

# Behavioral Risk Factor Surveillance System

## Module Data for Analysis for 2014 BRFSS

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## Overview

The Behavioral Risk Factor Surveillance System (BRFSS) is a state-based telephone survey that includes information on a number of health outcomes, risk behaviors, use of preventive services, and chronic conditions for noninstitutionalized adult residents of states and selected US territories. Since 2011, BRFSS has used updated procedures for data collection, structure, and weighting methodology so the traditional landline telephone-based data set could include data from participants using cellular telephones. The BRFSS includes a core set of questions and multiple optional modules that focus on specific health issues. Not all modules are collected by all of the states, and states may opt to include module data on portions of their surveys. Core questions are included on all interviews. Researchers using BRFSS data should conduct analyses with complex sampling procedures; they also should appropriately stratify weighted data in their work. Weighting can improve selection probabilities and noncoverage among segments of the population.

Researchers conducting an analysis of variables from the core-only section should use the variable `_LLCPWT` for weighting. The BRFSS has created this document to guide users analyzing variables from 2014 BRFSS modules or combinations of module and core variables, or both. The 2014 BRFSS data sets include split versions of module data that respondents provided by cellular telephone. Data users should note that new weighting procedures are likely to affect trend lines when they compare the BRFSS data collected before and after 2011; because of these changes, users are advised NOT to make direct comparisons with pre-2011 data, and instead, begin new trend lines with that year.

**Data users should become familiar with the information presented in this document prior to performing analyses. Learn more about the changes to the 2014 BRFSS.**

## Using BRFSS Data from Multiple Data Sets

BRFSS has grouped the 2014 data into eight data sets:

- 2014 BRFSS questionnaire data (combined landline telephone and cellular telephone).
- 2014 BRFSS combined landline telephone and cellular telephone multiple version questionnaire version 1 data (landline telephone and cellular telephone version 1).
- 2014 BRFSS combined landline telephone and cellular telephone multiple version questionnaire version 2 data (landline telephone and cellular telephone version 2).
- 2014 BRFSS combined landline telephone and cellular telephone multiple version questionnaire version 3 data (landline telephone and cellular telephone version 3).
- 2014 BRFSS landline telephone data (landline telephone only).
- 2014 BRFSS landline telephone multiple version questionnaire version 1 data (landline telephone version 1).
- 2014 BRFSS landline telephone multiple version questionnaire version 2 data (landline telephone version 2).
- 2014 BRFSS landline telephone multiple version questionnaire version 3 data (landline telephone version 3).

Individual states may have chosen to use a number of optional modules, depending on each state's needs. Although core questions are always collected on both landline telephone and cellular telephones, states may have collected module data by landline telephone and/or cellular telephone. In 2014, some states also collected module data by combined landline telephone and cellular telephone. By splitting the modules, the states divided their samples and used different modules in the subsamples that were distinguished by the version of the surveys. Some modules may appear only on versions of questionnaires given to landline telephone respondents. Modules that appear in each version of a state's questionnaire are called common modules. Each state that collected common modules did so on all its versions of combined landline telephone and cellular telephone or landline telephone-only data.

Before using optional module data, users must identify the states that collected the data of interest and determine which questionnaire version the state used, if any. A list of modules, by state, is available at [BRFSS Modules](#).

As a first step to conducting research using the BRFSS module data, users should understand

that the data set they need is based on the location of the questions in the core, in optional modules collected by landline telephone, or in optional modules collected by landline telephone and cellular telephone.

Users should keep in mind that there are eight possible data sets from which they will need to include data:

- Researchers use the combined landline telephone and cellular telephone data if the questions are exclusively from the core section or common modules asked on both the landline survey and cellular telephone survey.
- Researchers use the landline telephone survey data if states had asked the questions only in the common version of the landline telephone survey.
- Researchers use the combined landline telephone and cellular telephone data sets from states collecting multiple version questionnaires (up to 3) and landline telephone data sets from states collecting multiple version questionnaires (up to 3).

In all cases, researchers should use the variable `_STSTR` for stratification, and `_PSU` or `SEQNO` should be used for the cluster variable in complex sampling analyses. The following table displays the description of the data, names of the data sets, and the variable names of the final weight.

Data description	Data set name	Final weight variable name
Combined landline telephone and cellular telephone	LLCP2014	<code>_LLCPWT</code>
Combined landline telephone and cellular telephone Version 1	LLCP14V1	<code>_LCPWTV1</code>
Combined landline telephone and cellular telephone Version 2	LLCP14V2	<code>_LCPWTV2</code>
Combined landline telephone and cellular telephone Version 3	LLCP14V3	<code>_LCPWTV3</code>
Landline telephone only	LAND2014	<code>_LANDWT</code>
Landline telephone only Version 1	LAND14V1	<code>_LNDWTV1</code>
Landline telephone only Version 2	LAND14V2	<code>_LNDWTV2</code>
Landline telephone only Version 3	LAND14V3	<code>_LNDWTV3</code>

## Examples of Preparing 2014 BRFSS Module Data for Analysis

Because of the complex nature of state-based data collection processes, users may have to create a data set that fits their research needs. The following examples illustrate how to prepare module data for analysis when states have collected module data in a variety of ways.

