

What is Gained From Additional Call Attempts & Refusal Conversion and What are the Cost Implications?

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1. Introduction

There is no consensus amongst survey organizations on the maximum number of call attempts and the amount of refusal conversion that is needed on telephone studies that use a random digit dial (RDD) sample. Many organizations use a different number of call attempts and varying refusal conversion strategies for each of their studies. Effort is usually related to two factors, the budget and the time frame. Given a limited budget, making a large number of call attempts or attempting to convert refusals may not be economically feasible. Similarly, a study that must be completed in a short time period may not allow for enough time to make a large number of call attempts.

This paper is a study of telephone call attempts for random digit dial (RDD) telephone surveys. This is a working paper in which I update on an annual basis and make available on my web site (<http://mywebpages.comcast.net/ttriple13/papers.html>). The paper is divided into ten sections with this introduction being the first section of the paper. The second section of this paper reviews research that has investigated the relationship between gaining higher response rates (through additional call attempts and refusal conversion) and survey costs. The third section of this paper will briefly describe the data collection methods used by the University of Maryland's Survey Research Center. The fourth section of this paper summarizes some of the more significant findings from the University of Maryland's experience. This section will also discuss various call back strategies and recommend a strategy that provides the highest possible response rate given a reasonable survey budget. The fifth section will look at some of the trends over the past 10 years. The sixth section of this research paper shows how the quality of interviews from respondents who initially refuse may not be as good as interview data from respondents who do the interview without ever refusing. The seventh section shows that it is optimal to wait one week before converting informant refusals and two weeks before converting respondent refusals. The eighth section of this paper discusses the various tables and charts that have been put together to help examine the issue of making additional call attempts and refusal conversion. The final two sections of this paper are the references section, followed by an appendix containing the tables that were used in the analysis.

2. Other Call Attempt Research

Numerous studies have investigated the issue of how much additional effort an organization should make in attempting to reduce non-response. They support Kish's (*Survey Sampling*, 1965, pp. 550-51) dicta that new responses must be numerous enough to justify the effort and that decreasing the proportion of non-response is important only if it also reduces its effect. The first assumption is an issue of cost and is addressed in this paper by looking at the costs of calling back telephone numbers versus using additional RDD telephone numbers to obtain the required number of completed interviews. The second assumption is an issue of whether the respondents reached after multiple call attempts or refusal conversion differ. This chapter makes the point that those reached after refusal conversion and multiple call attempts do indeed differ.

Another key point discussed in Chapter 13 of *Survey Sampling* is the notion that call backs do not need to be the same over the entire sample, but can be varied for different parts of the sample. This strategy is not discussed in this paper, but could be an approach worth considering for survey projects. If interested in reviewing a survey project that successfully used the approach of targeting callbacks and refusal conversion by area see Chapter 9 of *Incomplete Data in Sample Surveys* (*Incomplete Data in Sample Surveys*; 1983, William G. Madow, pp. 377-381).

Research done by James Massey et al., 1981, found that respondents who initially refuse, but later in the study complete an interview, are disproportionately, persons 65 years or older. This study also found that male respondents were more difficult to reach than female respondents. William C. Dunkelberg and George S. Day (Nonresponse and Callbacks in Sample Surveys, 1973) found that the first attempt to contact respondents yields only 25 to 30% of the final sample. They also observed a rapid decline in completing interviews after three attempts. However, they found that more than 20% of the interviews required more than four attempts. They also found that respondents reached on the first few contacts were different from those found at home later in the interviewing process. Specifically, they note that younger adults, higher income adults, and respondents from larger cities require more contact attempts. The data gathered for this paper supports all of these authors' findings. It is somewhat surprising that the findings by Dunkelberg and Day agree with the finding of this paper, considering their data was based on "personal" interview data from the 1967 and 1968 (30 years ago) "Survey of Consumer Finances", conducted by the University of Michigan.

Research on telephone studies has consistently shown that with more call backs the final sample becomes younger, with higher proportions of men and black respondents (Blair, O'Rourke, 1983; Merkle, 1993; Traugott, 1987; Shaiko, 1991). The data analyzed in this paper supports these findings. Two of these papers found that highly educated respondents require more call attempts, but this finding is not consistent with some of the studies reviewed for this paper. A report from the 1986 U.S. National Crime Survey (Sebold, 1988) did not find differences in gender and race between the initial households and the follow-up households. This research did find that the initial interviews contained proportionally more respondents 65 years or older. The definition of the follow-up group in this study included unanswered telephone numbers, which could be a reason for explaining the non-finding of differences by gender and race.

