B. STATISTICAL METHODS

B.1   Respondent Universe and Sampling Methods

Poisonings can occur from a wide variety of common natural and manufactured substances found in most households. As a result, all households are at risk for unintentional poisonings and are, therefore, potential users of poison center services. The *Poison Help* General Population Survey is a random-digit-dial (RDD) and cellular telephone survey covering the 50 States and the District of Columbia. Households will be randomly sampled, and a screening interview will be administered to a household respondent 18 years of age or older. Respondents will have the option of completing the survey in both English and Spanish.

The sampling method to be used for the *Poison Help* General Population Survey is a dual frame sample design that combines cell phone sample with list-assisted methods and has been used widely for similar data collections in recent years. This dual frame methodology will be used because of the proportion of Americans who rely solely or mostly on cell phones for their telephone service. Sampling both landline and cell phone numbers helps to ensure that the data collection represent all adults who have access to either.

In a list-assisted sample, a simple random sample of telephone numbers is selected from all telephone numbers that are in 100-banks (the set of numbers with the same first 8 digits) in which there is at least one residential telephone number listed in the White Pages directory. This is called the listed stratum. Telephone numbers in the listed stratum include both listed and unlisted numbers and both residential and nonresidential numbers.

The cell phone sample is drawn through systematic sampling from dedicated cell phone banks of 100 contiguous numbers and shared service banks with no directory-listed landline numbers (to ensure that the cell phone sample does not include banks that are also included in the landline sample). The sample frame is designed to be representative both geographically and by large and small wireless carriers.

Both the landline and cell samples will be released for interviewing in replicates, which are small random samples of the larger sample to maximize response rate (expected to be at least net at least 38 percent). Using replicates to control the release of telephone numbers ensures that the complete call

procedures are followed for the entire sample (which leads to higher response rates). The use of replicates will also ensure that the regional distribution of numbers called is appropriate.

The number of telephone numbers to be sampled has been determined by incorporating information on estimated residency rates, precision requirements, and response rates. For the landline sample, it is anticipated that approximately 35 percent of telephone numbers sampled within the listed stratum are expected to be residential and the balance are expected to be nonworking or business telephone numbers. For the cell phone sampling, it is expected that 53 percent of the telephone numbers are expected to be working personal cell phone numbers and the balance will be non-assigned / working numbers. We expect to obtain a 25 percent response rate to the landline sample and 13 percent to the cell phone sample. Based on the sampling parameters described, 26,000 landline households are needed to complete 1,340 screening interviews and 10,798 cell phone respondents to screen 744 interviews. We expect to conduct interviews in 96 percent of households who meet the screening eligibility requirements and that 2,000 *Poison Help* General Population Survey interviews will be completed.

Table B-1. Planned sample size for the *Poison Help* General Population Survey

Category	Target population
Number of households in U.S..	116,716,292[1]
Sample of landline telephone numbers...	26,000
Residential landline telephone numbers in sample..	9,100
Landline screened households...	1,340
Sample of cell phone telephone numbers..	10,798
Active personal cell phone respondents in sample..	5723
Cell phone screened households...	744
Completed interviews...	**2,000**

[1] U.S. Census Bureau, 2010 Census

B.2 Information Collection Procedures

B.2.1 Statistical Methodology for Sample Selection

The sampling frame for the *Poison Help* General Population Survey will be comprised from the frame of all telephone numbers in 100-banks with one or more listed telephone numbers for the first quarter of 2011 and all wireless banks currently in use by major and minor cell phone carriers.

Before telephone calling begins, interviewers will receive extensive training on household selection procedures and the survey instrument. When interviewers reach someone on a landline phone, they will ask to speak to the youngest male age 18 years of age or older. If there is no eligible male, interviewers will then ask to speak to the youngest female age 18 years of age or older. This method is used to improve participation of the younger age groups who are often more difficult to interview because they are less likely to be home and/or answer the telephone. For the cell phone sampling, it is assumed that the cell phone is a personal device, so no effort is made to give other household members a chance to be interviewed. Instead, interviewers ask if the person who answers the cell phone is 18 years of age or older to determine if they are eligible to complete the survey.

B.2.2   Estimation Procedure

The estimation procedure will start with creation of base weights for the household, which is the inverse of the probability of selection of the telephone number. An adjustment will be made for oversampling prefixes with high minority concentrations. A non-response adjustment will also be made. The final stage of weighting will be a post-stratification or raking adjustment of the weights to Census Bureau estimates of household totals by household demographic characteristics. National household-level estimates may be produced using these final, raked household weights.

