

ATTACHMENT H

WEB-BASED AUDIO COMPUTER-ASSISTED SURVEY INTERVIEW (ACASI)

Web-based Audio Computer-Assisted Survey Interview (ACASI)

Research has shown that when discussing sensitive topics or behaviors, such as sexual behaviors, survey participants are often more candid when responding via computer rather than to a live interviewer.^{1,2} Other research has demonstrated that surveys administered online (web), without an interviewer present, are characterized by higher levels of self disclosure, an increased willingness to answer sensitive questions, and reductions in socially desirable responding.³

Given the sensitive nature of many of the survey questions for the TPP Replication Study, particularly those regarding sexual behavior, web-based, Audio Computer-Assisted Self-Interview (ACASI) offers many advantages over other methods of data collection. It has the capacity to capture and store data in real-time, where each response to a question (as it is entered) is sent immediately to a central and secure database and information is not stored on any local computer. This strategy also offers a level of data security that cannot be matched by paper-and-pencil techniques (or computerized surveys in which survey data is stored, however briefly, on the computer). Also, given the likely low reading levels of sample members, the use of ACASI will undoubtedly help to reduce any literacy problems encountered while taking the survey. This web-based ACASI technology has been successfully used in several large clinical trials, including studies that deal with sensitive questions such as drug use or exposure to HIV/AIDS and has been shown to be cost- and time- effective.

The ACASI system is designed to operate through use of a computer mouse rather than a keyboard, to maximize the kinds of end users who can use the applications. While the system functions without a keyboard, one may be used if preferred by the end user. As each survey question appears on a computer screen, an audio version of that question can be heard through headphones. English and Spanish language audio versions of each survey are available, upon request by the respondent. As words are said via audio, those words are highlighted simultaneously on the computer screen. In addition, the audio files may be muted if the study subject desires to just read the questions. A session begins with a display of illustrated instructions that are dictated to the sample member through headphones. All questions

¹ Tourangeau, R. (2004). Survey research and societal change. *Annual Review of Psychology* 55, 775–801.

² Tourangeau, R. and T. Smith (1996). Asking sensitive questions: The impact of data collection mode, question format, and question context. *Public Opinion Quarterly* 60, 275–304.

³ Joinson, A. N. (2001). Self-disclosure in computer-mediated communication: The role of self-awareness and visual anonymity. *European Journal of Social Psychology* 31, 177–192.

are displayed on the screen and narrated to the subject over the headphones.

In summary, the web-based ACASI technology offers the following:

- Encourages accurate (and honest) self-report of sensitive behaviors and attitudes
- Is adaptable to any language (e.g., English and Spanish)
- Can be used with any hearing respondent, does not need a high level of literacy
- Can be used with non-hearing respondents, since the words will appear on the computer screen with or without the audio component
- Allows for real-time data collection into central database
- Data queries can be issued quickly/resolved in a more timely fashion
- Outcome measures are tracked more readily
- Saves each question as it is entered, which allows users to resume partially completed questionnaires at another time (and begin where they initially ended or exited the survey)
- Assures respondents of a high degree of privacy
- Assures consistency – each respondent hears exactly the same question in exactly the same manner
- Provides real-time data validation, which prevents invalid or illogical data from entering the database
- Programmed skips (or jumps) ensure that the survey flows logically and the respondent is only presented with appropriate questions
- Provides error messages that are customized and informative (e.g. “Number of female sex partners cannot exceed sum (total) of female and male partners.”)
- Allows respondents to hear or re-read the question again by simply clicking a “repeat” button
- Allows the respondent to review and/or modify responses to previous question(s) using the highlighted buttons on the screen (or the “forward” and “back” arrows on the screen)
- Helps address literacy problems (for respondents who would have difficulty in just reading the survey questions without audio)

Use of Web-based ACASI for the TPP Replication Study Baseline Survey

Here, we provide an example of how baseline data collection might occur in several of the replication sites.

The sample member is seated at a computer (in a designated, private space) and given headphones. The local data collection liaison or program staff member logs on to the ACASI system and conducts a basic sound check to ensure the audio is working correctly and sufficiently loud enough for the

comfort and hearing ability of the sample member. Note: The audio component can be muted whenever necessary. The staff member enters a pre-assigned identification code (e.g., a unique, assigned 5-digit code, predetermined by the study team) and logs into the web-survey. The staff member ensures the sample member is comfortable with the equipment and its use. The survey session begins with a display of illustrated instructions that are also narrated through the headphones. The sample member is then left at the computer station alone to complete the survey in private.

The survey questions are displayed on screen while voiced to the subject. For multiple-choice responses, each response is highlighted as the possible response is read. At any point during the audio playback, the subject may choose an answer by clicking the computer mouse anywhere on the desired response text. As responses are entered, the ACASI system evaluates the response and skips to the next applicable question. Real-time validation checks ensure the answers to questions are within range and cross-field checks ensure consistency. For example, a question about how many times the respondent engaged in oral sex (in the past 30 days) will check the entered total against any detail questions about oral sex so that the sum of the detail question does not exceed the original total entered.

Sample members have the ability to go forward or backward in the ACASI survey as needed (“Back” and “Forward” arrows will appear on screen). If a sample member exits the survey before finishing and re-joins later, the survey will begin at the question at which the sample member left. The ACASI system also has the capacity to embed a simple, user-friendly help menu for sample members to reference as needed while completing the survey.

Upon completing all survey questions, the last screen will tell the sample member “The survey is now complete”. The sample member will exit the private, computer area, real-time verification of the completion will be recorded in the survey data base, and the sample member will receive their incentive for completing the survey.