93	20.07	43.90
WA	46.44	196230	22.46	19740	215970	90.86	9.14	44.25
WV	62.44	24120	23.28	12720	36840	65.47	34.53	48.92
WI	56.76	50010	46.07	8910	58920	84.88	15.12	55.14
WY	56.48	68460	43.96	43830	112290	60.97	39.03	51.59
GU	55.82	36000	39.41	8730	44730	80.48	19.52	52.62
PR	66.66	46440	44.72	13560	60000	77.40	22.60	61.70
VI	54.33	45090	N/A	N/A	45090	100.00	N/A	N/A
Total		5559398		1405644	6965042			
Median *	52.98	93017	27.87	23140	112290	79.93	20.07	49.72
Minimum *	37.43	24120	20.18	1920	36840	60.97	2.02	33.77
Maximum *	66.47	320580	54.02	72630	374640	97.98	39.03	64.14

* The Median, Minimum, and Maximum values do not include Guam (GU), Puerto Rico (PR), or the U.S. Virgin Islands (VI).

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