B.2.3   Degree of Accuracy

The estimates produced by the *Poison Help* General Population Survey will provide valuable information for assessing areas in which the campaign might be improved and allow for comparison with future evaluation activities. The estimates are not intended for publication, nor will they be used to make programmatic budgetary decisions.

A key estimate for the *Poison Help* General Population Survey will be whether households are aware of the national, toll-free number to obtain poison exposure or prevention information or if they cite a local number instead. For example, suppose that 10 percent of the households were aware of the national toll-free number and 5 percent were aware only of a local number to reach their poison center. The 90 percent confidence level for the difference of 5 percent between the two estimates is 3.7 percent to 6.3 percent. Thus the sample sizes of 2,000 for the *Poison Help* General Population Survey yield the required degree of accuracy for comparing these estimates.

**B.2.4	Specialized Sampling Procedures**

No specialized sampling procedures are required to conduct the *Poison Help* General Population Survey.

**B.2.5	Periodic Data Collection Cycles**

HRSA plans to conduct the *Poison Help* General Population Survey every five years beginning with calendar year 2011.

**B.3	Methods to Maximize Response Rates**

Efforts to ensure a high response rate involve several strategies. These include methods of contacting and screening households and obtaining cooperation from potential respondents.

Close attention will be paid to fundamentals, such as staff recruitment, specific training techniques, the development of outreach materials and strategies, daily monitoring of interviewers, and the use of established respondent cooperation techniques.

Interviewers with previous records of high productivity on research studies will be selected where possible. Interviewers who are highly motivated, personable, with a positive "can-do" attitude will also be selected. Interviewers are trained to ask interview questions in a natural manner. Because effective contact of respondents is based on careful attention to screening, interviewers also are trained on contact protocols, including spreading calls across different days of the week and different times of the day to increase the likelihood of reaching the appropriate person.

Among other strategies, cooperation is encouraged through steps including establishing a toll-free telephone number for respondent questions. Interviewers are instructed to introduce the study and, if they meet with questions or objections, to implement refusal avoidance methods and answers. One strategy, for instance, is to provide interviewers with a Frequently Asked Questions (FAQs) sheet (see Appendix E for a copy of FAQs). Up to 7 attempts will be made to contact a potential respondent (including reaching a busy line or answering machine and no-answer calls).

B.4   **Test of Procedures**

Pretesting of the *Poison Help* General Population Survey instrument will be conducted following development of the draft survey. The purpose of this testing will be to assess respondent comprehension and interpretation, and therefore, the clarity of questionnaire items for members of the populations to be surveyed. Intensive interviews will be administered to nine participants for each survey. Probes will be used to assess participants' understanding of terms used in the questions. This procedure ensures insofar as possible that items are salient and unambiguous. Feedback on draft questionnaires from pretesting will be used to develop the final questionnaire (see Appendix B).

B.5   **Statistical Consultants**

Statistical experts have not been employed to review the 2011 *Poison Help* General Population Survey design.

Davis Market Research, acting as a subcontractor to StrategyOne, will be responsible for the implementation of the *Poison Help* General Population Survey including obtaining the sample; recruiting telephone staff; training interviewers; conducting data collection, receipt, editing, coding, and keying, and analysis; and developing statistical reports. Davis Market Research also acted as a subcontractor on the 2006 survey. StrategyOne will oversee Davis Market Research and assist with interviewer training. DataWise Inc., acting as a subcontractor to StrategyOne, will be responsible for data management, implementing statistical weighting procedures and coding respondent answers. StrategyOne will oversee DataWise and assist with staff training. HRSA will provide direction to the contractor.

Persons from StrategyOne analyzing the data will include vice president, Mr. Sparky Zivin (telephone: 202-326-1708), research director, Ms. Jennifer Myers (telephone: 202-772-3564), research assistant Mr. Bryan Kitz (telephone: 202-756-2407) and research assistant Ms. Meredith Glacken (telephone: 202-326-1813). The individual at HRSA who will be responsible for receiving and approving contract deliverables from StrategyOne is Ms. Elisa Gladstone, Director, Poison Control Program, Health Resources and Services Administration (telephone 301-594-4394).