The telephone studies used in this research were primarily completed in the 1990's. Many of the studies reviewed for this paper were from telephone studies conducted in the 1970's and 1980's. The results in terms of number of calls needed to complete an interview, difficulties of reaching certain demographic groups, and percentage of the sample completed in the first three calls has maintained similar patterns. These results are quite similar to the Groves and Kahn 1979 findings in Chapter 3 of their comparison of telephone versus personal interviews book. However, compared to ten years ago, more call attempts are needed, 18 to 24-year-old respondents and non-white respondents are harder to contact, and fewer interviews are completed in the first three call attempts. Another clear difference with the 1990 studies is the drastic reduction in the ring no-answer category and the large increase in telephone numbers that are answered by a home recorder. This paper does not examine this issue in detail, but the results tend to support the hypothesis that home recorders have not had much effect on telephone surveys.

The home recorders seem to have substituted for the ring no-answer group. Assuming the majority of home recorders are households, the home recorder has improved response rate estimates. Papers by Robert Oldendick (1993), Tom Piazza (1993), and Peter Tuckel (1996) look more closely at the effects of home recorders, raising some concerns over the affect home recorders may have on the representativeness of general population samples. In the most recent decade the telephone system in the United States has undergone rapid change, which has made it more difficult for survey research firms using RDD sampling methods to identify residential households (Tucker, Lepkowski and Piekarski, 2002).

Telephone studies reported in this paper are from various times of the year. Research (Vigderhous, 1981; Steeh, Groves, Comment, and Hansmire, 1983) has shown that response rate varies, depending on which month you are calling. While most of the research reported in this paper is from studies conducted in the fall and spring, the studies conducted in the winter and summer do have a few unique call attempt results.

Research on call attempts is a necessary procedure for reducing non-response. In determining the optimal number of call attempts, one should be aware of the work that Michael Weeks and James T. Massey have done (Weeks, Jones, Folsom Jr. and Benrud, 1987; Massey, Wolter, Wan, Liu, 1996) in determining the optimal times to contact sample households. This work has lead to development of optimal time scheduling for telephone surveys (Weeks, Kulka, and Pierson, 1987; Greenberg, B.S. and Stokes, S.L., 1990). To determine the optimal number of call attempts for a general population random digit dialing study, a survey research operation should be aware of what the optimal times are to reach the majority of your sample. It is from this work that we get clear data showing the advantages of weekday evening and weekend calling over daytime calling. By following the recommendations of this research, an organization can begin to minimize the overall call attempts needed on a study.

Refusal conversion increases response rates and usually changes the final demographic sample distribution. However, there have been several studies (Triplett, Blair, Hamilton, and Kang, 1996; Cannell, and Fowler, 1963; Lavrakas, Bauman, and Merkle, 1992) showing that there were data quality concerns when comparing the information provided by reluctant respondents (respondents that initially refused to participate in a study) to those respondents who never refused to cooperate. Therefore, in determining the appropriate refusal conversion effort, an organization needs to consider more than just the response rate. While these studies do not argue for the elimination of refusal conversion, they do raise a concern over the accuracy of reporting on difficult survey questions.

Finally, refusal conversion involves waiting for a better time to call and try again (Groves, and Couper, 1998). One study (Triplett, Scheib, and Blair, 2001) argues that the optimal number of days to wait is approximately one week for most refusals, and two weeks for refusals where the actual respondent refused the interview. The need to wait before attempting refusal conversion makes it more difficult to convert refusals with people who are hard to contact by phone.

3. University of Maryland's Data Collection Procedures

This is an ongoing research project that is updated on an annual basis. The analysis done in the current report comes from the call results of 27 University of Maryland Survey Research Center's random digit dialing (RDD) surveys conducted from 1989 to 2001. The Center usually conducted at least two RDD surveys a year. All RDD studies used in this research were either Maryland statewide studies or nationwide RDD studies that excluded Hawaii and Alaska. All studies were conducted from the University of Maryland's Survey Research Center's telephone facility located on the College Park campus. The sample size for these studies had usually been approximately 1,000 completed interviews (with the exception of four larger nationwide studies consisting of 1,232, 1,443, 1,750 and 1,501 completed interviews) and the sample design has been either a two stage Mitofsky-Waksberg cluster sample or a one plus list-assisted sample design. When the Center used a one plus list-assisted sample design, a random sample of telephone numbers excluded from the list-assisted frame was often added to the sample. For the Mitofsky-Waksberg sample designs, the average cluster size was between 6 and 8. All studies prior to the fall 1995 studies used a Mitofsky-Waksberg sample design; since then, all studies used a one plus list-assisted sample design. Telephone calls on these studies were spread over a four to seven week period. The final response rates for statewide RDD studies ranged from 55% to 79%, while nationwide response rates ranged from 45% to 69%.

