B. Collection of Information Employing Statistical Methods

1. Respondent Universe and Sampling Methods

The target geographic area for inclusion in the DBS Gulf Coast Survey was selected by determining the counties within the states of Florida, Louisiana, Alabama, and Mississippi which are within 32 miles of areas closed to fishing as a result of the Deepwater Horizon Event. The table below indicates the counties within the selected area and the 2009 population estimates for each county. The total population residing within the targeted area is 3.5 million.

2009 POPULATION ESTIMATE BY COUNTY OF TARGETED AREA	
	2009 Population Estimate
Louisiana	
Jefferson Parish	443,342
St. Tammany Parish	231,495
Tangipahoa Parish	118,688
Lafourche Parish	93,682
Iberia Parish	75,101
Vermilion Parish	56,141
St. Mary Parish	50,815
St. Bernard Parish	40,655
Jefferson Davis Parish	31,097
Assumption Parish	22,874
Plaquemines Parish	20,942
Calcasieu Parish	187,554
Cameron Parish	6,584
Terrebonne Parish	109,291
St. Charles Parish	51,611
Orleans Parish	354,850
Mississippi	
Hancock County	40,962
Harrison County	181,191
Jackson County	132,922
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Alabama	
Mobile County	411,721
Baldwin County	179,878
Florida	
Escambia County	303,343
Santa Rosa County	151,759
Walton County	55,105

Okaloosa County	178,473
TOTAL TARGETED AREA POPULATION	3,530,076

The DBS Gulf Coast Survey will collect data from a random sample of telephone households which include land line telephones. This is accomplished by selecting a random sample of phone numbers. The sampled phone numbers are called and screened to determine whether the numbers dialed are residential numbers and, for those that are, survey eligible individuals residing in the housing unit are identified.

The DBS Gulf Coast Survey will use a list-assisted method to improve efficiency and reduce unproductive calling. Samples of telephone numbers purchased using this method have been prescreened to ensure that they are residential phone numbers. Dedicated FAX and computer lines, ported cell phone numbers, business numbers and other ineligible numbers have been identified prior to implementation of the survey. The list assisted design reduces the number of unproductive screening calls while maintaining sampling weights that are roughly equal.

In order to create the list assisted frame, sampling frames of 100-number banks are created from all known area codes and telephone exchanges, then matched against published residential telephone directories, and a count of the number of listed residential numbers is determined for each 100-number bank. The sampling frame is then restricted to *1+ bank*—that is, 100-number banks that contain at least one listed household phone number. An unclustered sample of all telephone numbers contained in the sampling frame of 1+ banks is then drawn and interviewed.

Stratification will be used to select a random sample of phone numbers from the 1+ banks. Because residency rates and cooperation rates are higher for listed phone numbers (those present in a directory of household telephone numbers) than they are for unlisted numbers, the cost per completed interview for a listed number is less than for an unlisted number. Hence, stratifying phone numbers by listed status and then sampling listed numbers at a higher rate than unlisted numbers allows one to complete more cases subject to a fixed survey budget compared to sampling listed and unlisted phone numbers at the same rate. This stratification approach is used in the BRFSS Disproportionate Stratified Sampling (DSS) design, in which listed numbers are sampled at a rate 1.5 times greater than unlisted numbers.

The sample designer for the DBS Gulf Coast Survey will then use the specified number of completed interviews to predict how many telephone numbers to select from the sampling frame of 1+ banks. In this case the targeted number of completes per month is 2,500 (12 X 2,500 = 30,000). In order to reduce bias, small subsamples are released into the working sample in groups (also know as replicates) of 30. This process will continue until the desired number of completed interviews is achieved.

2. Procedures for the Collection of Information

The DBS Gulf Coast Survey questionnaire has been developed by CDC in cooperation with the states included in the targeted geographic areas. The questionnaire is submitted with this document. The DBS will provide the sample to the vendor as well as Computer Assisted Telephone Interview

(CATI) programming using Ci3 software. The sample will be purchased by CDC from a vendor selected among those responding to an RFQ currently in process.

The vendor will receive the sample from CDC and conduct interviews during each month in accordance with a prescribed protocol, and incorporate surveillance results into CATI computer files. The vendor must ask all survey questions without modification. Systematic, unobtrusive electronic monitoring should be a routine and integral part of monthly survey procedures for all interviewers. The vendor will edit and correct completed interviews each month prior to submission of data to the DBS. The vendor will also submit monthly disposition files on calling attempts and outcomes. The following standard BRFSS protocols will be maintained by the vendor during the implementation of the DBS Gulf Coast Survey:

