Behavioral Risk Factor

Surveillance System

Use of 2009 Multiple Version Questionnaire Data

(Version #2 - Revised: 04/26/2010)

The Centers for Disease Control and Prevention's (CDC) Behavioral Surveillance Branch is providing limited support for the landline survey data collection of multiple (three) questionnaire versions within the guidelines outlined below in 2009. The 2009 core instrument must be asked without any changes in all versions of the questionnaire. The optional modules can be included on all versions or exclusively on a single version, but must be asked during all 12 months of data collection. An additional weighting variable for use with data collected from questions asked on one version of the questionnaire will be provided in a separate version specific data set.

There were 23 states that conducted multiple questionnaire version surveys in 2009. Eight states attempted to collect three versions. Three of these states did not obtain enough completes for each version to meet the minimum effective sample size of 2,500 complete interviews. The state of Washington did not collect enough data for one of the three versions. Washington's version 3 questionnaire module data is not included in the version 3 aggregate data file. Ohio did not collect enough data for versions 1 and 2. The data from common modules across these two versions were combined to form a version 1 data set for Ohio with enough complete interviews to produce a version 1 weight. Ohio has this combined data included in the version 1 aggregate data file. Oregon did not collect enough data for the three versions they attempted. The data from common modules across Oregon's version 2 and version 3 questionnaires were combined to produce a version 2 data set for Oregon. Oregon has this combined data included in the version 2 aggregate data file.

To reduce confusion about which weight to use with which variable, three additional data sets are available for 2009. These data sets contain the data from the states that conducted multiple version questionnaires and used optional modules on these versions in 2009. The list below shows the optional modules included in the data sets by state. There are four subheadings to identify how a module was used by the state. "Common" indicates the module was used on all versions, "Survey 1" indicates modules used only on version 1, "Survey 2" indicates modules used only on version 2, "Survey 3" indicates modules used only on version 3.

2009 Multi Questionnaire states and modules:

California	**Common:** Random Child Selection, Childhood Asthma Prevalence **Survey 1:** Diabetes, Arthritis Management, Actions to Control High Blood Pressure, Prediabetes, Inadequate Sleep, Cancer Survivorship, Tetanus Diphtheria (Adults) **Survey 2:** Social Context, Mental Illness and Stigma, Inadequate Sleep
Colorado	**Survey 1:** Diabetes, Adult Asthma History, Prediabetes
Hawaii	**Common:** Social Context, Women's Health, Random Child Selection, Childhood Asthma Prevalence, Mental Illness and Stigma, Inadequate Sleep, Childhood Immunization **Survey 1:** Colorectal Cancer Screening, Diabetes, Prostate Cancer Screening, Prediabetes **Survey 2:** Heart Attack and Stroke, Actions to Control High Blood Pressure
Iowa	**Common:** Diabetes, Visual Impairment and Access to Eye Care, Cardiovascular Health, Actions to Control High Blood Pressure, Random Child Selection, Childhood Asthma Prevalence, Prediabetes, Shingles, Tetanus Diphtheria (Adolescents) **Survey 1:** Tetanus Diphtheria (Adults) **Survey 2:** Heart Attack and Stroke
Kansas	**Common:** Arthritis Management, Random Child Selection, Childhood Asthma Prevalence, Childhood Immunization **Survey 1:** Diabetes, Visual Impairment and Access to Eye Care, Actions to Control High Blood Pressure, Prediabetes **Survey 2:** Social Context, Mental Illness and Stigma, Inadequate Sleep, Tetanus Diphtheria (Adults), Shingles, Child Human Papilloma Virus (HPV), Tetanus Diphtheria (Adolescents), Adult Human Papilloma Virus (HPV)

