

Behavioral Risk Factor Surveillance System

2023 Summary Data Quality Report August 6, 2024



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Introduction

The Behavioral Risk Factor Surveillance System (BRFSS) is a state-based, CDC-assisted health-data collection project and partnership of state health departments, CDC's Division of Population Health, and other CDC programs and offices. It comprises telephone surveys conducted by the health departments of all 50 states, the District of Columbia, Puerto Rico, the US Virgin Islands, and Guam.

This *Summary Data Quality Report* presents detailed descriptions of the 2023 BRFSS calling outcomes and call summary information for each of the participating states and territories. All BRFSS public-use data are collected by landline telephone and cellular telephone to produce a single data set aggregated from the 2023 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's 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 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, should 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 Each year of data collection since 2011 has included a larger percentage of calls from the cell phone sample. In 2023, a majority of the BRFSS interviews were conducted by cell phone. The annual code books provide information on the number and percentage of calls conducted by landline and cell phone by year.

The measures presented in this document are designed to summarize the quality of the 2023 BRFSS survey data. Response rates, cooperation rates, and refusal rates for BRFSS are calculated using standards set by the American Association for Public Opinion Research (AAPOR). The BRFSS has calculated 2023 response rates using AAPOR Response Rate #4.²

Based on the AAPOR guidelines, response rate calculations include assumptions of eligibility among potential respondents or 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 determine which telephone numbers are out-of-sample and which telephone numbers represent likely households. The BRFSS calculates likely households and eligible persons using the proportions of eligible households/persons 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 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). Moreover, since the initial inclusion of cell phone respondents, the proportion of the sample that is interviewed by cell phone has increased. In many states, cell phone respondents represent the majority of the sample. Since 2012, median BRFSS cell phone response rates have risen slightly. Overall, BRFSS response rates have leveled off in the past few years, with landline rates declining and cell phone rates improving. In 2023, the screening of eligible landline phone numbers has improved—which may account for a slight improvement in the proportion of numbers identified as working phone numbers in the landline sample. This change would not necessarily increase response rates. The leveling-off of telephone survey response rates is noted for other federal surveys as well—although in one report, authors noted that the accelerated declines in response rates seen in 6 other surveys were not seen in BRFSS and one other survey.³

Table 1. Examples of Survey Response Rates		
Survey	Year(s)	Overall Response Rates
^a California Health Interview Survey (CHIS)	2021–22	9.2%
^b National Health Interview Survey	2023	48.8%
^c Am Time Use Survey	2023	36.9%
BRFSS ^{d,e}	2023	44.7%
^a California Health Interview Survey. CHIS 2021–2022 Methodology Series: Report 4—Response Rates. Los Angeles, CA: UCLA Center for Health Policy Research, 2023. Tables 6–9. https://healthpolicy.ucla.edu/sites/default/files/2023-09/chis_2021_2022_methodologyreport4_responserates_final_09112023.pdf Accessed 14 August 2024		
^b National Center for Health Statistics. National Health Interview Survey, 2023. Public-use data file and documentation. https://ftp.cdc.gov/pub/Health_Statistics/NCHS/Dataset_Documentation/NHIS/2023/srvydesc-508.pdf . Table 4. Accessed 20 August 2024.		
^c Am Time Use Survey Bureau of Labor Statistics (sponsor)/by the U.S. Census Bureau. American Time Use Survey User’s Guide, 2023 <i>Understanding ATUS 2003 to 2023</i> . https://www.bls.gov/tus/atususersguide.pdf Table 3.3. Accessed 14 August 2024.		
^d BRFSS response rates are presented here as median rates for all participating states and territories.		
^e Response rate (RR) formulae may differ by survey: CHIS—AAPOR RR#4 (like BRFSS) NHIS—AAPOR RR#2 ATUS—AAPOR RR#2		

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 that of 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.

