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Field Report, August 2000

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SURVEY OF AIDS AND OTHER SOCIAL ISSUES

FIELD REPORT

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I. Background

The Center for Survey Research of the University of Massachusetts Boston (CSR) entered into a contract with the Research Triangle Institute (RTI) beginning July 1, 1999 to conduct the Survey of AIDS and Other Social Issues. CSR was to conduct 2700 interviews, half administered by CSR interviewers using CSR's Computer Assisted Telephone Interviewing (CATI) system. This system utilizes the CASES software developed at Berkeley. The other half of the interviews were to be conducted using RTI's TACASI system. Under this system, CSR interviewers would initiate the contact with a sample household, screen the household for eligibility, enlist cooperation and randomly select an eligible respondent from within the household. The interviewer would then initiate a three way telephone connection among themselves, the respondent, and the TACASI computer at RTI. This computer would then ask the respondent the survey questions while the respondent keys answers into their touch tone telephone. The interviewer remains in the three-way connection for about seven questions to ensure that the respondent is comfortable and that the connection is working well. These initial questions are demographic in nature and not sensitive. After these questions, the interviewer leaves the three-way connection so that the respondent can continue alone with the computer to complete the survey.

The 2700 interviews were to be collected using two random digit dialed (RDD) samples. CSR uses the GENESYS system to generate its RDD samples. One sample was a national RDD sample (including Alaska and Hawaii), expected to yield 1800 interviews, again half by CATI and half by TACASI. The other RDD sample targeted exchanges servicing the city of Baltimore. This sample was expected to yield 900 interviews.

The questionnaire to be used in this survey was very sensitive in nature, with a majority of questions dealing with sexual behaviors, drug use, and alcohol use. This makes the survey particularly difficult for the interviewer administering CATI interviews. Interviewers must be exceedingly well prepared and professional in dealing with this subject matter. The questionnaire was predominantly the same one used in a previous survey in the city of Baltimore. For a household to be eligible for this survey, at least one person between the ages of 18 and 45 inclusive had to reside in the household. This was the primary objective of the screening portion of the survey, along with determining the residential status of all telephone numbers dialed. If a household had more than one person between the ages of 18 and 45, then a random selection of one eligible household respondent was performed. The survey had to be completed by the randomly selected respondent. No proxy interviews were allowed. This, of course, is obvious considering the sensitive nature of the subject matter.

Some additional information about how this study was conducted is necessary. As described, half the sample telephone numbers were randomly assigned to be done by each of the assigned modes with only one possible exception. In order for a person to conduct a TACASI interview, the person needed to have a touch tone telephone. The TACASI computer requires

this to record the respondent's answers. If a person assigned to the TACASI mode was found not to have a touch tone telephone, then they were allowed to do a CATI interview. This was the "only" time an interview was allowed to change from the assigned mode. It was not expected that many respondents would be found that did not have touch tone telephones.

Finally, the end of the TACASI interview asks the respondent a few interviewer debriefing questions about difficulties in answering sensitive questions, and about the use of TACASI methodology. For balance purposes, it was decided the respondents to the CATI version of the questionnaire should also get similar debriefing questions. Therefore, at the end of the CATI interview, respondents were also connected to the TACASI computer for a few debriefing questions. Using these questions, a comparison of CATI and TACASI respondents could be performed.

II. The Pretest

Unlike most pretests conducted by CSR, the pretest for this AIDS survey was not focused on examining the particular survey questions to determine how well they worked and what changes, if any, could be recommended. This was not necessary since the questionnaire had been previously used. Instead, the pretest had three primary goals. They were:

1) To test the programming of CSR's CATI version of the questionnaire to make sure it was working as designed.
2) To test the ability of CSR interviewers to connect to the TACASI computer, make connection with a respondent, and then back away leaving the respondent alone with the computer.
3) To train CSR interviewers in the use of this sensitive questionnaire and to learn

about possible issues interviewers may have in gaining cooperation and getting respondents to answer the sensitive questions.

Only the most experienced CSR interviewers were used in this pretest as it was felt that the most detailed information possible was needed from the pretest to enable a thorough review of potential problems with both the TACASI connections and the administration of of the CATI questions. The pretest began with a briefing of the interviewers on August 10, 1999. Data collection continued through August 24 with an interviewer debriefing session being held on August 25. A total of 69 pretest interviews was conducted. There were 39 done through CATI, 29 done through TACASI, and one which was assigned to TACASI, but was done through CATI since the respondent did not have a touch tone telephone. This confirmed our belief that not having a touch tone telephone would not be a major factor in the ability to use the TACASI computer.

Overall, the pretest served several important functions. They were:

1) Initially, connection to the TACASI computer did not run as smoothly as desired. There were problems in having valid identification numbers rejected by the TACASI computer, having the computer cut off a respondent after the interviewer backed out of the three way connection, garbled telephone connections in which the TACASI computer was difficult to understand, and an inoperative respondent help line feature, in which respondents were not connected to CSR for assistance, but were left hanging with dead air. Those were all

discussed early and reported so that the TACASI problems improved throughout the pretest. By the end of the pretest, it was felt that the ability to connect was greatly improved. The respondent help line was still problematic.

2) CSR's CATI program was given a rigorous test and was found to be accurate and performing well. One skip pattern problem was detected early in the pretest and corrected. The skip pattern involved a particular set of questions which were gender specific. Inappropriate questions could be asked under certain conditions. This was easily fixed early in the pretest.

3) A question by question comparison of CATI responses to TACASI responses showed a problem with one question in the TACASI questionnaire. This was pointed out and quickly fixed.

4) Interviewers became much more comfortable in administering the questionnaire. Whereas in the beginning, interviewers had concerns about how difficult it would be to ask respondents some of the sensitive questions and whether or not respondents would actually answer such questions, these fears were allayed as the pretest went on. This was very important because by the end of the pretest, interviewers were convinced that they could do this difficult survey and get accurate data.

