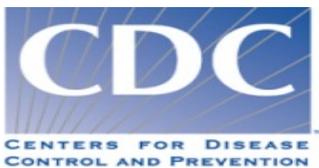


Behavioral Risk Factor Surveillance System

2013 Landline Telephone Survey Questionnaire Use of Data

(08/15/2014)



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Background

The addition of a cellular telephone survey to the Behavioral Risk Factor Surveillance System (BRFSS) has moved BRFSS data collection from a landline telephone survey to a dual-mode survey. The landline telephone survey and cellular telephone survey used very similar questionnaires. The landline telephone survey demographics section includes two questions on the number of landline telephone numbers which reach the household and two questions on respondent cellular telephone use. The landline telephone survey data collection method is similar to that of previous years. Interviewers used the landline telephone survey core questions with all respondents, and standardized optional modules were available for states to include by choice. The same optional modules were available for the cellular telephone survey.

The increased cost of collecting a cellular telephone interview--as well as the concern for reducing the cost burden on the cellular telephone respondent--prompted a few states to add optional modules only to the landline telephone survey. To assist in using the data collected only on the landline survey, BRFSS has provided an additional data set, along with an additional weighting variable, for use with these data. Please note the landline telephone survey data by itself should be analyzed with caution as there is potential for bias introduced to the sample due to the growing number of households only able to be reached by a cellular telephone.

Weighting the Landline Telephone Data

The 2013 BRFSS landline telephone survey data set contains data from all states and any optional module data that was asked as common modules on the landline telephone survey. The final weight variable to use for analysis of the landline data set is `_LANDWT`. When data are used without weights, each record counts the same as any other record. Implicit in such use are the assumptions that each record has an equal probability of being selected and that noncoverage and nonresponse are equal among all segments of the population. When deviations from these assumptions are large enough to affect the results obtained from a data set, then weighting each record appropriately can help to adjust for assumption violations. An additional (but conceptually unrelated) reason for weighting is to make the total number of cases equal to some desired number which, for state BRFSS data, is the number of people in the state who are aged 18 years and older. In the BRFSS, weighting serves as a blanket adjustment for noncoverage and nonresponse and forces the total number of cases to equal population estimates for each geographic region, which for the BRFSS is usually a state.

Below is a general description of the process reflecting the factors BRFSS took into account in weighting the 2013 BRFSS landline telephone data. When a factor does not apply, its value is set to one for calculation.

The raking weighting methodology is comprised of two sections: design weight and raking.

Design Weight = $STRWT * (1/NUMPHON2) * NUMADULT$

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The stratum weight accounts for differences in the basic probability of selection among strata (subsets of area code/prefix combinations). It is the inverse of the sampling fraction of each stratum. There is rarely a complete correspondence between strata, which BRFSS defines by subsets of area code/prefix combinations, and regions, which BRFSS defines by the boundaries of government entities.

BRFSS calculates the stratum weight (**STRWT**) using the following elements:

- Number of available records (**NRECSTR**) and the number of records selected (**NRECSEL**) within each geographic strata and density strata;
- Geographic strata (**GEOSTR**), which may be the entire state or a geographic subset such as counties, census tracts, etc.; and
- Density strata (**DENSTR**), indicating the density of the phone numbers for a given block of numbers as listed or not listed.

Within each **GEOSTR*DENSTR** combination, BRFSS calculates the stratum weight (**STRWT**) from the average of the **NRECSTR** and the sum of all sample records used to produce the **NRECSEL**. The stratum weight is equal to **NRECSTR / NRECSEL**.

➤ **1/NUMPHON2** is the inverse of the number of residential telephone numbers in the respondent's household.

➤ **NUMADULT** is the number of adults 18 years and older in the respondent's household.

FINAL WEIGHT is the design weight BRFSS rakes to 7 margins (age group by gender, race/ethnicity, education, marital status, tenure, gender by race/ethnicity, age group by race/ethnicity). If BRFSS includes geographic regions, it also includes four additional margins (region, region by age group, region by gender, region by race/ethnicity) are included.

LANDWT is the final weight assigned to each respondent.

BRFSS uses weight trimming to increase the value of extremely low weights and decrease the value of extremely high weights. The objective of weight trimming is to reduce errors in the outcome estimates caused by unusually high or low weights in some categories.