For clarity, BRFSS recommends that authors and 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 for Public Opinion Research (AAPOR) Response Rate Formula #4 [Standards-Definitions-10th-edition.pdf \(aapor.org\)](https://www.aapor.org/Standards-Definitions-10th-edition.pdf) (p86). Response rate is the number of respondents who completed the survey as a proportion of all eligible and likely-eligible people. The median survey response rate for all participating states, territories and Washington, DC, in 2023 was 44.7 and ranged from 21.7 to 63.1.^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 See the Summary Data Quality Report for the year(s) included in the analyses. The 2023 document is available at: https://www.cdc.gov/brfss/annual_data/2023/pdf/2023-sdqr-508.pdf.

BRFSS 2023 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 a respondent before assigning a final disposition code. In 2023, 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 to 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 or respondent (3000 level codes). Partially completed interviews are those that have collected all information needed to weight responses (about 12 minutes into the survey questionnaire, not including time for eligibility screening). The table below illustrates the codes used by the BRFSS in 2023, and it notes the instances where codes are used only for landline telephone or cellular telephone sample numbers.

The Disposition Code Table below uses terms to define and categorize outcomes, which include the following:

- **Respondent:** A person who is contacted by an interviewer and who may be eligible for interview.
- **Private residence:** Persons residing in private residences or college housing are eligible. Persons living in group homes, military barracks or other living arrangements are not eligible. Persons living in vacation homes for 30 days or more are eligible. Eligibility is ascertained by asking each potential respondent whether they live in a private residence. If the respondent is unsure whether their residence qualifies, additional definitions of residences are provided.
- **Landline telephone:** A telephone that is used within a specific location, including traditional household telephones, Voice Over Internet Protocol (VOIP), and Internet phones connected to computers in a household.
- **Cellular telephone:** A mobile device that is not tied to a 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 United States 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 these phones are eligible for interview. Persons using telephones that are exclusively for business use are not eligible for interview.

Table 2.
2023 Disposition Codes for Landline Telephones and Cellular Telephones

Category	Code	Description
Interviewed (1000-level codes)	1100	Completed interview
	1200	Partially completed interview

Table 2.

2023 Disposition Codes for Landline Telephones and Cellular Telephones

Category	Code	Description
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
	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 known 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
	4460	Landline telephone number (used for cellular telephone only)
	4500	Non-residence/business
	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.
Categories of 2023 Landline and Cellular Telephone Disposition Codes

Category	Disposition Code Definitions	Formulae Abbreviation
Completed Interviews	1100+1200	COIN
Eligible	1100+1200+2111+2112+2120+2210+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

The disposition codes are categorized according to the groups illustrated in Table 3 to produce rates of resolution, cooperation, completion, refusal, and response. In accordance with population surveillance standards, the proportions of people who may have been eligible for interview, but who were not able to be interviewed, are accounted for in the formulae.

Eligibility Factor

$$E = \text{ELIG} / (\text{ELIG} + \text{INELIG})$$

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

$$((\text{ELIG} + \text{INELIG}) / (\text{ELIG} + \text{INELIG} + \text{UNKELIG})) * 100$$

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

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

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

$$(\text{COIN} / \text{CONELIG}) * 100$$

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

$$(\text{TERE} / (\text{ELIG} + (\text{E} * \text{UNKELIG}))) * 100$$

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 as 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

$$(\text{COIN} / ((\text{ELIG} + (\text{E} * \text{UNKELIG})))) * 100$$

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:

$$P1 = \text{TOTAL LANDLINE SAMPLE} / (\text{TOTAL LANDLINE SAMPLE} + \text{TOTAL CELL PHONE SAMPLE});$$

$$P2 = \text{TOTAL CELL PHONE SAMPLE} / (\text{TOTAL LANDLINE SAMPLE} + \text{TOTAL CELL PHONE SAMPLE});$$

The formula for the Combined Landline Telephone and Cellular Telephone Weighted Response Rate, therefore, is described below:

$$\text{COMBINED RESPONSE RATE} = (P1 * \text{LANDLINE RESPONSE RATE}) + (P2 * \text{CELL PHONE RESPONSE RATE}).$$

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, cooperation rates, 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.