The interviewer debriefing session held on August 25, discussed the topics just mentioned as well as a few others. There were a few questions that the interviewers felt were difficult to read. They involved the use of terms they considered more slang than scientific. An example of such a word was "come" when used for "ejaculation". The interviewers were told that we understood such concerns, but since the questions were shown to work as written in the past, they needed to remain the same for comparative purposes. The number of questions they felt uncomfortable with was small.

Much discussion in the pretest debriefing involved gaining respondent cooperation. It was decided that a strictly worded text for gaining cooperation was not the best approach for this study. Interviewers needed some leeway in trying to determine if eligible respondents existed in the household and in enlisting cooperation. General guidelines were discussed as to how best to keep a respondent on the telephone, determine eligibility, enlist cooperation, and read the mandatory text about survey sponsorship and a respondent's rights. Everyone became clear on how best to proceed and enough leeway was granted interviewers that they felt more comfortable in enlisting cooperation.

Overall, the pretest was quite successful in uncovering minor problems, and getting all parties on the same page to begin the study.

III. Data Collection

The data collection officially began with an interviewer briefing on September 1, 1999. The briefing lasted about 2 1/2 hours. Both interviewers and phone room supervisors were

briefed. The briefing covered many topics, but concentrated on three important aspects of doing this study. They were:

1) Enlisting respondent cooperation
2) Becoming comfortable with the survey questions and the survey subject matter, and
3) Becoming comfortable with TACASI procedures.

We felt it was very important to have interviewers who were comfortable reading the sensitive questions, so a sizeable portion of the briefing was dedicated to interviewers taking time reading the questions out loud. This helped somewhat desensitize the questions. The pretest interviewers also attended this briefing so that they could reassure other interviewers that respondents would answer the questions and the interviews would run smoothly. Additional time was taken going were various introductions to help enlist cooperation.

After the briefing, interviewers spent the rest of the night doing warm practice interviews in our CATI system, again always reading the questions out loud. Interviewers also connected each other to the TACASI computer so that they could become both familiar and knowledgeable about how TACASI worked. No live interviewing was done on September 1. September 2nd was also mostly used for additional practice, with some interviewers beginning live interviewing later in the evening. Everyone began live interviewing by September 3rd.

On September 14, a debriefing session was held with all interviewers working on the study. The purpose of this meeting was to have an open discussion about how things were going from their standpoint. A few interviewers had more difficulty than others using TACASI, and interviewers shared tips on how to make this transition smoother. The tips were general in nature but helped make sure we were handling the situations consistently. For example, when an

interviewer dialed the TACASI computer, and did not connect cleanly for any reason, the interviewer should hang up and go back to the respondent and tell them that the connection will be made in a moment. The interviewer could then again try the computer and everything should go smoothly. Reassuring the respondent in this manner, kept them online if any problems did come up. Additional time was spent with interviewers sharing their experiences with gaining cooperation. The meeting served to notify project managers of potential problem areas and again reassure and reinvigorate interviewers. A second briefing for additional interviewers to be added to the study was conducted on September 21. A third and final interviewer briefing was conducted on October 28. Overall, a total of 35 interviewers was briefed on the study.

As part of the procedures CSR uses for large and difficult studies, interviewers are first assigned to work on a small portion of the overall sample. This portion is a random subset of the entire sample and considered part of our production sample (i.e., it is not intended as a practice or throw away sample.) We call this random portion our training sample, because the purpose is to train interviewers to work efficiently and to weed out interviewers who cannot perform well before they are allowed into the large remainder of the sample. Four of the 35 interviewers were judged as not being able to perform well enough to continue working on the study. In this training sample, our best four interviewers averaged about four successfully screened households for each screening refusal. A successful screener was verifying the residential status, determining whether anyone 18-45 years old lived there, and selecting a random eligible household respondent from those households who had more than one person 18-45. Overall, training sample interviewers had about one successfully screened household for each screening refusal. The four interviewers who were dropped from the study averaged slightly more than two screening refusals for each successfully screened household. If this type of result was

allowed to continue beyond our training sample, it could seriously jeopardize our ability to obtain an adequate response rate for this study. Therefore, these four interviewers were moved off the study. The advantages of the training sample approach can be easily seen. Interviewers who for one reason or another, cannot perform adequately in a study, are identified and removed before they touch a large number of sample cases and possibly jeopardize an entire study. Both new and experienced interviewers must work in the training sample, as it may not only be a lack of experience, but aspects of the individual study which help determine which interviewers can and cannot be successful.

Data collection was originally planned to end by the end of January or February 2000. In reality, data collection continued until the end of April 2000. There were several reasons for the extended field period and these will be discussed later. The option of adding additional interviewers to the staff assigned to this study was discussed but dismissed. The interviewers working the study were performing quite well and developed a team camaraderie. Potentially disrupting this "team" in order to speed up data collection was felt to be short sighted and not in agreement with a stated survey goal of maximizing the response rate. Due to the elongated data collection period, interviewer burnout was a concern. To offset some of these potential problems, a pizza party was held for interviewers in January and another party in early March. The purpose of these parties was to maintain staff morale and to keep everyone informed about their accomplishments to date. They also served to again allow interviewers to share their experiences.

An indication of the professionalism of the interviewers in dealing with a survey that asked extremely personal and sensitive questions, is that not one complaint was fielded by the survey manager at CSR or their counterparts at RTI. Although the telephone numbers of the

managers at CSR, the project director at RTI, and the Internal Revenue Board at RTI were given to any respondent who requested additional information, no respondent felt compelled to call anyone with any complaints. Only a single incident of a respondent who became extremely distraught by the survey questions was reported. The interviewer handled the situation professionally, wrote up a report, and passed the report on to the survey manager. The report was then forwarded to RTI for their review. The respondent was immediately removed from the sample and never called again. The fact that virtually no complaints or incidents existed for such a difficult study is a testament for how well interviewers became at addressing difficulties with sensitive questions. It should be added that the lack of complaints existed even though refusals were recontacted, not once, but twice in attempts to convert them.

Overall, it must be stated that although the data collection period was longer than anticipated, it must be considered successful.