Before the analysis, users should always go through all documents for the given data year and double-check state FIPS codes in each data set to avoid duplication.

### Example 1: Cancer Survivorship Module

The following example uses the Cancer Survivorship Module to demonstrate how to combine

and reweight data from multiple data sets for analysis. This module is used as an example because several questionnaire versions were used by states to collect the data. The data was collected either as a common module in the combined landline telephone and cellular telephone surveys or landline telephone-only survey; or by splitting the sample and offering the module on one of the multiple versions of the survey in the combined landline telephone and cellular telephone surveys or landline telephone-only survey. The module tables were modified in 2014 to bring more useful information together. BRFSS created a new table by combining names of modules, states, names of the data set, names of the weight variable from the corresponding data sets, and the description of the data sets. The table is listed as module by state and state by module. If users want to analyze variables from certain modules, they need to search the module-by-state list.

1. Search Cancer Survivorship under the module-by-state list (Page 3).

Six states used this module from combined landline and cell phone data. They are Alaska (State FIPS code: 2), Iowa (State FIPS code: 19), Mississippi (State FIPS code: 28), Missouri (State FIPS code: 29), Nebraska (State FIPS code: 31), Wisconsin (State FIPS code: 55). One must extract the data of the 6 states from LLC2014. Ohio (State FIPS code: 39) used this module from combined landline and cell phone data with questionnaire version 1; therefore, one also must extract the Ohio data from the data set LLC14V1.

2. Obtain data sets.

To download the landline telephone and cellular telephone data set (LLC2014): Go to the [data webpage](#) and choose the 2014 data set. From there, please read all the 2014 documents including the [overview](#), [codebook](#), and the [module list](#). The data set is available in ASCII and SAS transport format files. A record layout, format syntax, and SAS code are included to read the raw data. The webpage also provides the link to access 2014 BRFSS landline telephone data or click on the links below to find the needed landline files.

To download the landline telephone and cellular telephone data set with questionnaire version 1

Go to the combined landline and cellular telephone multiple version questionnaire module data webpage to download multiple-version landline telephone data. There are 3 separate SAS data sets corresponding to version 1, version 2, and version 3. Choose Version 1: LLC14V1.

Generate a new and uniform final weight variable from each of the data sets and combine data into a working data set. This step will require users to

1. Keep all the states that collect the module in each of the data sets.
2. Rename the corresponding weight variable to a consistent weight variable.
3. Combine all the data sets into one data set that contains the consistent weight variable.

Details are shown in the SAS syntax below.

### SAS Code Example:

```
/*Example SAS code*/
*extract states from landline and cell phone combined data;
data llcp; *observation number=52,871;
*originally downloaded data selecting states that collected data using
cancer survivorship module from combined landline and cell phone data
for common module;
set in.llcp2014 (where=(_state in (2,19,28,29,31,55)));
*state FIPS code:
2(Alaska),19(Iowa),28(Mississippi),29(Missouri),31(Nebraska),
55(Wisconsin);
*rename final weight variable to be consistent across new data sets;
rename _llcpwt=_finalwt;
run;

*extract states from combined landline and cell phone data, multiple
versions;
*multiple version 1;
data llcpv1; *observation number=7,426;
*originally downloaded data selecting states that collected data for the
cancer survivorship Module from combined landline and cell phone data,
multiple versions;
set in.llcp14v1 (where=(_state in (39))); *state FIPS code: 39(Ohio);
*rename final weight variable to be consistent across new data sets;
rename _lcpwtv1=_finalwt;
run;

*combine 2 data sets together;
data cansurv; *observation number=60,297;
set llcp llcpv1;
run;
```

### Example 2: Alcohol Screening and Brief Intervention Module

The example below uses the Alcohol Screening and Brief Intervention Module to

demonstrate how to combine and reweight data from multiple data sets. This module was selected for illustration because it covers multiple questionnaire versions. In 2014, no state split the sample and offered the module on one or more versions of the surveys in combined landline and cellular telephone or landline telephone-only data sets. Researchers wanting to conduct this type of module analysis should consult the module-analysis instructions from a previous year when this data collection strategy was used.

1. Search Alcohol Screening and Brief Intervention under the module-by-state list (Page 2).

Twelve states used this module from the combined landline and cell phone data set: California (State FIPS code: 6), Connecticut (State FIPS code: 9), the District of Columbia (State FIPS code: 11), Hawaii (State FIPS code: 15), Kentucky (State FIPS code: 21), Minnesota (State FIPS code: 27), Montana (State FIPS code: 30), New Mexico (State FIPS code: 35), Oregon (State FIPS code: 41), Texas (State FIPS code: 48), Washington (State FIPS code: 53), and Wisconsin (State FIPS code: 55); One must extract the data of the 12 states from the data set LLC2014. Kansas (State FIPS code: 20) used this module from combined landline and cell phone data questionnaire version 1; therefore, one must extract the data from Kansas from LLC14V1. Indiana (State FIPS code: 18), Nebraska (State FIPS code: 31), and New York (State FIPS code: 36) collected data with this module from the combined landline and cell phone data questionnaire version 2; therefore, one must extract the data of those 3 states from the data set LLC14V2. Michigan (State FIPS code: 26) used this module with the combined landline and cell phone data questionnaire version 3; therefore, one must extract the Michigan data from LLC14V3. Florida (State FIPS code: 12) used this module from landline only data with questionnaire version 2; therefore, one needs to extract the Florida data from LAND14V2. Massachusetts (State FIPS code: 25) used this module from the landline only data set with questionnaire version 3, so one needs to extract the Massachusetts data from the data set LAND14V3.