Table 4A. Landline Sample.
Completions, Terminations and Refusals, Contacted Eligible Households and Total Sample by State

	COIN		TERE		CONELIG		COOP	
State*	N	%	N	%	N	%	%	Total Sample
AL	959	2.1	339	0.7	1,304	2.9	73.5	45,209
AK	1,048	1.2	713	0.8	1,799	2.1	58.3	84,750
AZ	2,251	1.8	1,320	1.1	3,662	3.0	61.5	121,740
AR	1,421	2.8	733	1.4	2,219	4.3	64.0	51,090
CA	2,684	0.2	1,226	0.1	4,108	0.3	65.3	1,294,110
CO	900	2.1	565	1.3	1,523	3.6	59.1	42,481
CT	1,000	2.8	691	1.9	1,719	4.7	58.2	36,330
DE	959	0.5	475	0.2	1,502	0.8	63.8	194,850
DC	800	2.1	537	1.4	1,380	3.7	58.0	37,320
FL	3,480	1.8	2,926	1.5	6,561	3.4	53.0	195,360
GA	2,409	1.7	2,463	1.7	5,012	3.4	48.1	145,350
HI	1,583	1.5	666	0.6	2,400	2.2	66.0	108,270
ID	980	2.3	252	0.6	1,266	2.9	77.4	43,350
IL	502	1.0	201	0.4	725	1.5	69.2	48,150
IN	2,176	1.8	1,684	1.4	3,959	3.3	55.0	121,140
IA	1,474	3.5	556	1.3	2,137	5.1	69.0	42,300
KS	1,855	1.5	787	0.6	2,730	2.2	67.9	122,095
LA	581	1.0	341	0.6	932	1.7	62.3	56,310
ME	4,323	0.7	1,019	0.2	5,411	0.9	79.9	576,843
MD	4,550	2.2	3,638	1.7	8,356	4.0	54.5	209,490
MA	1,136	1.0	282	0.2	1,436	1.2	79.1	116,362
MI	2,709	3.1	1,360	1.6	4,133	4.7	65.5	87,180
MN	2,610	0.7	998	0.3	3,713	1.0	70.3	354,300
MS	408	1.3	84	0.3	494	1.6	82.6	31,546
MO	1,592	2.1	531	0.7	2,172	2.9	73.3	75,009
MT	1,945	1.5	675	0.5	2,660	2.1	73.1	129,240

Table 4A. Landline Sample.
Completions, Terminations and Refusals, Contacted Eligible Households and Total Sample by State

	COIN		TERE		CONELIG		COOP	
State*	N	%	N	%	N	%	%	Total Sample
NE	2,349	2.2	843	0.8	3,231	3.0	72.7	108,990
NV	480	1.2	231	0.6	721	1.8	66.6	41,091
NH	3,556	4.3	1,170	1.4	4,778	5.8	74.4	82,260
NJ	1,707	1.6	1,526	1.4	3,312	3.1	51.5	106,350
NM	831	2.0	393	0.9	1,256	3.0	66.2	41,910
NY	2,121	1.7	2,052	1.6	4,222	3.3	50.2	126,870
NC	485	1.3	102	0.3	596	1.6	81.4	38,040
ND	1,200	3.7	836	2.6	2,074	6.4	57.9	32,482
OH	2,770	1.9	2,299	1.6	5,239	3.6	52.9	147,030
OK	1,085	2.0	310	0.6	1,463	2.8	74.2	53,015
OR	504	0.9	104	0.2	613	1.1	82.2	55,217
RI	627	2.0	449	1.4	1,105	3.6	56.7	31,020
SC	2,575	2.1	2,246	1.8	4,974	4.0	51.8	123,060
SD	1,060	0.5	156	0.1	1,230	0.6	86.2	213,759
TN	652	1.4	293	0.6	959	2.0	68.0	47,160
TX	1,872	0.7	1,624	0.6	3,640	1.4	51.4	261,180
UT	1,769	2.7	688	1.0	2,516	3.8	70.3	66,268
VT	1,146	2.9	620	1.5	1,789	4.5	64.1	40,050
VA	2,661	0.6	847	0.2	3,648	0.8	72.9	457,950
WA	3,962	4.5	1,789	2.0	5,802	6.5	68.3	88,800
WV	1,243	3.0	492	1.2	1,766	4.3	70.4	41,400
WI	4,861	0.6	1,826	0.2	6,903	0.9	70.4	770,370
WY	1,702	0.7	535	0.2	2,303	0.9	73.9	251,370
GU	308	1.4	217	1.0	566	2.6	54.4	22,050
PR	189	1.3	74	0.5	295	2.1	64.1	14,070
VI	299	0.5	133	0.2	439	0.8	68.1	57,960