IV. SAMPLE RESULTS

A. National Sample

As stated earlier, the national sample for this study was a random digit dialed (RDD) set of telephone numbers generated by the GENESYS System to include all 50 states plus the District of Columbia. 14250 telephone numbers were generated and then randomly allocated to two equal groups of 7125 telephone numbers each. One group was designated to be interviewed by CATI while the other was designated to be interviewed by TACASI. The designation of CATI or TACASI was done prior to any dialing of telephone numbers. Table 1 gives results of our attempts to screen each of those telephone numbers. Screening involved determining whether a telephone number

connected to a residence, and if so, further determining if at least one person between the ages of 18 and 45 lived there. If both conditions were met, then the telephone number was classified as connecting to an eligible household and an interview was attempted. If more than one person between the ages of 18 and 45 lived in the household, then one person was randomly selected from among the eligible people. Once a person was selected, the interview had to be done with that selected person. No substituting of other eligible household members was allowed.

From an initial look at Table 1, it can be seen that interviewers did an excellent job at determining the residential status of sample telephone numbers. Only 1122 of 14250 (7.9%) of all sample telephone numbers could not definitively be determined to be either residential or nonresidential. This is an extremely low rate. Moreover, the rates are very consistent across the two sample groups. A rate of 7.7% was obtained for telephone numbers assigned to the CATI half of the study, while a rate of 8.0% was obtained for the TACASI half. Since the telephone numbers were randomly assigned to sample groups, such consistency would be expected. Still, it is reassuring to see such close agreement between sample groups. These comparative results across sample groups are given in Table 3.

The next result that can be obtained from Table 1 is the rate at which telephone numbers are found to be residential. The 1122 telephone numbers whose residential status is unknown must be omitted from this calculation. Assuming that all telephone numbers that connected to households where no one spoke English are residential (a reasonable assumption since most businesses and such need people who speak English to operate as a business), then 48.3% of all known telephone numbers were residential. This rate is again very consistent across the two sample groups. A rate of 48.4% residential was found for the CATI half sample while a comparable rate of 48.2% was

found for the TACASI half sample. Again, it is very reassuring to find such consistent results.

Overall, those residential rates are slightly higher than the 44.5% we expected from information given by the GENESYS system. This is not an unusual finding at CSR. If it is assumed that all telephone numbers of unknown residential status are really nonresidential, then the overall residential rate for the entire sample becomes 44.5%. The rate matches exactly with the expected residential rate. Such a calculation done across sample groups again leads to consistent results of 44.7% for the CATI sample and 44.3% for TACASI. Of course, it is unreasonable to assume that

Table 1: National Sample -- Screening Results

	Completed Screener-Eligible Household	Completed Screener-No Eligible Respondent	Business Number	Fax or Modem	Phone out of Service	Non-Residential	Foreign Language	Screening Refusal	Screening [1] Limit	Unknown [2] Residential Status	Total
CATI	1117	1563	892	540	1929	31	104	314	86	549	7125
TACASI	1066	1580	919	516	1921	39	105	315	91	573	7125
TOTAL	2183	3143	1811	1056	3850	70	209	629	177	1122	14250

1) LIMIT -- These are telephone numbers known to be residential for which eligibility could not be determined after a large number of calls (i.e., it was never determined if someone 18-45 lived there).

2) UNKNOWN -- These are telephone numbers for which residential status could never be determined. Most are numbers which always generate a ring with no answer for all call attempts.

all telephone numbers of unknown status are nonresidential. When CSR has taken random samples of such unknown status telephone numbers, and rigorously pursued all avenues to reconcile their status, we have consistently found that close to 4% of the numbers are indeed residential. Making such an assumption here, leads to an overall sample residential rate of 44.8% (45.0% for CATI and 44.6% for TACASI). This 4% rate is the rate assumed for response rate calculations which will be discussed later. The great lengths to which CSR goes to correctly classify the residential status of telephone numbers and the high rate at which we do correctly classify numbers, leads directly to the small percentage residential left in the pool of unresolved telephone numbers.

The next topic of note addressed in Table 1 is the rate at which successfully screened households were found to be eligible for this study (i.e., the household contained at least one person between the ages of 18 and 45 inclusive). For the entire sample, this rate can be computed as 41.0%. The rate is simply computed as the eligible households divided by the sum of the eligible and confirmed ineligible households (2183/(2183 + 3143). Again, the rates are quite comparable across sample groups with a rate of 41.7% for the CATI half sample and 40.3% for the TACASI half sample. These rates are not as extremely close as the rates of resolving residential status or being residential, but still are within 1.4 percentage points of each other, which is well within sampling error (approximately 2.6 percentage points in such a comparison). Once again, such a consistency across sample groups is very reassuring.

This overall rate of 41% is somewhat less than the 48% rate that was assumed for this study. One problem may be that 1990 Census data was used to generate the expected rate. It is quite possible that the 2000 Census will show a rate that is lower than 48% and closer to our 41% rate. Another possible explanation is a small degree of nonresponse bias in which households who have someone 18-45 years of age are more likely to refuse the screening portion of this interview than

households that do not have such a person. There may even be a small amount of households who misidentify themselves as not having someone 18-45 when they do. This latter result could occur if some households guess that they may be ineligible if they claim no one 18-45 lives there. Once Census 2000 data are available, a calculation of the percentages of households that have someone 18-45 should be computed for a more accurate assessment of potential nonresponse bias. It is our best guess that some nonresponse bias exists, but probably slightly less than the 48%-41% comparison at present. Still, it should be pointed out that since rates of finding households with someone 18-45 was consistent across the CATI and TACASI half samples, then any nonresponse bias that does exist affects each sample group the same. Therefore, comparisons between CATI and TACASI should not be affected.

The last major result that can be determined from Table 1 is the estimated percentage of households that were successfully screened. The formula used to determine this rate is given in Table 4. Basically, a CASRO type response rate formula is used in which 4% of those telephone numbers whose residential status is unknown are assumed to be residential. Foreign language speaking households are considered as ineligible for this study as the questionnaire was not translated into any foreign language and therefore interviews in any language other than English could not be done. This was a basic survey design decision. The effect of this decision is minimal, as only 1.5% of all telephone numbers dialed connected to a household that did not speak English.