Calculation of a Child Weight

BRFSS calculates the design weight for the child weighting from the stratum weight times the inverse of the number of telephones in the household, which BRFSS then multiplies by the number of children:

Child Design Weight = STRWT * (1/NUMPHON2) * CHILDREN

CHILDWT is the child design weight that BRFSS rakes to 4 margins including age by gender, race/ethnicity, gender by race/ethnicity, age by race/ethnicity.

CLANDWT is the weight BRFSS assigns for each child interview.

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Calculation of a Household Weight

BRFSS calculates the design weight for the household weighting from the stratum weight times the inverse of the number of telephones in the household.

Household Design Weight = STRWT * (1/NUMPHON2)

HOUSEWT = STRWT * (1/ NUMPHON2) is raked to the Number of Persons in a Household, Number of Adults in a Household, and Number of Children in a Household.

_HHOLDWT is the weight BRFSS assigns to each household.

Analysis of the Landline Data

Unweighted data on the BRFSS represent the actual responses of each respondent, before anyone makes any adjustment for variation in the respondents' probability of selection, disproportionate selection of population subgroups relative to the state's population distribution, or nonresponse. Weighted BRFSS data represent results that BRFSS has adjusted to compensate for these issues. Regardless of state sample design, use of the final weight in analysis is necessary if users are to make generalizations from the sample to the population.

Users conduct an analysis of the optional module data collected on the landline survey using the additional data set available for 2013. Users can take this data set and generate estimates for the variables contained in optional modules. To obtain estimates for the adult population within a state, researchers should use the weighting variable representing the final weight (**_LANDWT**). To obtain estimates for the non-adult population within a state, researchers should use the weighting variable representing the final weight (**_CLANDWT**) for the optional modules specific to the child respondent selected in the household.. The list below shows the optional modules each state included in the landline telephone survey data set.

2013 Landline Telephone Survey Questionnaire States and Modules:

<u>Modules By State</u>	
Alabama	Colorectal Cancer Screening, Diabetes, Social Context, Health Care Access, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes
Alaska	Diabetes, Health Care Access, Pre-Diabetes, Sugar Drinks
Arizona	Colorectal Cancer Screening, Diabetes, Reactions to Race, Health Care Access, Cardiovascular Health, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes, Sugar Drinks
Arkansas	Diabetes, Social Context, Cardiovascular Health, Pre-Diabetes, Sodium or Salt-Related Behavior
California	Health Care Access, Random Child Selection, Childhood Asthma Prevalence

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<u>Modules By State</u>	
Connecticut	Diabetes, Social Context, Health Care Access, Influenza, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes, Adult Human Papilloma Virus (HPV), Sugar Drinks, Sodium or Salt-Related Behavior
Delaware	Colorectal Cancer Screening, Diabetes, Health Care Access, Prostate Cancer Screening, Pre-Diabetes, Prostate Cancer Screening Decision Making Module
District of Columbia	Diabetes, Social Context, Health Care Access, Cardiovascular Health, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes, Sugar Drinks, Sodium or Salt-Related Behavior
Florida	Colorectal Cancer Screening, Diabetes, Health Care Access, Cardiovascular Health, Pre-Diabetes, Breast Cancer and Cervical Cancer Screening, Industry and Occupation
Georgia	Colorectal Cancer Screening, Diabetes, Social Context, Health Care Access, Adult Asthma History, Cardiovascular Health, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes, Breast Cancer and Cervical Cancer Screening
Hawaii	Colorectal Cancer Screening, Diabetes, Prostate Cancer Screening, Cardiovascular Health, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes, Adult Human Papilloma Virus (HPV), Prostate Cancer Screening Decision Making Module, Sodium or Salt-Related Behavior, Breast Cancer and Cervical Cancer Screening
Idaho	Health Care Access, Pre-Diabetes
Illinois	Diabetes, Pre-Diabetes, Industry and Occupation
Indiana	Diabetes, Health Care Access, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes
Iowa	Diabetes, Health Care Access, Influenza, Cardiovascular Health, Sodium or Salt-Related Behavior
Kansas	Random Child Selection, Childhood Asthma Prevalence
Kentucky	Diabetes, Health Care Access, Arthritis Management, Pre-Diabetes, Sugar Drinks, Sodium or Salt-Related Behavior
Louisiana	Diabetes, Social Context, Health Care Access, Adult Asthma History, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes, Sugar Drinks, Industry and Occupation
Maine	Pre-Diabetes
Maryland	Health Care Access, Random Child Selection, Childhood Asthma Prevalence, Sugar Drinks, Sodium or Salt-Related Behavior, Industry and Occupation
Massachusetts	Colorectal Cancer Screening, Diabetes, Health Care Access, Prostate Cancer Screening, Influenza, Pre-Diabetes, Adult Human Papilloma Virus (HPV), Prostate Cancer Screening Decision Making Module, Industry and Occupation
Michigan	Colorectal Cancer Screening, Health Care Access, Random Child Selection, Childhood Asthma Prevalence, Industry and Occupation
Minnesota	Diabetes, Social Context, Health Care Access, Arthritis Management, Cardiovascular Health, Mental Illness & Stigma, Pre-Diabetes, Sugar Drinks, Sodium or Salt-Related Behavior, Industry and Occupation
Mississippi	Influenza, Arthritis Management, Cardiovascular Health, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes, Adult Human Papilloma Virus (HPV), Emotional Support and Life Satisfaction, Sugar Drinks, Sodium or Salt-Related Behavior, Industry and Occupation
Missouri	Diabetes, Arthritis Management, Cardiovascular Health, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes, Sodium or Salt-Related Behavior

