2005 SMART BRFSS County Methodology

2005 Selected Metropolitan/Micropolitan Area Risk Trends from the BRFSS Creation of Metropolitan-level weights

The Behavioral Risk Factor Surveillance System (BRFSS) Selected Metropolitan/Micropolitan Area Risk Trends (SMART) is a documented and verified subset of the 2005 BRFSS, which has been produced to provide some local area estimates. These local areas are identified counties within metropolitan or micropolitan statistical areas (MMSA) as defined by the Office of Management and Budget. The data set was produced by adding new analysis weights designed to correspond to the 2005 population estimates for each eligible county within a selected MMSA. The additional weights were post-stratified to the county-level. The process by which these new weights were obtained is detailed in Appendix C, "Weight Class Collapsing Rules."

Selected Areas

Typically, BRFSS data are used to produce state-level estimates. However, for the SMART project, BRFSS data were used to produce small area-level estimates for MMSAs as defined by the Bureau of the Census. On June 6, 2003, the Office of Management and Budget (OMB) issued new definitions for metropolitan statistical areas, micropolitan statistical areas, and metropolitan divisions. OMB periodically updates the list of MMSAs. The list of areas used for this analysis can be found at http://www.whitehouse.gov/omb/bulletins/fy05/b05-02_appendix.pdf. For more information about MMSAs, please visit http://www.census.gov/population/www/estimates/metroarea.html. A respondent was associated with a particular MMSA on the basis of their county code. Missing county codes were imputed from a value included in the purchased telephone sample that represents the county most likely associated with the telephone number. There were 153 MMSAs that met the analysis criteria for the 2005 data year. From within the 153 MMSAs, county-level estimates have been produced from the BRFSS data for 232 counties that have met the weighting criteria (Appendix C) for the 2005 data year.

Appendix A: List of Variables added to the 2005 Data

Data Documentation for the 13 Variables Added to the 2005 BRFSS Data

ADJCNTY   County-level post-stratification weight. This factor is multiplied by the design weight (_WT2) to get the final County-level weight (_CNTYWT).

AGE_CNTY   Age categories used to set up the initial weighting classes for the county-level weights.
        1 – 18–24
        2 – 25–34
        3 – 35–44
        4 – 45–54
        5 – 55–64
        6 – 65+

AGE_C_F   Age categories used in the final weighting classes for the county-level weights.
        1 – 18–24
        2 – 25–34
        3 – 35–44
        4 – 45–54
        5 – 55–64
        6 – 65+
        7 – 18–34
        8 – 35–54
        9 – 55+
        10 – 18–44
        11 – 45+
        12 – 18–54
        14 – 45–64
        19 – 35+

RACE_CNT   Race categories used to set up the initial weighting classes for the county-level weights.
        0 – Race not used
        1 – White, non-Hispanic
        2 – Nonwhite or Hispanic

RACE_C_F   Race categories used in the final weighting classes for the county-level weights.
        0 – Race not used
        1 – White, non-Hispanic
        2 – Nonwhite or Hispanic

SEX_CNTY   Sex categories used to set up the initial and final weighting classes for the county-level weights (weight classes are never collapsed across sex).
        1 – Male
        2 – Female

_CNTY – FIPS   County code of the county where the respondent lives. This variable is equivalent to CTYCODE, except for respondents with a CTYCODE of "777" or "999". The county code for these respondents was imputed based on information provided by BSB.

_CNTYNAM   County name of the county where the respondent lives.

_CNTYWT   The new county-level weight. This is the weight to use when generating county-level estimates for questions that were asked of the whole sample.