For the entire sample, a screening response rate of 86.22% was obtained. This is quite high. Although the conditions for getting a household to be considered successfully screened (i.e., determine residential status and if someone 18-45 lives there) are minimal, at a time in which many people use answering machines and caller ID to screen out all unwanted calls or simply hang up immediately on any call deemed an intrusion, a rate of successfully screening households of 86.22%

must be considered quite high.

Once again, there is consistency across sample groups with a screening response rate of 86.4% for the CATI half sample and a rate of 86.05% for the TACASI half sample. This comparison is very important. Although it would be expected that these rates should be close since telephone numbers are randomly assigned to a sample group and since the screening procedures for both CATI and TACASI households are identical, still knowing that the rates are as close as they are is an indication that both sample groups were handled in the same manner. In other words, no unknown interviewer related effects occurred which could lead to differences in screening response rates. As comparisons between CATI and TACASI results are a key component to any analyses of data from this study, knowing that everything went as expected in the screening process and that no unexplained differences exist is a critically strong result.

Table 2 displays the results of what happened to the 2183 households which were successfully screened and found to have someone 18-45 years of age. Interviews were attempted with all of these households. It is important to note that it is at this point where the CATI and TACASI samples diverge in their procedures. For CATI households, interviewers attempted to complete the interview with the respondent themselves. With the TACASI households, the interviewers connected the respondent with the TACASI computer and then backed out of the telephone connection, so that the respondent could answer the survey questions directly into the computer with no human interaction. It is also at this point that the two random half-samples display different results. In the CATI half sample, 799 of the 1117 eligible households completed the interviews for a rate of 71.53% of getting successfully screened households to do a complete interview. If partial interviews (i.e., those that completed some of the interview, but not all)are considered, this rate could raise as high as 74.66%. The TACASI results look quite different. In

Table 2: National Sample -- Interviewing Results

	Completed [1] Interviews	Partial [2] Interviews	Refusals [3]	Other [4] Noninterviews	Limits [5]	Total
CATI	799	35	178	7	98	1117
TACASI	653	56	220	6	131	1066
TOTAL	1452	91	398	13	229	2183

1) The TACASI total includes 22 interviews which were assigned to be done by TACASI but which were done by CATI because the respondent did not have a touch tone telephone. The TACASI total also includes 10 interviews which were completed but whose data were lost by a computer failure. This second event occurred early in the study.
2) These are interviews which have some completed sections of the questionnaire, but not all. Two of the TACASI partial interviews were done by CATI due to the respondent not having a touch tone telephone.
3) Three TACASI refusals were cases which were attempted by CATI due to the respondents not having a touch tone telephone.
4) These are generally due to a respondent being too ill to do the interview. Other such similar circumstances may also contribute to a selected respondent not refusing, but not being able to do the interview.
5) These are identified respondents who did not refuse, but who did not complete the interview.

this half sample, 653 of the 1066 eligible households completed the interview for a rate of 61.26%. If partial interviews are considered, this rate could raise as high as 66.51%. A comparison of these results has the CATI half sample over ten percentage points better than the TACASI half sample for completed interviews, and slightly over eight percentage points better if partial interviews are taken into account. All these rate comparisons are displayed in Table 4.

There was a definite difference in the rate at which respondents completed interviews between CATI and TACASI. This is exhibited in more partial interviews, more refusals, and more limits (i.e., respondents who did not refuse, but who we could not get to do an interview after numerous call attempts) in the TACASI sample, all at the expense of completed interviews. Only the very small other noninterview category had TACASI and CATI behaving somewhat similarly. This category is for respondents too ill to complete the survey and other such non refusals.

In order to begin to understand this difference, it is necessary to know how TACASI cases were handled procedurally. Once an interviewer connected a respondent to the TACASI computer and made sure the respondent was comfortable in answering the first few nonsensitive questions directly into the computer, the interviewer hung up leaving the respondent alone with the computer. The interviewer had no way of knowing what the respondent did at this point. The respondent did have an option of asking the computer for help, at which the computer would dial our telephone room and connect the respondent to one of our interviewers who could give them direct assistance. In our experience, respondents virtually never opted to do this. In fact, throughout the entire study, less than 10 such help calls were fielded. It appears that respondents simply might hang up rather than seek help under any circumstances. Once an interviewer backed out of a connection with the TACASI respondent, they would simply code the case as such and then attempt other telephone numbers. Each night, the TACASI computer would email us lists of those cases which were

contacted that day and which ones were completed and which ones broke off before completion. For breakoffs, an indication of how far the respondent went into the interview was also given. Breakoffs were scheduled to be called that day to see if we could determine why the respondent did not complete the interview and to try to get them to complete it from where they left off. In this manner, every TACASI breakoff was attempted to be recontacted on the day following the breakoff.

It appears to CSR, that this delay causes problems. For whatever reason the breakoff occurred, interviewers are now trying to reestablish contact and then convince respondents to continue. This is a time consuming and difficult task. From the CATI standpoint, CSR interviewers are trained to try to keep respondents on the line until they complete the interview. If for some reason, they cannot do this, they make a hard appointment of exactly when to call back. They try to make this appointment as soon as possible, maybe even in 10 to 30 minutes. In any event, they strongly attempt to get the respondent to commit to an exact time of when they will complete the interview.

It appears that the combination of the ease at which a respondent can hang up on a computer and the high level of experience of our interviewers in getting respondents to stay with the interview both contributed to the observed discrepancy in rates at which interviews could be completed. The topic of TACASI breakoffs will be discussed in greater detail later in this report.

At this point, a brief description of partial interviews should be given, to give a better understanding of these results. The AIDS survey began with questions about drug use, it then proceeded with questions about sexual experience. It next moved into questions about sexually transmitted diseases before concluding with questions obtaining opinions about race relations and child and spousal abuse. We looked at partial interviews in terms of just how far they went before

termination. The following results were obtained.