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<u>Modules By State</u>	
Montana	Diabetes, Health Care Access, Random Child Selection, Childhood Asthma Prevalence, Industry and Occupation
Nebraska	Colorectal Cancer Screening, Health Care Access, Random Child Selection, Childhood Asthma Prevalence
Nevada	Colorectal Cancer Screening, Diabetes, Social Context, Health Care Access, Random Child Selection, Childhood Asthma Prevalence, Mental Illness & Stigma, Pre-Diabetes
New Hampshire	Colorectal Cancer Screening, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes, Industry and Occupation
New Jersey	Diabetes, Health Care Access, Random Child Selection, Childhood Asthma Prevalence
New Mexico	Diabetes, Social Context, Health Care Access, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes, Industry and Occupation
New York	Health Care Access
North Carolina	Diabetes, Health Care Access, Pre-Diabetes
North Dakota	Diabetes, Health Care Access, Cardiovascular Health, Pre-Diabetes, Sodium or Salt-Related Behavior, Industry and Occupation
Ohio	Health Care Access
Oklahoma	Random Child Selection, Childhood Asthma Prevalence
Oregon	Diabetes, Health Care Access, Cardiovascular Health, Random Child Selection, Childhood Asthma Prevalence, Industry and Occupation
Pennsylvania	Diabetes, Arthritis Management, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes
Rhode Island	Health Care Access, Influenza, Random Child Selection, Childhood Asthma Prevalence, Adult Human Papilloma Virus (HPV)
South Carolina	Diabetes, Health Care Access, Cardiovascular Health, Random Child Selection, Pre-Diabetes, Sugar Drinks
South Dakota	Random Child Selection, Pre-Diabetes
Tennessee	Diabetes, Health Care Access, Influenza, Arthritis Management, Cardiovascular Health, Random Child Selection, Childhood Asthma Prevalence, Mental Illness & Stigma, Pre-Diabetes, Emotional Support and Life Satisfaction, Sodium or Salt-Related Behavior, Breast Cancer and Cervical Cancer Screening
Texas	Random Child Selection, Childhood Asthma Prevalence
Utah	Health Care Access, Arthritis Management, Random Child Selection, Childhood Asthma Prevalence, Sugar Drinks, Industry and Occupation
Vermont	Health Care Access, Random Child Selection, Childhood Asthma Prevalence, Sugar Drinks
Virginia	Diabetes, Social Context, Health Care Access, Pre-Diabetes, Sodium or Salt-Related Behavior
Washington	Colorectal Cancer Screening, Health Care Access, Cardiovascular Health, Random Child Selection, Childhood Asthma Prevalence, Mental Illness & Stigma, Pre-Diabetes, Sodium or Salt-Related Behavior
West Virginia	Diabetes, Health Care Access, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes, Sugar Drinks, Sodium or Salt-Related Behavior