Table 4A. Landline Sample.

Completions, Terminations and Refusals, Contacted Eligible Households and Total Sample by State

	COIN		TERE		CONELIG		COOP	
State*	N	%	N	%	N	%	%	Total Sample
Minimum	408	0.2	84	0.1	494	0.3	48.1	14,070
Maximum	4,861	4.5	3,638	2.6	8,356	6.5	86.2	1,294,110
Mean	1,787	1.8	949	0.9	2,712	2.7	66.2	155,017
Median	1,583	1.6	688	0.8	2,172	2.8	66.5	87,810

*States listed in order by FIPS code. During 2023, Kentucky and Pennsylvania were unable to collect enough data to meet the minimum requirements to be included in this public data set.

Table 4B. Cell Phone Sample.
Completions, Terminations and Refusals, Contacted Eligible Households and Total Sample by State

	COIN		TERE		CONELIG		COOP	
State*	N	%	N	%	N	%	%	Total Sample
AL	3,246	3.4	617	0.7	3,886	4.1	83.5	94,172
AK	4,355	2.0	836	0.4	5,295	2.5	82.2	214,620
AZ	9,756	3.3	2,156	0.7	12,275	4.1	79.5	300,000
AR	3,930	3.5	1,010	0.9	5,103	4.5	77.0	112,350
CA	8,525	0.8	1,956	0.2	10,811	1.0	78.9	1,104,060
CO	7,832	4.1	1,742	0.9	9,807	5.1	79.9	191,070
CT	9,002	2.7	2,435	0.7	11,946	3.6	75.4	328,673
DE	3,468	1.2	799	0.3	4,337	1.5	80.0	289,770
DC	2,203	2.5	508	0.6	2,815	3.2	78.3	87,480
FL	8,856	2.2	2,814	0.7	12,165	3.1	72.8	395,550
GA	5,601	2.2	1,917	0.8	7,868	3.1	71.2	254,430
HI	6,120	5.5	1,205	1.1	7,516	6.8	81.4	111,330
ID	6,136	3.9	904	0.6	7,286	4.6	84.2	157,272
IL	4,512	2.3	992	0.5	5,646	2.9	79.9	197,100
IN	8,964	3.5	2,410	1.0	11,813	4.7	75.9	253,320
IA	7,675	6.5	1,092	0.9	8,907	7.5	86.2	118,830
KS	8,281	3.0	1,263	0.5	9,777	3.6	84.7	273,286
LA	4,919	1.8	1,725	0.6	6,703	2.5	73.4	269,707
ME	8,196	2.6	795	0.2	9,420	2.9	87.0	320,767
MD	13,530	3.3	3,536	0.9	17,526	4.3	77.2	408,390
MA	8,473	1.6	982	0.2	10,389	2.0	81.6	525,323
MI	7,362	3.1	1,799	0.8	9,598	4.1	76.7	234,780
MN	13,130	1.0	2,795	0.2	16,229	1.3	80.9	1,254,210
MS	3,652	2.0	549	0.3	4,233	2.3	86.3	185,306
MO	5,582	4.7	1,039	0.9	6,926	5.8	80.6	119,334
MT	5,296	3.6	574	0.4	5,913	4.0	89.6	147,870