	Through Drug Questions	Through Sexual Experience Questions	Through Sexually Transmitted Disease Questions	Total
CATI PARTIALS	13	16	6	35
TACASI PARTIALS	24	24	8	56
TOTAL	37	40	14	91

It can be seen that most partials went through the sexual experience questions. This actually is quite a bit of usable data.

In order to discuss overall survey response rates, the partial interviews must be taken into consideration. This is displayed in Table 4. Before the study began, an overall response rate of 60% was considered highly important to obtain, while a response rate of 65% would be a tremendous accomplishment. For the CATI portion of the study, an overall response rate of 61.8% was obtained if only completed interviews are considered. The rate increases to 63.5% if partials through the sexual experience questions are considered and 64.5% if the drug section partials are considered. In any event, the CATI portion of the survey must be considered as having satisfied original survey expectations.

The TACASI overall response rates were lower for reasons previously cited. They vary from a rate of 52.7% if only complete interviews are considered. This rate reaches to 55.3% if partials through the sexual experience questions are considered and 57.2% if drug section partials are considered. These are not as high as the CATI response rates, but are still quite good for a national RDD survey. CSR feels that when we could control the whole process, as we did with CATI, then we obtained higher response rates. When we ventured into the less charted waters of TACASI, we could not quite obtain the same level of results. More experience in this area should lead to improved performance.

Table 3: National Sample -- Comparative Results of Screening

	Entire Sample	CATI Half Sample	TACASI Half Sample	Expected Result
Rate of Resolving if a Telephone Number is or is not Residential	92.1%	92.3%	92.0%	90.0%
Rate at which Resolved Telephone Numbers are Residential	48.3	48.4	48.2	44.5[1]
Residential Rate if 4% of Unknown Status Telephone Numbers Are Assumed Residential	44.8	45.0	44.6	44.5
Rate at which Residential Households Have Someone 18-45 years old	41.0	41.7	40.3	48.0[2]

1) This number is produced by the GENESYS sampling system.

2) This number is based upon 1990 Census figures.

Table 4: National Sample -- Comparative Response Rates

	Entire Sample	CATI Half Sample	TACASI Half Sample	Expected Rate
Screening Response Rate[1]	86.22%	86.40%	86.05%	80.00%
Rate at which Successfully Screened				
Households Completed Interviews:				
Through Entire Interview	66.51	71.53	61.26	75.00
Through Sexually Transmitted Disease Section	67.16	72.07	62.01	75.00
Through Sexual Experience Section	68.99	73.50	64.26	75.00
Through Drug Use Section	70.68	74.66	66.51	75.00
Overall Survey Response Rate[2]:				
Through Entire Interview	57.34	61.80	52.71	60.00
Through Sexually Transmitted Disease Section	57.91	62.27	53.36	60.00
Through Sexual Experience Section	59.48	63.50	55.30	60.00
Through Drug Use Section	60.94	64.51	57.23	60.00

1) This rate is computed as follows:

$$\frac{\text{Completed Screeners}}{\text{Completed Screeners + Screening Refusals + Screening Limits + .04 (Unknown Status)}}$$

2) This rate is computed as the product of the screening response rate and the appropriate rate at which screened households were interviewed.

B. Baltimore Sample

Results for the Baltimore sample can be seen to mirror the national sample results in most ways. Tables 5 through 8 give results for Baltimore which parallel the results for the national sample in Tables 1 through 4. Because of the similarities, only a few highlights will be discussed. For the Baltimore sample, only telephone exchanges which service the city of Baltimore were used. The Baltimore sample was smaller than the national sample with 7500 telephone numbers being generated and randomly divided between those assigned to CATI and those assigned to TACASI. The Baltimore sample was again generated by the GENYSYS system and done so in a completely independent fashion from the national sample. Once generated, the Baltimore sample was compared to the national sample to check if any telephone number was duplicated from the national sample. Two such telephone numbers were identified, one from each of the CATI and TACASI half samples. These two numbers were dropped from the Baltimore sample as we did not want to call the same telephone number twice. As it turned out, one of the telephone numbers was not in service and the other was a business, so no residence was selected for both the national and the Baltimore samples.

As Table 7 indicates, screening results were again very consistent between the CATI and TACASI half samples. Rates at which we resolved whether telephone numbers are working numbers, are residential, and attach to households that have someone 18-45 years old are very close. This again is very reassuring. As Table 8 indicates, screening response rates are also very close to each other (81.96% for the CATI half sample vs. 80.23% for the TACASI half sample). This again is very reassuring.

It does become evident though, that overall screening response rates in Baltimore (81.08% for the entire sample), are lower than the national sample (86.22%). Although not desirable, this is also not unexpected. Interviewing in large urban cities is always a more difficult task than

interviewing in suburban or rural areas, and Baltimore is certainly a large urban city. Still, screening response rates over 80% were obtained which demonstrates a great amount of work.

Overall response rates exhibited a similar behavior to the national sample. Once again TACASI response rates were lower than CATI response rates and all response rates were lower than for the national sample. For CATI, response rates ran from 55.5% if only totally complete interviews were considered, and rose to 56.7% if interviews completed through the sexual experience questions were considered and 57.8% if the drug section was considered. The TACASI counter part rates were 50.0%, 52.8%, and 54.8%.

A breakdown of partial interviews for Baltimore again mirrored the national results and were as follows:

	Through Drug Questions	Through Sexual Experience Questions	Through Sexually Transmitted Disease Questions	Total
CATI PARTIALS	7	6	2	15
TACASI PARTIALS	13	17	2	32
TOTAL 20		23	4	47

Overall, the experience with Baltimore was a mirror image of the experience with the national sample, with only the added difficulty of interviewing in a large urban city.

