

**Supporting Statement B For:**

Awareness and Beliefs about Cancer Survey (NCI)

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## **B. STATISTICAL METHODS**

The Awareness and Beliefs about Cancer (ABC) Study is being conducted in multiple countries around the world. It is anticipated that the results of the ABC Study will be analyzed both for US respondents only and also combined with data collected internationally. Therefore, the US data collection sampling strategy, data collection methodology and survey instruments are intended to align with data collected in other countries.

### **B.1 Respondent Universe and Sampling Methods**

#### Sampling Frame

The target population for the ABC Study is adults aged 50 and up living in private households in the United States. Because this is a random digit dial (RDD) study being conducted by telephone, the sampling frame will be households with landlines. The assumption of RDD telephone surveys is that, by drawing a sample from the universe of all telephone numbers that are used in the country, researchers effectively draw a random selection of households.

Households will be selected using plus-digit dialing. This method takes a systematic random selection of telephone numbers from national telephone directories and replaces the last two digits of the telephone number with randomly generated digits. Telephone information will be purchased from Survey Sampling International (SSI). Two random digits will then be appended to obtain a randomly generated telephone number in that area.

Only one individual per household will be selected for the survey. For households with more than one resident aged 50 or over, the Rizzo method will be used to select one at random to complete the interview (Rizzo, Brick, & Park, 2004). Under the Rizzo method, once the number of eligible household members is known (number aged 50+) a random selection is made:

- One adult household: the one adult is selected;
- Two adult household: the CATI randomly selects either the screener respondent or the other adult;
- Three or more adults in household: the CATI randomly selects either the screener respondent or one of the other adults. If one of the other adults is selected, then the ‘next birthday’ rule is used (excluding the screener respondent). The next birthday method selects the person in the household who has the next birthday.

The advantage of using the Rizzo method is that, by not asking for next birthday in all cases, refusal rates are lower as less screening is required. This approach also helps to eliminate any self-selection bias: survey literature shows that the number of times the person with the next birthday is also the person who answered the interviewer’s call initially is higher than would be expected (Rizzo, et al., 2004).

### Sample Size

The goal of ABC will be to obtain 2,000 completed interviews within one year. This sample size was derived based on statistical power goals. A sample of 2,000 will provide estimates that are reliable to around +/-2% of survey findings at the 95% level of confidence.

Given the target audience and the potential proportion of “not in service” numbers and based on response rates achieved in other countries, the starting sample will consist of 50,000 records. Due to the nature of the way the telephone numbers are created, we will lose a large proportion of these as they will be unusable (businesses or not in service, etc.). There will also be a proportion where we either are unable to make contact or where we cannot ask the screening questions for some reason (such as the respondent not speaking English). Because of all these factors, we anticipate approximately 8,000 of the 30,000 households we attempt to contact to be

eligible for the study. Once the screening questions are asked and we have identified that there is a person aged 50+ in the household, the response rate for the main study is anticipated to be in the 60% range<sup>1</sup>. Table B.1-1 illustrates the sampling, eligibility and response expectations.

Table B.1-1

Starting sample of telephone numbers	50,000
Unusable numbers	20,000
Households with usable phone numbers where contact will be attempted	30,000
Household eligibility undetermined (no answer, hang up, screening incomplete, etc.)	22,000
Household eligible determined (screening completed)	8,000
Eligible Households (at least 1 adult age 50+)	3,300
Completed interviews	2,000

### Weighting

Two forms of weights will be applied to the survey results:

- **design weights** will be applied to remove the sampling bias which results from use of varying selection probabilities; and
- **non-response weights** will be calculated to reduce the level of non-response bias.

Survey weights (the combination of design and non-response weights) will be applied to create datasets representative of the population of each jurisdiction on key variables.

## **B.2 Procedures for the Collection of Information**

Data will be collected via CATI interview by the selected contractor, Ipsos, in a manner that is consistent with the data collections conducted in other countries, to ensure that data is compatible. Households identified during the RDD process (described above) will be contacted by telephone. The screener instrument (see **Attachment 2**) will be conducted with whatever adult answers the telephone. If the household is identified as eligible (there is an adult 50 or

<sup>1</sup> Response rates to be calculated using American Association for Public Opinion Research formula RR3.

older in the household), then the number of eligible adults will be determined. If there is more than one, the Next Birthday Method will be used to select the respondent for the interview. **(Attachment 3).**

Respondents will be given the option of completing the interview when the contractor reaches them by phone or, if the selected individual is not available at the time of the call, the interviewer will arrange to telephone at a convenient time. Interviewers will be fully briefed to act in a sensitive manner at all times. Interviewers will be instructed to show empathy towards the individuals being interviewed and be patient and sensitive, particularly if respondents get upset when discussing their experiences about cancer. Respondents will be offered contact details of NCI-based support, such as 1-800-FOR-CANCER, in the event that they experience any concern or distress.

Respondents will not be re-interviewed. The only case where respondents will be called a second time is when they asked to set up an appointment for their interview.

### **B.3 Methods to Maximize Response Rates and Deal with Nonresponse**

To maximize response, an operational telephone number will be contacted a minimum of 7 times. Survey participants will be approached and interviewed by trained interviewers. When this survey was administered in other countries, using similar methods, interview rates among eligible participants were up to 83%. Mechanisms to increase response rates will include interviewer training, establishment of researcher credentials, multiple call attempts, and targeted call times.

### **B.4 Test of Procedures or Methods to be Undertaken**

The items on the questionnaire were cognitively tested in the United Kingdom with ten people (males and females) aged 50+ over the telephone for the information collection that

occurred by other countries. The testing aimed to explore whether people understood the questions and terms used, how they were interpreted, and the thought processes followed when answering. Cognitive testing led to refinement of the questionnaire. In addition, a test-retest reliability check was conducted over the telephone, with each person completing the measure on two occasions, two weeks apart. Across all items, the average number of respondents providing exactly the same response at both administrations of the survey was 66%. A question at the end of the second survey helped explain discrepancies, finding that 84 out of 97 respondents had seen, heard or read something about cancer since the first interview.

Due to the extensive testing that has already been performed on the questionnaire, further testing was not needed. Adjustments were made as needed to ensure the language is appropriate to the United States.

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

The contracting organization is Westat, with Ipsos acting as the subcontractor for data collection. Representatives from both organizations were consulted for their expertise in survey design and administration. **Attachment 6** has a list of additional individuals that were critical in developing the survey instrument, sampling strategies, and research plan in this study. Many in this international collaborative group may be consulted for the analysis phase, once the data are collected, due to their experience with the measures and their interest in comparing data across countries.