Appendix B: List of the 232 counties that have COUNTY-level Weights in 2005 BRFSS Data

Metropolitan/Micropolitan Statistical Area or Metropolitan Division Codes and Names

State Name	FIPS State	FIPS County	County Name
Alabama	1	73	Jefferson County
Alaska	2	20	Anchorage Municipality
Alaska	2	90	Fairbanks North Star Borough
Arizona	4	13	Maricopa County
Arizona	4	19	Pima County
Arizona	4	21	Pinal County
Arizona	4	27	Yuma County
Arkansas	5	7	Benton County
Arkansas	5	119	Pulaski County
Arkansas	5	143	Washington County
California	6	1	Alameda County
California	6	37	Los Angeles County
California	6	59	Orange County
California	6	65	Riverside County
California	6	71	San Bernardino County
California	6	73	San Diego County
Colorado	8	1	Adams County
Colorado	8	5	Arapahoe County
Colorado	8	31	Denver County
Colorado	8	35	Douglas County
Colorado	8	41	El Paso County
Colorado	8	59	Jefferson County
Connecticut	9	1	Fairfield County
Connecticut	9	3	Hartford County
Connecticut	9	9	New Haven County
Delaware	10	1	Kent County
Delaware	10	3	New Castle County
Delaware	10	5	Sussex County
District of Columbia	11	1	District of Columbia

State Name	FIPS State	FIPS County	County Name
Florida	12	11	Broward County
Florida	12	57	Hillsborough County
Florida	12	86	Miami-Dade County
Florida	12	95	Orange County
Florida	12	99	Palm Beach County
Florida	12	103	Pinellas County
Hawaii	15	1	Hawaii County
Hawaii	15	3	Honolulu County
Hawaii	15	7	Kauai County
Hawaii	15	9	Maui County
Idaho	16	1	Ada County
Idaho	16	19	Bonneville County
Idaho	16	27	Canyon County
Idaho	16	55	Kootenai County
Idaho	16	69	Nez Perce County
Illinois	17	31	Cook County
Illinois	17	43	DuPage County
Illinois	17	97	Lake County
Indiana	18	89	Lake County
Indiana	18	97	Marion County
Iowa	19	153	Polk County
Kansas	20	91	Johnson County
Kansas	20	173	Sedgwick County
Kansas	20	177	Shawnee County
Kansas	20	209	Wyandotte County
Kentucky	21	111	Jefferson County
Louisiana	22	71	Orleans Parish
Maine	23	5	Cumberland County
Maine	23	31	York County
Maryland	24	3	Anne Arundel County
Maryland	24	5	Baltimore County
Maryland	24	15	Cecil County
Maryland	24	17	Charles County

State Name	FIPS State	FIPS County	County Name
Maryland	24	21	Frederick County
Maryland	24	25	Harford County
Maryland	24	27	Howard County
Maryland	24	31	Montgomery County
Maryland	24	33	Prince George's County
Maryland	24	43	Washington County
Maryland	24	510	Baltimore city
Massachusetts	25	5	Bristol County
Massachusetts	25	9	Essex County
Massachusetts	25	13	Hampden County
Massachusetts	25	17	Middlesex County
Massachusetts	25	21	Norfolk County
Massachusetts	25	23	Plymouth County
Massachusetts	25	25	Suffolk County
Massachusetts	25	27	Worcester County
Michigan	26	49	Genesee County
Michigan	26	65	Ingham County
Michigan	26	81	Kent County
Michigan	26	99	Macomb County
Michigan	26	125	Oakland County
Michigan	26	163	Wayne County
Minnesota	27	53	Hennepin County
Minnesota	27	123	Ramsey County
Mississippi	28	49	Hinds County
Missouri	29	95	Jackson County
Missouri	29	189	St. Louis County
Missouri	29	510	St. Louis city
Montana	30	111	Yellowstone County
Nebraska	31	55	Douglas County
Nebraska	31	109	Lancaster County
Nebraska	31	153	Sarpy County
Nebraska	31	157	Scotts Bluff County
Nevada	32	3	Clark County

State Name	FIPS State	FIPS County	County Name
Nevada	32	31	Washoe County
New Hampshire	33	5	Cheshire County
New Hampshire	33	9	Grafton County
New Hampshire	33	11	Hillsborough County
New Hampshire	33	13	Merrimack County
New Hampshire	33	15	Rockingham County
New Hampshire	33	17	Strafford County
New Jersey	34	1	Atlantic County
New Jersey	34	3	Bergen County
New Jersey	34	5	Burlington County
New Jersey	34	7	Camden County
New Jersey	34	9	Cape May County
New Jersey	34	13	Essex County
New Jersey	34	15	Gloucester County
New Jersey	34	17	Hudson County
New Jersey	34	19	Hunterdon County
New Jersey	34	21	Mercer County
New Jersey	34	23	Middlesex County
New Jersey	34	25	Monmouth County
New Jersey	34	27	Morris County
New Jersey	34	29	Ocean County
New Jersey	34	31	Passaic County
New Jersey	34	35	Somerset County
New Jersey	34	37	Sussex County
New Jersey	34	39	Union County
New Jersey	34	41	Warren County
New Mexico	35	1	Bernalillo County
New Mexico	35	13	Dona Ana County
New Mexico	35	43	Sandoval County
New Mexico	35	49	Santa Fe County
New York	36	5	Bronx County
New York	36	29	Erie County
New York	36	47	Kings County