Table 4B. Cell Phone Sample.
Completions, Terminations and Refusals, Contacted Eligible Households and Total Sample by State

	COIN		TERE		CONELIG		COOP	
State*	N	%	N	%	N	%	%	Total Sample
NE	10,841	3.5	1,816	0.6	12,857	4.1	84.3	311,185
NV	2,126	2.6	342	0.4	2,534	3.1	83.9	81,735
NH	3,441	5.9	464	0.8	3,961	6.8	86.9	58,020
NJ	7,870	2.0	2,835	0.7	11,152	2.8	70.6	392,100
NM	2,309	3.4	556	0.8	2,905	4.2	79.5	68,746
NY	15,653	2.2	6,007	0.8	22,665	3.2	69.1	718,770
NC	3,037	3.8	343	0.4	3,403	4.3	89.2	79,798
ND	4,801	5.3	1,145	1.3	6,070	6.6	79.1	91,320
OH	10,747	2.7	3,038	0.8	14,388	3.7	74.7	391,980
OK	5,603	3.8	1,064	0.7	6,719	4.5	83.4	147,957
OR	5,502	2.8	583	0.3	6,537	3.4	84.2	194,971
RI	5,401	4.1	1,311	1.0	6,954	5.2	77.7	133,290
SC	7,544	3.1	1,836	0.8	9,990	4.1	75.5	243,780
SD	5,022	1.7	315	0.1	5,842	2.0	86.0	290,435
TN	4,914	1.9	1,505	0.6	6,480	2.5	75.8	264,084
TX	7,420	2.4	2,182	0.7	10,142	3.3	73.2	311,460
UT	9,633	5.2	1,467	0.8	11,948	6.4	80.6	186,421
VT	6,396	4.2	1,224	0.8	7,760	5.1	82.4	151,230
VA	3,939	1.4	619	0.2	4,609	1.7	85.5	272,850
WA	22,978	7.1	4,025	1.2	27,438	8.5	83.7	323,550
WV	3,156	3.1	362	0.4	3,534	3.4	89.3	102,690
WI	8,151	0.9	1,546	0.2	9,837	1.1	82.9	866,910
WY	2,888	1.1	473	0.2	3,397	1.2	85.0	274,890
GU	1,253	3.0	353	0.8	1,692	4.1	74.1	41,748
PR	4,510	8.7	244	0.5	4,777	9.2	94.4	52,117
VI	2,017	2.6	427	0.6	2,472	3.2	81.6	76,740

Table 4B. Cell Phone Sample.

Completions, Terminations and Refusals, Contacted Eligible Households and Total Sample by State

	COIN		TERE		CONELIG		COOP	
State*	N	%	N	%	N	%	%	Total Sample
Minimum	2,126	0.8	315	0.1	2,534	1.0	69.1	58,020
Maximum	22,978	13.2	6,007	1.3	27,438	13.2	89.6	1,254,210
Mean	6,897	3.4	1,500	0.6	8,680	4.1	80.5	283,820
Median	6,120	3.0	1,205	0.7	7,516	3.8	80.6	243,780

*States listed in order by FIPS code. During 2023, Kentucky and Pennsylvania were unable to collect enough data to meet the minimum requirements to be included in this public data set.

Table 5A. Landline Sample.
Categories of Eligibility by State (Landline Only).