The following rules apply to all RDD samples worked at the University of Maryland:

- 1) No answers were not finalized until they have been called at least twenty times, with at least four attempts made on both Saturdays and Sundays and at least four attempts during the daytime, early evening, and late evening weekday shifts.
- 2) Except for the most difficult refusals, the Center attempted to convert all first refusals. (Second refusals were also often called back.)
- 3) Once it was determined that the phone number was a household, the Center made at least 25 call attempts before finalizing the case. More than 25 calls occur for households that either did not get enough call attempts at certain times during the week or had recently requested that the Center call them back.
- 4) Within each sample household, a respondent was selected at random from among all adults ages 18 or older. The selection of the respondent was usually done using the "Next Birthday" selection method. However, for a few of these studies, the Center used a household roster approach where a random person was selected after a complete listing of adults was obtained.

4. Summary of Call Attempt Findings

The range of final response rates for the fifteen statewide studies has been between 54.6% and 79.3%. Since the Center randomly selects one respondent per household to interview, the response rate is calculated as the total number of completed interviews divided by the total number of households in the sample. The total households used in the denominator of the response rate includes completed interviews, refusals and break-offs, failed call backs, max calls to home recorders and respondents who are unable to conduct a telephone interview due to a health or language barrier. These final statewide response rates were increased on average about seven percentage points by completing interviews in households where the interview was initially refused. This improvement in response rate has been as large as 10.1 and as little as 5.2 percentage points.

The final response rates for the ten full nationwide studies ranged from 43.8% to 68.9%. The lower national response rates are probably in part due to the diminished salience of the University outside the State of Maryland. For the nationwide studies, reworking refusals has increased the response rate a little more than eight percentage points on average, ranging from an increase of 4.1 to 12.8 percentage points. Reworking refusals has been slightly more important on nationwide studies than statewide surveys. Chart 1 shows the final response rates for all eleven nationwide studies analyzed and the corresponding gain in response rate from reworking refusals.

Chart 2 shows the same information for eleven of the statewide studies.

All the nationwide studies and all but two of the statewide studies analyzed in this report fell short of achieving a response rate of fifty percent after four call attempts had been made. Going from three call attempts to four calls improves the response rate between 2.7 and 7.3 percentage points. Going from four call attempts to six call attempts increases the response rate between 5.8 and 10.2 percentage points. Interestingly there is not a perfect correlation between the response rate after three calls and the final response rate. For example, after three call attempts, the Fall 1990 study had the second highest response rate but finished with a final response rate of less than 70 percent. This demonstrates that it is possible to accomplish a good final response rate on studies that do not get off to a good start. Chart 3 shows for each nationwide study how much response rate increases when additional call attempts are made. Chart 4 shows the increase in response rate from additional call attempts for each statewide study.

In most of the studies conducted in 1989 and in the early 90's, the data consistently shows that after 20 call attempts, making an additional five or more call attempts results in a less than one percentage point improvement in the final response rate. However, in more recent studies the Center has increased response rate by almost four percentage points with the nationwide spring 1995 study yielding a 6.2 percentage points increase by making more than 20 call attempts. After 15 call attempts, an additional five call attempts increases the final response rate between one and four percentage points. From a response rate perspective, a cutoff point of 20 call attempts seems to be most reasonable. For extremely important studies making more than 20 call attempts (particularly on recent callbacks) may be worthwhile since this usually nudges the final response rate up by at least $\frac{1}{2}$ percentage point. More recent trends have shown the gain could be as much as four percentage points. Survey researchers that are calling an RDD sample

Chart 1

Response Rates Before & After Refusal Conversion
(Nationwide RDD Studies)