Table 5: Baltimore Sample--Screening Results

	Completed Screener-Eligible Household	Completed Screener-No Eligible Respondent	Business Number	Fax or Modem	Phone out of service	Non-Residential	Foreign Language	Screening Refusal	Screening [1] Limit	Not in [2] Baltimore	Unknown [3] Residential Status	Total
CATI	539	806	484	214	1084	13	16	201	65	18	309	3749
TACASI	533	814	508	224	1023	14	13	236	61	23	300	3749
TOTAL	1072	1620	992	438	2107	27	29	437	126	41	609	7498

1) LIMIT--These are telephone numbers known to be residential for which eligibility could not be determined after a large number of calls (i.e. it was never determined if someone 18-45 lived there).

2) NOT IN BALTIMORE--These are households who answered that they did not live within the city of Baltimore.

3) UNKNOWN-- These are telephone numbers for which residential status could never be determined. Most are numbers which always generated a ring with no answer for all call attempts.

Table 6: Baltimore Sample -- Interviewing Results

	Completed [1] Interviews	Partial [2] Interviews	Refusals	Other [3] Non-interviews	Limits [4]	Total
CATI	365	15	90	6	63	539
TACASI	332	32	103	3	63	533
TOTAL	697	47	193	9	126	1072

1) The TACASI total includes 14 interviews which were assigned to be done by TACASI but which were done by CATI because the respondent did not have a touch tone telephone.

2) These are interviews which have some completed sections of the questionnaire, but not all. One of the TACASI partial interviews was done by CATI due to the respondent not having a touch tone telephone.

3) These are generally due to a respondent being too ill to do the interview. Other such similar circumstances may also contribute to a selected respondent not refusing but not being able to do the interview.

4) These are identified respondents who did not refuse, but who did not complete the interview after numerous call attempts.

Table 7: Baltimore Sample -- Comparative Results of Screening

	Entire Sample	CATI Half Sample	TACASI Half Sample	Expected Results
Rate of Resolving if a Telephone Number is or is not Residential	91.9%	91.8%	92.0%	90.0%
Rate at which Resolved Telephone Numbers are Residential	48.3%	47.8%	48.7%	39.8% [1]
Residential Rate if 4% of Unknown Status Telephone Numbers Are Assumed Residential	44.7%	44.2%	45.1%	39.8%
Rate at which Residential Households Have Someone 18-45 years old	39.8%	40.1%	39.6%	46.7% [2]

1) This number is produced by the GENESYS Sampling System.

2) This number is based upon 1990 Census figures.

Table 8: Baltimore Sample -- Comparative Response Rates

	Entire Sample	CATI Half Sample	TACASI Half Sample	Expected Rates
Screening Response Rate[1]	81.08%	81.96%	80.23%	78.5%
Rate at which Successfully Screened Households Completed Interviews:				
Through Entire Interview	65.02	67.72	62.29	70.0
Through Sexually Transmitted Disease Section	65.39	68.09	62.66	70.0
Through Sexual Experience Section	67.54	69.20	65.85	70.0
Through Drug Use Section	69.40	70.50	68.29	70.0
Overall Survey Response Rate [2]:				
Through Entire Interview	52.72	55.50	49.97	55.0
Through Sexually Transmitted Disease Section	53.03	55.81	50.28	55.0
Through Sexual Experience Section	54.77	56.72	52.83	55.0
Through Drug Use Section	56.28	57.78	54.79	55.0

1) This rate is computed as follows:

$$\frac{\text{Completed Screeners}}{\text{Completed Screeners} + \text{Screening Refusals} + \text{Screening Limits} + .04\ (\text{Unknown Status})}$$

2) This rate is computed as the product of the screening response rate and the appropriate rate at which screened households were interviewed.

V. Other Results

A. Paying Respondents

As this study progressed, it became obvious that the TACASI response rates were going to be lower than the CATI response rates. To address this concern, it was decided to take a group of 130 TACASI cases that had been connected to the computer but who had not completed many questions, and too offer them $25 to complete the interview. Table 9 shows the results of this effort.

Table 9: Results of Offering Payment to Respondents

Number selected to be offered payment	130
Number Actually Contacted	93
Number who completed survey	48
Number who refused payment	34
Number who did not refuse but who did not complete survey	11
Number who could not be contacted	37

As Table 9 indicates, we were able to successfully contact 93 of the 130 (71.5%) respondents. Of those contacted 48 (51.6%), took the money and completed they survey, 34 (36.6%) refused the payment and would not complete the survey, and 11 (11.8%) did not refuse, but still never completed the survey. There were 37 respondents who we were never able to successfully recontact to offer them the chance of accepting the $25.

The 130 cases that were selected to be offered the payment were chosen as the group of cases available late in the study who: 1) had been connected to TACASI, 2) had not yet refused three times, and 3) who we had not declared finalized due to extensive efforts to unsuccessfully get them

to complete the survey. This cannot be looked at as any random selection of TACASI breakoffs, but by taking all cases available at the time, certainly these cases are representative of the types of breakoffs that are experienced in TACASI. Successfully reaching 71.5% of these people does not seem too low, as if they were easy to reach, they most likely would already have been finalized as refusals, or we would have gotten then to reconnect and complete the survey. The fact that only about half of those contacted actually took the $25 and completed the survey does seem a bit low. One might have expected this amount of money as enough of an incentive to get more people to complete the interview. This did not happen.

It should be pointed out that the observed differences in response rates between CATI and TACASI would have been slightly greater, if this intervention was not attempted. Cases that were paid are identified in the final data files as such, so they can be included or excluded from analyses at the analyst's discretion.

B. TACASI Breakoffs

Another area that was investigated during this study was the cause of TACASI Breakoffs. For each TACASI case that proceeded past the point in which the interviewer backed out of the three way connection leaving the respondent alone with the TACASI computer and which was not then completed, an interviewer would have to attempt to recontact the respondent to try to get them to complete the interview. Upon recontacting the respondent, the interviewer would first ask a few questions about what happened to prevent the respondent from completing the survey. Of particular interest, was learning what percentage of these TACASI breakoffs was due to technical problems with the computer or phone lines, and what percentage was due to the respondent simply ending the

interview by hanging up. These results are displayed in Table 10.