	ELIG		INELIG		UNKELIG	
State*	N	%	N	%	N	%
AL	1,304	2.9	34,307	75.9	9,598	21.2
AK	1,799	2.1	75,249	88.8	7,702	9.1
AZ	3,662	3.0	97,987	80.5	20,091	16.5
AR	2,219	4.3	42,332	82.9	6,539	12.8
CA	4,108	0.3	1,097,058	84.8	192,944	14.9
CO	1,523	3.6	32,953	77.6	8,005	18.8
CT	1,719	4.7	26,006	71.6	8,605	23.7
DE	1,502	0.8	139,596	71.6	53,752	27.6
DC	1,380	3.7	29,228	78.3	6,712	18.0
FL	6,561	3.4	155,108	79.4	33,691	17.2
GA	5,012	3.4	115,006	79.1	25,332	17.4
HI	2,400	2.2	82,339	76.0	23,531	21.7
ID	1,266	2.9	35,990	83.0	6,094	14.1
IL	725	1.5	38,143	79.2	9,282	19.3
IN	3,959	3.3	97,990	80.9	19,191	15.8
IA	2,137	5.1	31,953	75.5	8,210	19.4
KS	2,730	2.2	103,332	84.6	16,033	13.1
LA	932	1.7	43,497	77.2	11,881	21.1
ME	5,411	0.9	443,231	76.8	128,201	22.2
MD	8,356	4.0	156,144	74.5	44,990	21.5
MA	1,436	1.2	70,617	60.7	44,309	38.1
MI	4,133	4.7	68,116	78.1	14,931	17.1
MN	3,713	1.0	278,894	78.7	71,693	20.2
MS	494	1.6	25,926	82.2	5,126	16.2
MO	2,172	2.9	62,352	83.1	10,485	14.0
MT	2,660	2.1	96,760	74.9	29,820	23.1
NE	3,231	3.0	83,793	76.9	21,966	20.2

Table 5A. Landline Sample.
Categories of Eligibility by State (Landline Only).

	ELIG		INELIG		UNKELIG	
State*	N	%	N	%	N	%
NV	721	1.8	32,134	78.2	8,236	20.0
NH	4,778	5.8	58,907	71.6	18,575	22.6
NJ	3,312	3.1	78,300	73.6	24,738	23.3
NM	1,256	3.0	33,088	79.0	7,566	18.1
NY	4,222	3.3	89,202	70.3	33,446	26.4
NC	596	1.6	30,121	79.2	7,323	19.3
ND	2,074	6.4	24,159	74.4	6,249	19.2
OH	5,239	3.6	114,478	77.9	27,313	18.6
OK	1,463	2.8	44,593	84.1	6,959	13.1
OR	613	1.1	40,616	73.6	13,988	25.3
RI	1,105	3.6	23,498	75.8	6,417	20.7
SC	4,974	4.0	97,003	78.8	21,083	17.1
SD	1,230	0.6	174,966	81.9	37,563	17.6
TN	959	2.0	34,698	73.6	11,503	24.4
TX	3,640	1.4	214,866	82.3	42,674	16.3
UT	2,516	3.8	53,077	80.1	10,675	16.1
VT	1,789	4.5	32,859	82.0	5,402	13.5
VA	3,648	0.8	393,748	86.0	60,554	13.2
WA	5,802	6.5	67,158	75.6	15,840	17.8
WV	1,766	4.3	29,188	70.5	10,446	25.2
WI	6,903	0.9	563,016	73.1	200,451	26.0
WY	2,303	0.9	208,838	83.1	40,229	16.0
GU	566	2.6	11,766	53.4	9,718	44.1
PR	295	2.1	11,979	85.1	1,796	12.8
VI	439	0.8	54,537	94.1	2,984	5.1
Minimum	494	0.3	23,498	60.7	5,126	9.1
Maximum	8,356	6.5	1,097,058	88.8	200,451	38.1

Table 5A. Landline Sample.
Categories of Eligibility by State (Landline Only).

	ELIG		INELIG		UNKELIG	
State*	N	%	N	%	N	%
Mean	2,805	2.7	122,498	78.3	29,713	19.0
Median	2,219	2.8	68,116	78.5	15,840	18.3

*States listed in order by FIPS code. During 2023, Kentucky and Pennsylvania were unable to collect enough data to meet the minimum requirements to be included in this public data set.