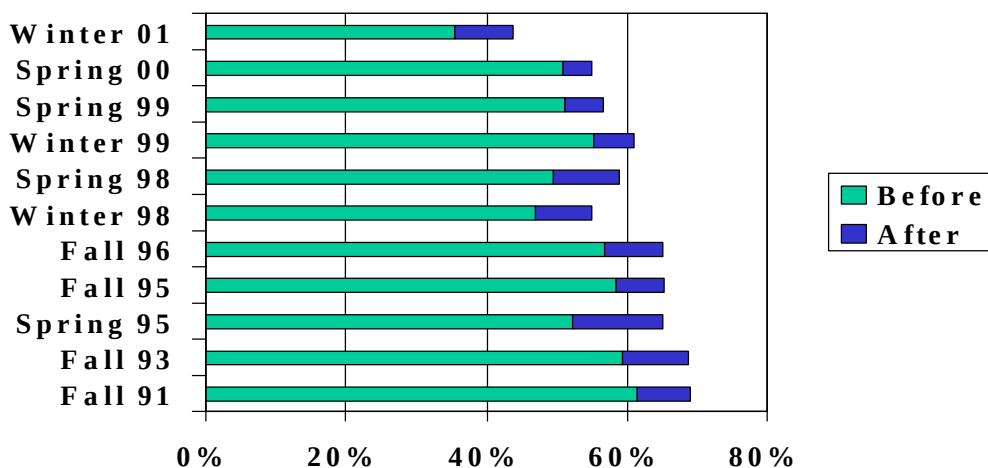


Chart 2

Response Rates Before & After Refusal Conversion
(Maryland RDD Studies)

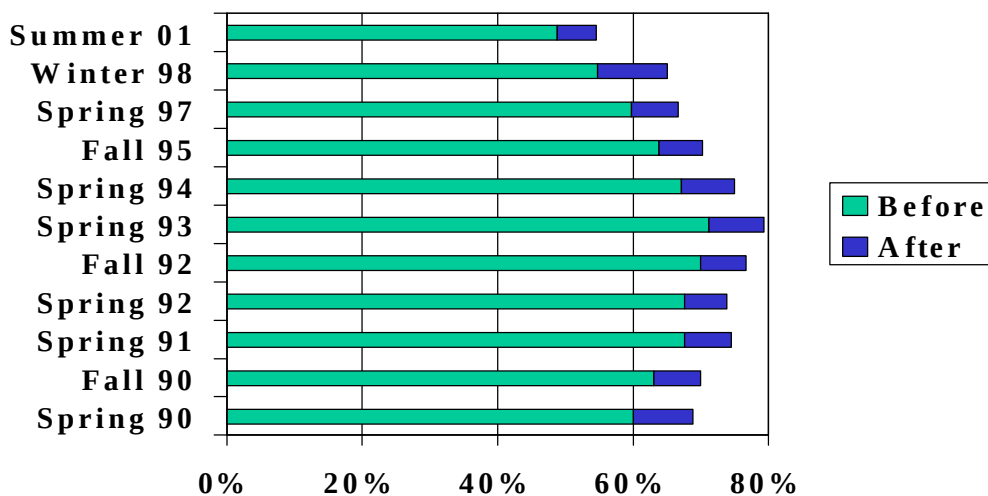


Chart 3

Response Rates Before At Various Call Attempts
(Nationwide RDD Studies)