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Modules By State	
Wisconsin	Diabetes, Health Care Access, Cardiovascular Health, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes, Sugar Drinks, Sodium or Salt-Related Behavior, Industry and Occupation
Guam	Diabetes, Pre-Diabetes
Puerto Rico	Diabetes, Health Care Access, Random Child Selection, Childhood Asthma Prevalence, Pre-Diabetes, Sodium or Salt-Related Behavior

States By Module	
Module	
Adult Asthma History	Georgia, Louisiana
Adult Human Papilloma Virus (HPV)	Connecticut, Hawaii, Massachusetts, Mississippi, Rhode Island
Arthritis Management	Kentucky, Minnesota, Mississippi, Missouri, Pennsylvania, Tennessee, Utah
Breast Cancer and Cervical Cancer Screening	Florida, Georgia, Hawaii, Tennessee
Cardiovascular Health	Arizona, Arkansas, District of Columbia, Florida, Georgia, Hawaii, Iowa, Minnesota, Mississippi, Missouri, North Dakota, Oregon, South Carolina, Tennessee, Washington, Wisconsin
Childhood Asthma Prevalence	Alabama, Arizona, California, Connecticut, District of Columbia, Georgia, Hawaii, Indiana, Kansas, Louisiana, Maryland, Michigan, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, Oklahoma, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, Puerto Rico
Colorectal Cancer Screening	Alabama, Arizona, Delaware, Florida, Georgia, Hawaii, Massachusetts, Michigan, Nebraska, Nevada, New Hampshire, Washington
Diabetes	Alabama, Alaska, Arizona, Arkansas, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Illinois, Indiana, Iowa, Kentucky, Louisiana, Massachusetts, Minnesota, Missouri, Montana, Nevada, New Jersey, New Mexico, North Carolina, North Dakota, Oregon, Pennsylvania, South Carolina, Tennessee, Virginia, West Virginia, Wisconsin, Guam, Puerto Rico
Emotional Support and Life Satisfaction	Mississippi, Tennessee
Health Care Access	Alabama, Alaska, Arizona, California, Connecticut, Delaware, District of Columbia, Florida, Georgia, Idaho, Indiana, Iowa, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oregon, Rhode Island, South Carolina, Tennessee, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Puerto Rico
Industry and Occupation	Florida, Illinois, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Montana, New Hampshire, New Mexico, North Dakota, Oregon, Utah, Wisconsin
Influenza	Connecticut, Iowa, Massachusetts, Mississippi, Rhode Island, Tennessee
Mental Illness & Stigma	Minnesota, Nevada, Tennessee, Washington

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States By Module	
Module	
Pre-Diabetes	Alabama, Alaska, Arizona, Arkansas, Connecticut, Delaware, District of Columbia, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Kentucky, Louisiana, Maine, Massachusetts, Minnesota, Mississippi, Missouri, Nevada, New Hampshire, New Mexico, North Carolina, North Dakota, Pennsylvania, South Carolina, South Dakota, Tennessee, Virginia, Washington, West Virginia, Wisconsin, Guam, Puerto Rico
Prostate Cancer Screening	Delaware, Hawaii, Massachusetts
Prostate Cancer Screening Decision Making Module	Delaware, Hawaii, Massachusetts
Random Child Selection	Alabama, Arizona, California, Connecticut, District of Columbia, Georgia, Hawaii, Indiana, Kansas, Louisiana, Maryland, Michigan, Mississippi, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Washington, West Virginia, Wisconsin, Puerto Rico
Reactions to Race	Arizona
Social Context	Alabama, Arkansas, Connecticut, District of Columbia, Georgia, Louisiana, Minnesota, Nevada, New Mexico, Virginia
Sodium or Salt-Related Behavior	Arkansas, Connecticut, District of Columbia, Hawaii, Iowa, Kentucky, Maryland, Minnesota, Mississippi, Missouri, North Dakota, Tennessee, Virginia, Washington, West Virginia, Wisconsin, Puerto Rico
Sugar Drinks	Alaska, Arizona, Connecticut, District of Columbia, Kentucky, Louisiana, Maryland, Minnesota, Mississippi, South Carolina, Utah, Vermont, West Virginia, Wisconsin