State Name	FIPS State	FIPS County	County Name
New York	36	55	Monroe County
New York	36	59	Nassau County
New York	36	61	New York County
New York	36	81	Queens County
New York	36	103	Suffolk County
New York	36	119	Westchester County
North Carolina	37	21	Buncombe County
North Carolina	37	25	Cabarrus County
North Carolina	37	35	Catawba County
North Carolina	37	51	Cumberland County
North Carolina	37	63	Durham County
North Carolina	37	67	Forsyth County
North Carolina	37	71	Gaston County
North Carolina	37	81	Guilford County
North Carolina	37	101	Johnston County
North Carolina	37	119	Mecklenburg County
North Carolina	37	129	New Hanover County
North Carolina	37	135	Orange County
North Carolina	37	151	Randolph County
North Carolina	37	179	Union County
North Carolina	37	183	Wake County
North Dakota	38	15	Burleigh County
North Dakota	38	17	Cass County
Ohio	39	35	Cuyahoga County
Ohio	39	49	Franklin County
Ohio	39	61	Hamilton County
Oklahoma	40	19	Carter County
Oklahoma	40	21	Cherokee County
Oklahoma	40	27	Cleveland County
Oklahoma	40	31	Comanche County
Oklahoma	40	47	Garfield County
Oklahoma	40	109	Oklahoma County
Oklahoma	40	115	Ottawa County

State Name	FIPS State	FIPS County	County Name
Oklahoma	40	121	Pittsburg County
Oklahoma	40	125	Pottawatomie County
Oklahoma	40	131	Rogers County
Oklahoma	40	135	Sequoyah County
Oklahoma	40	143	Tulsa County
Oklahoma	40	145	Wagoner County
Oklahoma	40	147	Washington County
Oregon	41	5	Clackamas County
Oregon	41	29	Jackson County
Oregon	41	39	Lane County
Oregon	41	47	Marion County
Oregon	41	51	Multnomah County
Oregon	41	67	Washington County
Oregon	41	71	Yamhill County
Pennsylvania	42	3	Allegheny County
Pennsylvania	42	17	Bucks County
Pennsylvania	42	45	Delaware County
Pennsylvania	42	51	Fayette County
Pennsylvania	42	79	Luzerne County
Pennsylvania	42	91	Montgomery County
Pennsylvania	42	101	Philadelphia County
Pennsylvania	42	129	Westmoreland County
Rhode Island	44	3	Kent County
Rhode Island	44	5	Newport County
Rhode Island	44	7	Providence County
Rhode Island	44	9	Washington County
South Carolina	45	3	Aiken County
South Carolina	45	15	Berkeley County
South Carolina	45	19	Charleston County
South Carolina	45	45	Greenville County
South Carolina	45	63	Lexington County
South Carolina	45	79	Richland County
South Carolina	45	83	Spartanburg County

State Name	FIPS State	FIPS County	County Name
South Carolina	45	91	York County
South Dakota	46	99	Minnehaha County
South Dakota	46	103	Pennington County
Tennessee	47	37	Davidson County
Tennessee	47	157	Shelby County
Texas	48	29	Bexar County
Texas	48	113	Dallas County
Texas	48	141	El Paso County
Texas	48	201	Harris County
Texas	48	439	Tarrant County
Texas	48	453	Travis County
Utah	49	11	Davis County
Utah	49	35	Salt Lake County
Utah	49	45	Tooele County
Utah	49	49	Utah County
Utah	49	57	Weber County
Vermont	50	7	Chittenden County
Vermont	50	11	Franklin County
Vermont	50	17	Orange County
Vermont	50	21	Rutland County
Vermont	50	23	Washington County
Vermont	50	27	Windsor County
Washington	53	5	Benton County
Washington	53	7	Chelan County
Washington	53	11	Clark County
Washington	53	17	Douglas County
Washington	53	21	Franklin County
Washington	53	33	King County
Washington	53	35	Kitsap County
Washington	53	53	Pierce County
Washington	53	61	Snohomish County
Washington	53	63	Spokane County
Washington	53	67	Thurston County