**Table 5B. Cell Phone Sample.
Categories of Eligibility by State (Cell Phone Only).**

	ELIG		INELIG		UNKELIG	
State*	N	%	N	%	N	%
AL	3,886	4.1	26,946	28.6	63,340	67.3
AK	5,295	2.5	169,702	79.1	39,623	18.5
AZ	12,275	4.1	164,154	54.7	123,571	41.2
AR	5,103	4.5	62,415	55.6	44,832	39.9
CA	10,811	1.0	356,719	32.3	736,530	66.7
CO	9,807	5.1	86,055	45.0	95,208	49.8
CT	11,946	3.6	145,702	44.3	171,025	52.0
DE	4,337	1.5	94,258	32.5	191,175	66.0
DC	2,815	3.2	45,606	52.1	39,059	44.6
FL	12,165	3.1	189,135	47.8	194,250	49.1
GA	7,868	3.1	125,724	49.4	120,838	47.5
HI	7,516	6.8	36,259	32.6	67,555	60.7
ID	7,286	4.6	83,026	52.8	66,960	42.6
IL	5,646	2.9	96,307	48.9	95,147	48.3
IN	11,813	4.7	122,158	48.2	119,349	47.1
IA	8,907	7.5	54,763	46.1	55,160	46.4
KS	9,777	3.6	161,170	59.0	102,339	37.4
LA	6,703	2.5	108,654	40.3	154,350	57.2
ME	9,420	2.9	106,738	33.3	204,609	63.8
MD	17,526	4.3	196,060	48.0	194,804	47.7
MA	10,389	2.0	250,459	47.7	264,475	50.3
MI	9,598	4.1	126,957	54.1	98,225	41.8
MN	16,229	1.3	368,042	29.3	869,939	69.4
MS	4,233	2.3	84,534	45.6	96,539	52.1
MO	6,926	5.8	62,787	52.6	49,621	41.6
MT	5,913	4.0	57,796	39.1	84,161	56.9
NE	12,857	4.1	167,394	53.8	130,934	42.1

**Table 5B. Cell Phone Sample.
Categories of Eligibility by State (Cell Phone Only).**

	ELIG		INELIG		UNKELIG	
State*	N	%	N	%	N	%
NV	2,534	3.1	34,324	42.0	44,877	54.9
NH	3,961	6.8	27,493	47.4	26,566	45.8
NJ	11,152	2.8	172,875	44.1	208,073	53.1
NM	2,905	4.2	35,234	51.3	30,607	44.5
NY	22,665	3.2	338,115	47.0	357,990	49.8
NC	3,403	4.3	32,317	40.5	44,078	55.2
ND	6,070	6.6	44,614	48.9	40,636	44.5
OH	14,388	3.7	196,505	50.1	181,087	46.2
OK	6,719	4.5	78,886	53.3	62,352	42.1
OR	6,537	3.4	66,722	34.2	121,712	62.4
RI	6,954	5.2	56,553	42.4	69,783	52.4
SC	9,990	4.1	104,984	43.1	128,806	52.8
SD	5,842	2.0	158,097	54.4	126,496	43.6
TN	6,480	2.5	88,826	33.6	168,778	63.9
TX	10,142	3.3	150,082	48.2	151,236	48.6
UT	11,948	6.4	91,104	48.9	83,369	44.7
VT	7,760	5.1	76,880	50.8	66,590	44.0
VA	4,609	1.7	100,469	36.8	167,772	61.5
WA	27,438	8.5	134,434	41.5	161,678	50.0
WV	3,534	3.4	62,795	61.2	36,361	35.4
WI	9,837	1.1	260,075	30.0	596,998	68.9
WY	3,397	1.2	166,183	60.5	105,310	38.3
GU	1,692	4.1	7,931	19.0	32,125	76.9
PR	4,777	9.2	26,556	51.0	20,784	39.9
VI	2,472	3.2	54,414	70.9	19,854	25.9
Minimum	2,534	1.0	26,946	28.6	26,566	18.5
Maximum	27,438	8.5	368,042	79.1	869,939	69.4

***Table 5B. Cell Phone Sample.
Categories of Eligibility by State (Cell Phone Only).***

	ELIG		INELIG		UNKELIG	
State*	N	%	N	%	N	%
Mean	8,680	4.1	123,002	47.0	152,138	48.9
Median	7,516	3.8	100,469	47.7	105,310	48.4

*States listed in order by FIPS code. During 2023, Kentucky and Pennsylvania were unable to collect enough data to meet the minimum requirements to be included in this public data set.