A total of 278 respondents answered the TACASI breakoff questions. Of the 278, there was nearly an exact split between those that claimed it was technical problems that caused the breakoff (50.4%) and those that claimed they ended the interview themselves (49.6%).

For those that claimed a computer problem, we attempted to get them to describe what happened. This proved quite difficult for respondents to do. 51.4% of those respondents could not add any more details other than the computer seemed to hang up on them. The next largest category (20%) were people who took another call through call waiting and had the computer disconnect while they were on the other call. The next two largest categories were respondents who believed the interview was done because no more questions were asked (10%) and problems in which the computer would no longer accept their keypad entries (7.1%). We believe the first of these categories were situations in which dead air existed for one reason or another and the respondent assumed they were done. Other types of problems existed in lesser amounts and are described in Table 10.

For the people who said that they took another call through call waiting, we asked them to estimate, how long they were on the other call before returning to find the computer had hung up. We received the following results to this question:

1 minute	42.3%

3 minutes	7.7%
4 minutes	3.8%
5 minutes	15.4%
7 minutes	7.7%
10 minutes	23.1%

If one believes that these estimates are near correct, about 50% of all call waiting disconnects could be handled if the computer would wait about 3-4 minutes before disconnecting. Conversely almost 25% of all call waiting disconnects are 10 minutes or more.

Getting respondents to describe why they initiated the disconnect with the computer was a far easier task. The two largest complaints were that the interview was too long (36.3% of those for whom we obtained a reason), and that they didn't like the questions (31.5%). Those reasons would not be unexpected. The next largest category was people who said they hung up to take care of an emergency (13.7%). Very few people (3.2%) claimed that they didn't like answering into a computer.

Overall, these results indicate that TACASI breakoffs came from a lot of sources, and are evenly distributed between perceived technical problems and respondents themselves hanging up. Since the majority of breakoffs do not stem from angry refusals, we believe it would be advisable to institute a procedure in which the TACASI computer could alert interviewers within minutes of a breakoff. The interviewer could then get back to the respondent quickly, while they probably still are at

Table 10: Reasons for TACASI Breakoffs

	Number of Occurrences
Computer Problem Source of Breakoff	140
Call Waiting	28
Computer simply disconnected (no explanation)	72
Keypad buttons stopped working with computer	10
Computer asked inappropriate questions (timed out)	3
Respondent thought they finished questions (timed out)	14
Computer would not go to last question asked	1
Pound Key left respondent in dead air (problem with help utility)	4
Bad telephone line connection	5
Phone battery went dead (timed out)	3
Respondent Source of Breakoff	138
Interview was too long	45
Didn't like questions	39
Had to tend to an emergency	17
Didn't like answering to computer	4
Hung up to take another call	6
Accidentally hung up	9
Thought interview was finished	4
No reason ascertained	14

home, to either reconnect them, or make an appointment to complete the interview. This might be

even more effective if the computer had a 3-4 minute time out feature before disconnecting. This would handle about half the call waiting disconnects. When technical problems arose, or when people accidentally hung up or even when they had to tend to an emergency, calling back immediately might get them to reconnect right then. For people who thought the interview was too long or who didn't like the questions, the interviewer might at least attempt to convert the respondent. After seeing the results of these TACASI breakoffs, we feel that such a procedure for immediate recontact is essential to raising the TACASI response rates to rival CATI response rates.

C. Closeout Information

At the end of both the TACASI and CATI interviews, a small set of respondent debriefing questions was asked to elicit respondents feelings about the interviewing process. For TACASI interviews, the respondent simply continued to answer these questions into the computer. For CATI interviews, the respondent was connected to the TACASI computer specifically for these questions. This was considered necessary as an interviewer asking questions relating to whether the respondent was confortable and answered honestly seemed appropriate. Since these questions were considered a bonus and not part of the core interview, if the CATI respondent did not want to do this or if technical difficulties prevented a hookup to the TACASI computer, no call backs were made to obtain this information.

For TACASI interviews, 881 of the 939 (93.8%) respondents who completed the interview continued to complete the closeout questions. For the CATI interviews 924 of the 1200 (77%) respondents were connected to the TACASI computer and answered the closeout questions. Considering the lack of making callbacks to complete these questions, this was considered quite good.

VI. Effort and Cost Implications

The data collection costs of this survey exceeded expectations. Including partial interviews, a total of 2287 interviews were done. This was 85% of the 2700 originally planned. Cost overruns were the reason that not all of the 2700 interviews were completed. Even if TACASI response rates were as high as CATI, about 2428 interviews (including partials) would have been done or 90% of the expected 2700. This would have been better, but still would have been short of expectations.

Overall, a total of 8198 hours were spent interviewing on this study. This computes into 3.58 hours per completed interview. In addition, 2234 hours were spent supervising interviewers, as well as training and briefing interviewers. All of these numbers exceeded expectations. The budgeting for this study anticipated 6785 interviewing hours, 1744 supervising hours, and a rate of 2.50 hours per completed interview. This translates into about 21% more interviewer effort than expected.

It is important to try to understand why the actual effort, and therefore cost, exceeded expectations. Certainly, if TACASI matched CATI in terms of response rate, this would have helped, but it still would not have brought the study in line with the budget. Since interviewers worked on both TACASI and CATI cases in a completely mixed model in which a TACASI case might follow a CATI case, costs specific to TACASI or CATI cannot be separated. This was done by design, as it was felt far more important to balance interviews by interviewers across the two interview modes than to keep costs separate. If interviewers worked only on one mode, we currently would have no way to tell if the difference in response rates between modes was due to a

mode effect or an interviewer effect. This would have been completely unacceptable. Getting less accurate results on costs by mode of interview is a small price to pay for stronger overall mode comparisons for the interview data.

One way to address the cost implications of the two modes, is to compare the amount of effort expended. Table 11 begins to address this type of comparison. The first comparison of interest shows that, on average, a completed interview required 13.38 call attempts in TACASI, while only 9.42 call attempts in CATI. This is a 42% increase in the average number of call attempts required to complete an interview.