Maine	**Survey 1:** Colorectal Cancer Screening, Diabetes, Heart Attack and Stroke, Cardiovascular Health, Actions to Control High Blood Pressure, Prediabetes **Survey 2:** Random Child Selection, Childhood Asthma Prevalence
Maryland	**Common:** Random Child Selection, Childhood Asthma Prevalence **Survey 1:** Diabetes, Heart Attack and Stroke, Actions to Control High Blood Pressure **Survey 2:** Visual Impairment and Access to Eye Care, Inadequate Sleep, Cancer Survivorship
Massachusetts	**Common:** Diabetes, Prediabetes, Tetanus Diphtheria (Adults), Shingles, Adult Human Papilloma Virus (HPV) **Survey 1:** Heart Attack and Stroke, Cardiovascular Health, Actions to Control High Blood Pressure, Random Child Selection, Childhood Asthma Prevalence **Survey 3:** Colorectal Cancer Screening, Visual Impairment and Access to Eye Care, Mental Illness and Stigma, Cancer Survivorship
Michigan	**Common:** Arthritis Management, Random Child Selection, Childhood Asthma Prevalence **Survey 1:** Heart Attack and Stroke, Cardiovascular Health, Actions to Control High Blood Pressure, Mental Illness and Stigma **Survey 2:** Diabetes **Survey 3:** Diabetes
Nebraska	**Common:** Reactions to Race, Random Child Selection, Childhood Asthma Prevalence **Survey 1:** Diabetes, Social Context, Mental Illness and Stigma, Prediabetes, Tetanus Diphtheria (Adolescents), Adult Human Papilloma Virus (HPV) **Survey 2:** Colorectal Cancer Screening, Heart Attack and Stroke, Prostate Cancer Screening, Cardiovascular Health, Actions to Control High Blood Pressure **Survey 3:** Colorectal Cancer Screening, Visual Impairment and Access to Eye Care, Inadequate Sleep, Cancer Survivorship
New Jersey	**Common:** Diabetes, Random Child Selection, Childhood Asthma Prevalence **Survey 1:** Colorectal Cancer Screening, Social Context, Women's Health, Prostate Cancer Screening, Cancer Survivorship
New Mexico	**Common:** Diabetes, Prediabetes **Survey 1:** Social Context, Arthritis Management, Random Child Selection, Childhood Asthma Prevalence, Adverse Childhood Experience, Childhood Immunization
New York	**Common:** Random Child Selection, Childhood Asthma Prevalence **Survey 1:** Heart Attack and Stroke, Actions to Control High Blood Pressure, Inadequate Sleep **Survey 2:** Diabetes, Prediabetes
Ohio	**Common:** Diabetes, Cardiovascular Health, Actions to Control High Blood Pressure, Prediabetes **Survey 1:** Heart Attack and Stroke, Visual Impairment and Access to Eye Care, Random Child Selection, Childhood Asthma Prevalence, Childhood Immunization
Oklahoma	**Survey 1:** Heart Attack and Stroke, Cardiovascular Health, Actions to Control High Blood Pressure **Survey 2:** Colorectal Cancer Screening, Social Context, Adult Asthma History, Random Child Selection, Childhood Asthma Prevalence, Prediabetes, Cancer Survivorship
Oregon	**Survey 2:** Cardiovascular Health, Childhood Asthma Prevalence, Diabetes, Random Child Selection
Rhode Island	**Common:** Random Child Selection, Childhood Asthma Prevalence **Survey 1:** Diabetes, Heart Attack and Stroke, Actions to Control High Blood Pressure, Prediabetes

Tennessee	**Common:** Diabetes, Women's Health, Arthritis Management, Cardiovascular Health, Actions to Control High Blood Pressure, Prediabetes **Survey 1:** Shingles, Adverse Childhood Experience **Survey 2:** Heart Attack and Stroke, Mental Illness and Stigma, Tetanus Diphtheria (Adults)
Texas	**Common:** Diabetes, Random Child Selection, Childhood Asthma Prevalence, Prediabetes, Child Human Papilloma Virus (HPV), Tetanus Diphtheria (Adolescents), Childhood Immunization **Survey 1:** Heart Attack and Stroke, Cardiovascular Health, Actions to Control High Blood Pressure **Survey 2:** Healthy Days (Symptoms), Inadequate Sleep, Tetanus Diphtheria (Adults), Shingles, Adult Human Papilloma Virus (HPV)
Utah	**Common:** Diabetes, Random Child Selection, Childhood Asthma Prevalence, Prediabetes **Survey 2:** Heart Attack and Stroke, Arthritis Management, Cardiovascular Health, Actions to Control High Blood Pressure, Childhood Immunization **Survey 3:** Arthritis Management, Cardiovascular Health, Actions to Control High Blood Pressure, Mental Illness and Stigma, Childhood Immunization
Washington	**Common:** Diabetes, Random Child Selection, Childhood Asthma Prevalence, Prediabetes **Survey 1:** Heart Attack and Stroke, Actions to Control High Blood Pressure, Mental Illness and Stigma, Carbon Monoxide Detectors and Gas Powered Generators, Adverse Childhood Experience

The analysis of the multiple questionnaire data requires some careful consideration of which records to use with the appropriate weight. For the core questions and optional modules asked on the “Common” questionnaire the _FINALWT variable should be used to produce estimates. For optional modules used only on “Survey 1” the _FINALQ1 variable should be used to produce estimates for records with variable QSTVER = 1. For optional modules used only on “Survey 2” the _FINALQ2 variable should be used to produce estimates for records with variable QSTVER = 2. For optional modules used only on “Survey 3” the _FINALQ3 variable should be used to produce estimates for records with variable QSTVER = 3.