Table 6. Response Rates for Landline and Cell Phone Samples

State*	Landline Response Rate	Cell Phone Response Rate	Combined Response Rate
AL	57.9	27.3	37.3
AK	53.0	67.1	63.1
AZ	51.3	46.7	48.1
AR	55.8	46.3	49.3
CA	55.6	26.2	42.1
CO	48.0	40.1	41.5
CT	44.4	36.1	37.0
DE	46.2	27.2	34.9
DC	47.5	43.3	44.6
FL	43.9	37.0	39.3
GA	39.7	37.4	38.2
HI	51.6	32.0	41.7
ID	66.5	48.4	52.3
IL	55.9	41.3	44.2
IN	46.3	40.1	42.1
IA	55.6	46.2	48.6
KS	59.0	53.0	54.8
LA	49.2	31.4	34.5
ME	62.1	31.5	51.2
MD	42.8	40.4	41.2
MA	49.0	40.5	42.0
MI	54.3	44.6	47.2
MN	56.1	24.8	31.7
MS	69.2	41.3	45.4
MO	63.1	47.1	53.2
MT	56.2	38.6	46.8

Table 6. Response Rates for Landline and Cell Phone Samples

State*	Landline Response Rate	Cell Phone Response Rate	Combined Response Rate
NE	58.0	48.8	51.2
NV	53.2	37.8	43.0
NH	57.6	47.1	53.3
NJ	39.6	33.1	34.5
NM	54.2	44.1	47.9
NY	37.0	34.7	35.0
NC	65.7	39.9	48.3
ND	46.7	43.9	44.6
OH	43.1	40.2	41.0
OK	64.4	48.2	52.5
OR	61.4	31.6	38.2
RI	45.0	37.0	38.5
SC	42.9	35.6	38.1
SD	71.0	48.5	58.1
TN	51.4	27.4	31.0
TX	43.0	37.6	40.1
UT	59.0	44.6	48.3
VT	55.4	46.1	48.1
VA	63.3	32.9	52.0
WA	56.1	41.9	45.0
WV	52.6	57.7	56.2
WI	52.1	25.8	38.2
WY	62.1	52.4	57.0
GU	30.4	17.1	21.7
PR	55.9	56.8	56.6
VI	64.6	60.5	62.3

Table 6. Response Rates for Landline and Cell Phone Samples

State*	Landline Response Rate	Cell Phone Response Rate	Combined Response Rate
Minimum	30.4	17.1	21.7
Maximum	71.0	67.1	63.1
Mean	53.2	40.5	44.9
Median	54.3	40.3	44.6

*States listed in order by FIPS code. During 2023, Kentucky and Pennsylvania were unable to collect enough data to meet the minimum requirements to be included in this public data set.

References

1. Pierannunzi C, Town M, Garvin W, Shaw F, Balluz L. Methodologic changes in the Behavioral Risk Factor Surveillance System in 2011 and potential effects on prevalence estimates. *MMWR*.2012; 61(22):410-413. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6122a3.htm>. Accessed 14 August 2024.
2. The American Association for Public Opinion Research. Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys (Revised 2023) [Standards-Definitions-10th-edition.pdf \(aapor.org\)](#) pp 86, 87. Accessed 14 August 2024.
3. Czajka JL, Beyler A. Declining Response Rates in Federal Surveys: Trends and Implications (2016). <https://aspe.hhs.gov/system/files/pdf/255531/Decliningresponserates.pdf>. p. viii. Accessed 13 August 2024.