Table 11: A Comparison of Effort between CATI and TACASI

	CATI	TACASI
Average call attempts per completed interview	9.42 calls	13.38 calls
10th percentile of call attempts per completed interview	1 call	2 calls
25th percentile of call attempts per completed interview	3 calls	4 calls
50th percentile of call attempts per completed interview	7 calls	9 calls
75th percentile of call attempts per completed interview	12 calls	18 calls
90th percentile of call attempts per completed interview	23 calls	33 calls
Percentage of screened households that later refused (This includes cases that were eventually converted.)	26.0%	32.2%
Average Interview Length*	24.59 minutes	9.78 minutes
Average call attempts per screening refusal	24.47 calls	23.51 calls
Average call attempts per screening limit	32.89 calls	33.48 calls
Average call attempts per unresolved residential status	15.90 calls	16.33 calls
Average call attempts per respondent refusal	14.83 calls	15.13 calls

* For TACASI cases, this includes only the amount of time an interviewer was talking to a respondent. It does not include the time a respondent spent with the TACASI computer on their own.

This translates into a substantial amount of interviewer and supervisor time and survey cost**.** The

percentiles displayed in Table 11 reinforce this notion. At the 25th percentile, TACASI only required 1 more call attempt per completed interviewer. By the 50th percentile, this increased to 2 call attempts more. By the 75th percentile, it was 6 call attempts more, and finally at the 90th percentile, it was a full 10 call attempts more. All this implies that a substantially greater effort was being expended on TACASI cases trying to get response rates equal to CATI. If one examines the average number of call attempts for other case dispositions, such as screening refusals, then there is very little difference between CATI and TACASI. This again implies that it is just more work to get cooperative TACASI respondents to complete the interview.

Another telling comparison looks at screened households by mode of interview. In 26% of successfully screened households in CATI, there was a respondent who initially refused to complete the interview. This percentage increases to 32.2% in TACASI. This begins to explain the added call attempts to complete TACASI interviews. There is almost a 24% increase in the amount of refusal conversion that needs to be done. We believe that all of this reverts back to the TACASI breakoff problem and the need to call these breakoffs back immediately. A TACASI breakoff that may be simply due to call waiting, or even a small technical problem, can become a refusal if the respondent is given time to reconsider. Perhaps the window of opportunity closes quickly once a respondent is lost for any reason.

We believe that a sizable percentage of the cost overrun on this study was due to this unexpected additional effort required to pursue TACASI cases. In future studies, we would attempt to reduce this problem by some form of immediate callback of breakoffs.

VII. Weighting

The samples for both the National and Baltimore CATI and TACASI portions of this study were basically independently drawn simple random samples. The base weight, or inverse of the probability of selection for each sample is as follows:

	Base Weight
National CATI Sample	32915.9018
National TACASI Sample	32915.9018
Batlimore CATI Sample	162.6933
Baltimore TACASI Sample	162.6933

These base weights are household weights as, in effect, households were randomly selected. Within each household, a random selection of one adult from those 18 to 45 years of age was performed. Therefore, to produce person level weights, the weights just given should be multiplied by the number of eligible people found in the household. Both the base weights and the number of eligible people in the household are variables contained on the final data files.

A nonresponse adjustment should also be made to each weight as response rates differ by sample designation (i.e., National vs. Baltimore or CATI vs. TACASI). The household base weight or person weight should be multiplied by the inverse of the appropriate response rate. These rates are given in Tables 4 and 8 for the National and Baltimore samples respectively. To complicate matters, the exact response rate to use in this adjustment will vary depending upon which

variables are under analysis. This is due to the partial interviews discussed earlier. All rates are again displayed in Tables 4 and 8.

It should be emphasized that no post-stratification adjustments have been applied to any weights. It might be advisable to take person level weights, appropriately adjusted for survey nonresponse, and further adjust them to independent estimates of population characteristics such as age group, gender, and race. The 2000 Census would be an advisable choice to produce such independent estimates. Such a post-stratification adjustment could guarantee that any differential nonresponse by age, gender or race is accounted for, and survey estimates of the size of age by gender by race subgroups are in complete agreement with the best available Census estimates. It should be pointed out that such adjustments assume that nonrespondents within any age by gender by race cell are, on average, like respondents from that cell. This may or may not be true, but probably is a reasonable assumption considering the lack of information on survey nonrespondents

One additional weighting topic should be mentioned. The National and Baltimore samples, as drawn, were independent and not intended to be merged into one sample. It is advisable to analyze each of these samples separately. Merging of these samples could be accomplished by appropriately adjusting the weights. Still the result of any such merge would not likely increase the accuracy of any survey estimates. The city of Baltimore is such a small piece of the National sample, that adding the additional Baltimore interviews could not affect the accuracy of National estimates by any significant amount. Conversely, so few National sample interviews would be from the city of Baltimore, that adding them to the Baltimore sample would have little to no overall effect. It is advised, that these two samples remain separate and analyzed as such.

VIII. Conclusions

In general, this study proved to be difficult, quite challenging, and in the end very enlightening. From a technological standpoint, it was very important to learn that conducting interviews in Boston and transferring them to a computer in North Carolina could be accomplished quite easily. Minor difficulties could always show up such as a help line that was sporadic and some connections which were less than acceptable. But overall, these were minor and all were able to be solved. Considering the future, TACASI looks very promising technologically.

It was also very heartening to see that a group of interviewers could become very adept at asking the most sensitive questions of respondents. They could do this while achieving a very good response rate and not creating ill will among respondents. These facts indicate that CATI interviews can be conducted even with the most difficult questions imaginable. Comparisons of the answers to these sensitive questions between CATI and TACASI should prove extremely informative.

While it was felt that this study went quite well, there is still room for improvement. It will be necessary in the future to show that TACASI can achieve response rates as high or higher than CATI on a consistent basis. As we have noted throughout this report, experimentation in trying to reduce the number of breakoffs, and quickly getting back to respondents who do breakoff will be necessary to improve TACASI response rates and reduce TACASI costs. We believe this is highly possible and simply needs additional effort to discover the best road to success.

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