Obtain data sets:

To download the landline telephone and cellular telephone data set (LLC2014):

Go to the [data webpage](#) and choose the 2014 data set. From there, please read all the 2014 documents including the [overview](#), [codebook](#), and the [module list](#). The data set is available in ASCII and SAS transport format files. A record layout, format syntax, and SAS code are included to read the raw data. The webpage also provides the link to access 2014 BRFSS landline telephone data or click on the Web links below to find the needed landline files.

To download the landline telephone and cellular telephone data set with questionnaire versions 1, 2, and 3:

- Go to the combined landline and cellular telephone multiple version questionnaire

module data webpage to download multiple-version landline telephone data. There are 3 separate SAS datasets corresponding to version 1, version 2, and version 3.

Choose Version 1: LLCP14V1, Version 2: LLCP14V2, and Version 3: LLCP14V3.

- Go to the landline only webpage to download multiple-version landline telephone data. There are 3 separate SAS data sets corresponding to version 1, version 2, and version 3.

Choose Version 2: LAND14V2, and Version 3: LAND14V3.

Generate a new and uniform final weight variable from each of the data sets and combine data into a working data set. This step will require users to

- keep all the states that collect the module in each of the data sets,
- rename the corresponding weight variable to a consistent weight variable,
- combine all the data sets into one data set that contains the consistent weight variable.

Details are shown in the SAS syntax on the next page.

## Example SAS code:

```
/*Example SAS code*/
*extract states from landline and cell phone combined data;
data llcp; *observation number=100,086;
*originally downloaded data selecting states that collected data using
Alcohol Screening and Prevention module from combined landline and cell phone data
for common module;
set in.llcp2014 (where=(_state in (6,9,11,15,21,27,30,35,41,48,53,55)));
*state FIPS code:
6(California),9(Connecticut),11(District of Columbia),15(Hawaii),21(Kentucky),
27(Minnesota),30(Montana),35(New Mexico),41(Oregon),48(Texas),53(Washington),
55(Wisconsin);
*rename final weight variable to be consistent across new data sets;
rename _llcpwt=_finalwt;
run;

*extract states from combined landline and cell phone data, multiple versions;
*multiple version 1;
data llcpv1; *observation number=6,743;
*originally downloaded data selecting states that collected data for the
Alcohol Screening and Prevention Module from combined landline and cell phone data,
multiple versions;
set in.llcp14v1 (where=(_state in (20))); *state FIPS code: 20(Kansas);
*rename final weight variable to be consistent across new data sets;
rename _lcpwtv1=_finalwt;
run;

*extract states from combined landline and cell phone data, multiple versions;
*multiple version 2;
data llcpv2; *observation number=20,116;
*originally downloaded data selecting states that collected data for the
Alcohol Screening and Prevention Module from combined landline and cell phone data,
multiple versions;
set in.llcp14v2 (where=(_state in (18,31,36))); *state FIPS code: 18(Indiana),
31(Nebraska), 36(New York);
*rename final weight variable to be consistent across new data sets;
rename _lcpwtv2=_finalwt;
run;

*extract states from combined landline and cell phone data, multiple versions;
*multiple version 3;
data llcpv3; *observation number=2,798;
*originally downloaded data selecting states that collected data for the
Alcohol Screening and Prevention Module from combined landline and cell phone data,
multiple versions;
set in.llcp14v3 (where=(_state in (26))); *state FIPS code: 26(Michigan);
*rename final weight variable to be consistent across new data sets;
rename _lcpwtv3=_finalwt;
run;

*extract states from landline only data, multiple versions;
*multiple version 2;
data landv2; *observation number=3,431;
*originally downloaded data selecting states that collected data for the
Alcohol Screening and Prevention Module from combined landline and cell phone data,
multiple versions;
```

```
set in.land14v2 (where=(state in (12))); *state FIPS code: 12(Florida);
*rename final weight variable to be consistent across new data sets;
rename landwtv2=finalwt;
run;

*extract states from landline only data, multiple versions;
*multiple version 3;
data landv3; *observation number=3,591;
*originally downloaded data selecting states that collected data for the
Alcohol Screening and Prevention Module from combined landline and cell phone data,
multiple versions;
set in.land14v3 (where=(state in (25))); *state FIPS code: 25(Massachusetts);
*rename final weight variable to be consistent across new data sets;
rename landwtv3=finalwt;
run;

*combine 6 data sets together;
data asbi; *observation number=136,765;
set llcp llcpv1 llcpv2 llcpv3 landv2 landv3;
run;
```