New Jersey collected the Social Context Module on questionnaire version 1. The response codes for questions 2 (SCNTMONY) and 3 (SCNTMEAL) were not asked consistently across the year. The incorrect question responses were coded to reflect the appropriate categories of “5. Never” and “8. Not applicable,” as needed. The data collected in August through December for these two questions was not submitted by the data collector.

Minimum sample size: American Statistical Association Working Group has recommended that states using multiple versions of the questionnaire have an effective sample size of at least 2,500 for producing a statewide estimate for each version of the questionnaire. This implies a total sample greater than or equal to 2,500 multiplied by the number of questionnaire versions used in 2009. For example, to conduct three versions in 2009 would require a minimum sample size of at least 7,500 resulting in an effective sample size of 2,500 for each version.

Number of regions for weighting the data (_REGION): When considering multiple versions of the questionnaire, state questionnaire planners should be aware that weighting the data by more than one geographic _REGION may be problematic. The potential for a small sample size when sub-setting by _REGION will reduce the number of weighting categories because more collapsing across the weighting cells will be required. The implication of more collapsing is the weights provided for one version may not be as well distributed across the post-stratification cells if the number of completes available in a region is too small.

Use of Optional Modules: To process the data accordingly an accurate list of modules used by version must be provided. This list determines the modules expected by the editing programs and reports. If any module questions are altered, deleted, or not asked of each eligible respondent the entire year, the revised module must be treated as state-added questions and should not be included in the list of optional modules. Regardless of asking optional modules on one or both versions of questionnaire, module data will be stored in the same locations. Modules should be asked throughout all twelve months of the survey.

Sample: The telephone sample exported from CATI will need to have a field called QSTVER to identify the questionnaire version. This can be created by CATI programming or in the sample file prior to importing into CATI. The field is set in column 181 (PATH) in the sample file from Genesys. The default value is for the landline sample '0' to indicate only one questionnaire version. To assign sample to a specific version this field can be modified when loading the sample.

The first approach requires some preparation before loading the sample, but simplifies the data collection. Before importing the sample, replicates can be randomly assigned to each of the questionnaires. The questionnaire value (1 for Questionnaire 1, and 2 for questionnaire 2, 3 for 3) can be added to the end of the sample file using SAS, SPSS or another software that has randomization functions. A user-defined field called QSTVER is created to read questionnaire versions. The import layout of the sample file will need to include the user defined QSTVER field. The CATI uses the information from this field to determine which questionnaire to present. This method would also allow calculation of response rates for each questionnaire version. This approach requires a whole number multiple, of the number of questionnaire versions, of replicates for each geographic stratum.

The second approach is to use the CATI programming to control the assignment of the questionnaire. This allows different versions of the questionnaire to be assigned within the same replicate. The QSTVER can also be assigned within the CATI programming. For the first version set the QSTVER to a "1," the second version should have QSTVER set to "2," and so on. If the CATI programming approach is used, you may want to consider using quotas each month to limit the number of completes/partial completes for each version of the questionnaire. With this approach, sample management may be an issue particularly if the sample is geographically stratified. Calculation of a Response Rate for each version is not possible.

Weights: An individual weight for each version of the questionnaire was produced if the state was able to collect at least the minimum effective sample size of 2,500 complete interviews. The _FINALWT variable should be used with the core questions and any modules asked on all versions. The version 1 weight (_FINALQ1) should be used with analysis of variables specific to questionnaire version 1. The version 2 weight (_FINALQ2) should be used with analysis of variables specific to questionnaire version 2. The version 3 weight (_FINALQ3) should be used with analysis of variables specific to questionnaire version 3.

The questionnaire version specific weights are produced in the same manner as the full state data file, with the subset of records identified as the given version. For example, the version 1 questionnaire data from Colorado was post-stratified to the race/ethnicity/gender categories used for the full state questionnaire. However, due to the reduced sample size of the version 1 sample, five age categories were used for the version 1 post-stratification weighting in comparison to the full seven age categories used for the full state questionnaire.

A separate aggregate data file for each questionnaire version has been produced to assist with analysis of module data for the public use web site and programs within CDC. The questionnaire version data file will contain the module data associated with the version and the corresponding weight.