- An eligible household is a housing unit that has a separate entrance, where occupants eat separately from other persons on the property, and that is occupied by its members as their principal or secondary place of residence. Noneligible households are (1) vacation homes not occupied by household members for more than 30 days per year, (2) group homes, and (3) institutions.
- Eligible household members include all related adults (aged 18 years or older), unrelated adults, roomers, and domestic workers who consider the household their home, even though they may not be home at the time of the call. Household members do not include adult family members who are currently living elsewhere.
- Proxy interviews are not conducted within the BRFSS. Individual respondents are randomly selected from all adults aged 18 years and older living in a household and are interviewed in accordance with BRFSS protocol.
- An interview is considered complete if data are collected for age, race, and sex. If values on age or race are not entered, imputed values will be generated and used only to assign post-stratification weights.
- Unless electronic monitoring of interviewers is being routinely conducted, a 5% random sample of each month's interviews must be called back to verify selected responses for quality assurance.
- Eligible persons who initially provide a soft refusal to be interviewed will be contacted at least one additional time and given the opportunity to be interviewed. Preferably, this second contact will be made by a supervisor or a different interviewer.
- Call attempts on all sample pieces should be completed during the calendar month of the sample selection. However, if there are unresolved sample pieces remaining without the required call-backs at the end of the month, calls should continue until each sample piece can be given a final disposition.

DBS will weight data monthly according to county-specific population estimates. The DBS Gulf Coast Survey will not include advance letters, respondent incentives, and/or other modes of respondent contact other than RDD telephone interviews. Appointments with respondents may be made by interviewers during the calling process, but advance interviews will not be established prior to calling.

3. Methods to Maximize Response Rates and Deal with Nonresponse

Response rates for the 2009 BRFSS in Mississippi, Alabama, Louisiana and Florida are presented in

the table below. It is anticipated that response rates for the DBS Gulf Coast Survey will be within the ranges of the BRFSS in these areas.

State	RDD Response Rate (CASRO)
Florida	50.7
Louisiana	51.9
Mississippi	65.1
Alabama	52.7

Nonresponse may be a result of two sources: Unit nonresponse, in which an eligible respondent and/or respondent household is not included, and item nonresponse, in which data are missing for one or more variables for respondents who complete other portions of the survey. The Gulf Coast Survey will address unit nonresponse through weighting of respondents to known characteristics of the target populations.

Weighting will be accomplished in the standard procedures in place for the BRFSS. The formulae for the weighting process are described in the section below:

FINALWT = STRWT * 1 OVER NPH * NAD * Raking

FINALWT *is the final weight assigned to each respondent.*

STRWT *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 almost never a complete correspondence between strata, which are defined by subsets of area code/prefix combinations, and regions, which are defined by the boundaries of government entities.*

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

NAD *is the number of adults in the respondent's household.*

Raking *represents process of iterative weighting.*

Raking weighting adjusts for non-coverage and non-response and adjusts for different probabilities of selection by region, where applicable. The DBS will use raking weighting for the post stratification process. Once data are collected, weighting is completed using Iterative Proportional Fitting or Raking Weighting. Raking weighting methodology adjusts the data so that groups which are underrepresented in the sample can be accurately represented in the final dataset. Raking methodologies allow for the introduction of additional demographic characteristics and more accurately match sample distributions to known demographic characteristics of the populations. The use of Raking reduces nonresponse bias and has been shown to reduce error within estimates. Raking is completed by adjusting for one demographic variable (or dimension) at a time. Iterations of weighting continue until weights across all demographic characteristics are similar to those of the population. For example, when weighting by age and gender, weights would first be conducted for gender groups, then those estimates would be adjusted by age groups. This process would continue in an iterative process until all group proportions in the sample match to a specified margin of the

total population. Raking includes categories of age by gender, detailed race and ethnicity groups, education levels, marital status, regions within states, gender by race/ethnicity, and age group by race/ethnicity.

Item nonresponse will be address through the use of imputation. Imputation is used to infer missing demographic information. Based on the missing at random assumption, the hot-deck method is often used. In this method, a missing value is imputed using a randomly selected respondent value within an appropriately defined imputation cell. The imputation cells are defined using cross-classified groups of survey respondent units by categorical variables without missing values. Under the assumption of the missing at random nonresponse mechanism, the hot-deck method produces unbiased imputed data.

4. Tests of Procedures or Methods to be Undertaken

The BRFSS questionnaire is thoroughly field tested. All questions taken from the BRFSS have been used over many years and previously cognitively tested. Other questions on the DBS Gulf Coast Survey are taken from standardized scales which have been nationally normed or from other surveys used by disaster mental health experts in previous studies (e.g. LSU, Mailman School of Public Health, etc). Minor modifications in some questions have been made in order to define time periods for respondents.

The DBS will adopt established protocols of the BRFSS which has been in continuous implementation for over 30 years. These protocols have been adapted over time to meet the needs of the data collection process and maximize response rates while minimizing respondent burden.

5. Individuals Consulted on Statistical Aspects and Individuals Collecting and/or Analyzing Data

CDC personnel will be responsible for all data analysis. The vendor for data collection will be selected following receipt of funding for the DBS Gulf Coast Survey.