State Name	FIPS State	FIPS County	County Name
Washington	53	77	Yakima County
West Virginia	54	39	Kanawha County
Wisconsin	55	79	Milwaukee County
Wyoming	56	21	Laramie County
Wyoming	56	25	Natrona County

Appendix C: Weight Class Collapsing Rules

County-level Weighting Methodology

Respondents were assigned to a county on the basis of their FIPS county codes. Missing county codes were imputed from a value included in the purchased telephone sample that represents the county most likely associated with the telephone number before the respondent identifies a county during data collection.

All respondents in counties were then assigned to age, race, and sex categories. If a respondent's age was missing, it was imputed by using the variable _IMPAGE available in the BRFSS public-use 2005 data file. If a respondent's race was missing, it was imputed by using the majority race for the county in which the respondent lives. The six age categories were 18-24, 25-34, 35-44, 45-54, 55-64, and 65+. The two race categories were white, non-Hispanic, and nonwhite or Hispanic.

Within each county, respondents were assigned to weighting classes on the basis of the age, race, and sex categories described above. Some states do not use race in post-stratification. For the county in states that do not use race, only the age and sex groups were used to set up weighting classes. For the county in states that do use race, all three groups were used to set up weighting classes. Thus, the counties that use race had 24 initial weighting classes and counties that do not use race had 12 initial weighting classes.

Weighting classes with fewer than 19 sample members were collapsed in accordance with the following rules:

1. For those counties that used race in post-stratification, the race categories within a sex category collapse if at least 80% of the age categories in that race /sex cross-classification (i.e. 5 of 6 the age categories) have fewer than 19 members. In counties that used race to create the initial weighting classes, the number of weighting classes was thus reduced from 24 to 12 if race was collapsed for both sexes and from 24 to 18 if race was collapsed for only one sex.

2. Collapse the two youngest age categories in any age/sex or age/sex/race weighing class if either contains fewer than 19 members. Do the same for the two middle and the two oldest age categories in each remaining weighting class.

3. If either of the age/sex or age/sex/race categories have fewer than 19 members, then the age categories were collapsed until there were 19 members in some combination of the age categories listed in the variable AGE_C_F.

4. Do not collapse weighting classes across sex.

5. Do not include a county in the reweighting that still has weighting classes with fewer than 19 sample members after all collapsing rules have been applied. These counties will be excluded from the 2005 SMART BRFSS.

There were 154 MMSAs that had at least 500 respondents in the 2005 BRFSS and at least 19 sample members in all final weighting classes. There are 232 counties within the 154 MMSAs that had at least 19 sample members in all final weighting classes. (See Appendix B in the Data Documentation for a list of these counties.) Only the respondents in these counties were given a county-level weight. To calculate the new county-level weight, we applied a post-stratification adjustment factor to the design weight (_WT2) and created the adjustment factor by taking the ratio of the total population over the sum of the design weights for each weighting class within

each county. The new county-level weight (_CNTYWT) should be used to generate estimates in these 232 counties.

Example SUDAAN Code:
For example, to estimate for DeKalb County, GA (_STATE=13, _CNTY=89). The following
SAS/SUDAAN code that could be used to do this:

```
data xxxx;
set yyyy;

if (_STATE=13 & _CNTY=89) then DUMMY=1;
run;

proc sort data=xxxx;
by _STSTR SEQNO;
run;

proc descript data=xxxx filetype=sas design=wr;
nest _STSTR SEQNO / missunit;
weight _CNTYWT;
subpopn DUMMY=1 / name="DeKalb County, GA";
var (your analysis variable);
catlevel (the level of your analysis variable for which you want an estimate);
run;
```