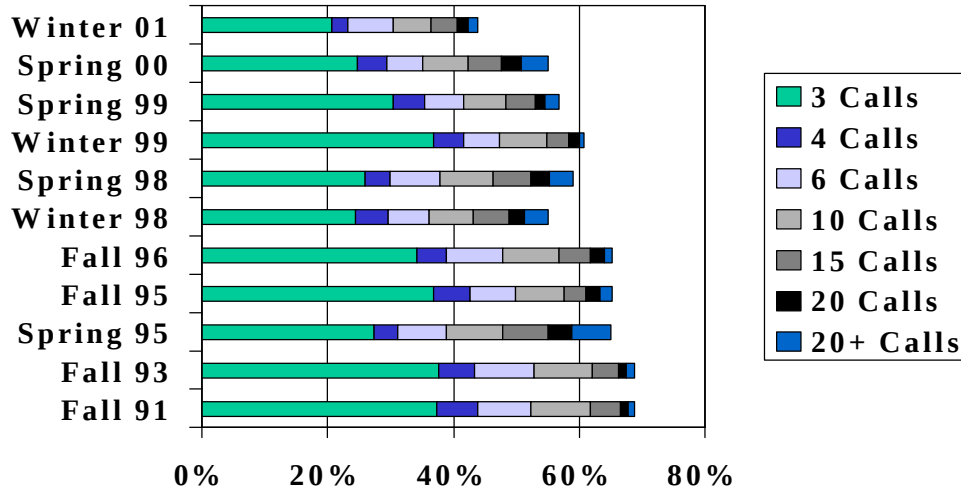
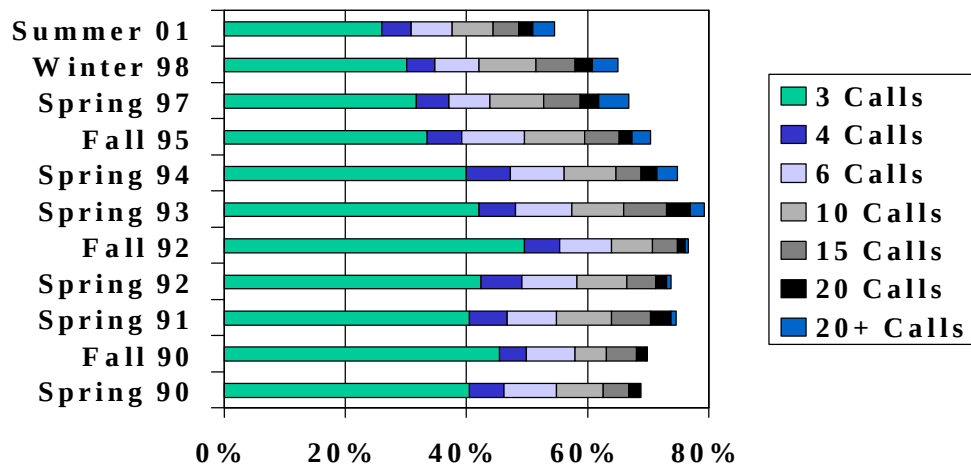


Chart 4

Response Rates Before At Various Call Attempts
(Maryland RDD Studies)



should consider making up to 20 call attempts. The reason for making 20 call attempts is that the final response rate on average increases 2.4 percentage points by making 20 call attempts rather than 15 call attempts. However, in order to call the entire sample 20 times with call attempts made at different times and days, a reasonable field period is necessary. The studies in this report had field periods of approximately four to seven weeks, in which making up to twenty five call attempts was not a problem.

What are the characteristics of people who are difficult to reach in telephone surveys? In all but the most recent national study, male respondents required more call attempts to complete an interview than female respondents. The ten-year trend however shows that women are becoming just as difficult to reach as men. Respondents from Baltimore City and urban Maryland counties required more call attempts to complete an interview than respondents from the more rural counties of Maryland. Black respondents have always required more call attempts with the exception of one summer study. Those respondents who completed college, but did not go on to graduate school always required more call attempts. However, for those college graduates who did go on to graduate school, about half the studies showed that they required fewer calls to complete an interview. Respondents who are divorced, separated, or have never been married, consistently required more effort to complete an interview than respondents who are married or widowed. As expected, reaching respondents who are employed on a paid job required more call attempts than interviewing those not employed. Finally, interviewing respondents from households that contained more than one residential phone line required more call attempts than respondents from households that only had one residential phone line.

A somewhat surprising result is that the difficulty of reaching respondents of different age groups varied from study to study. Respondents fifty-five and older were easier to reach and required fewer call attempts. However, all other age groups (including respondents eighteen to twenty-four years old) sometimes required more call attempts to complete an interview than the overall average; on other studies, the same age group required less than the average. The presence of one or more children in a household was not a consistent factor in how many call attempts were needed to complete an interview. In some studies, respondents from households without children under the age of eighteen were easier to reach; on other studies respondents from these households required more call attempts. This result holds true for respondents from households with one child, two children, or households with three or more children.

On the Fall 1989 Maryland Poll and the Spring 1998 Nationwide study the Center asked the question: "Do you live in an: apartment, detached single family house, townhouse, or something else?" The results from this question suggest that respondents from detached single-family homes require less call attempts to complete an interview. Both these studies, show that respondents from townhouses required well above the average call attempts to complete an interview. Chart 5 shows the mean number of call attempts it takes to complete an interview with those groups of people who are more difficult to reach in nationwide studies. Chart 6 shows those same hard to reach demographic groups using statewide data.

How does the number of call attempts and refusal conversion alter your final demographic distribution? Getting respondents who initially refuse to complete an interview does not necessarily improve the final demographic sample distribution. In telephone surveys, female respondents are usually over-represented in the final sample. Sixty-eight percent of

Chart 5

Average Number Of Calls To Complete An Interview
(Nationwide RDD Studies)

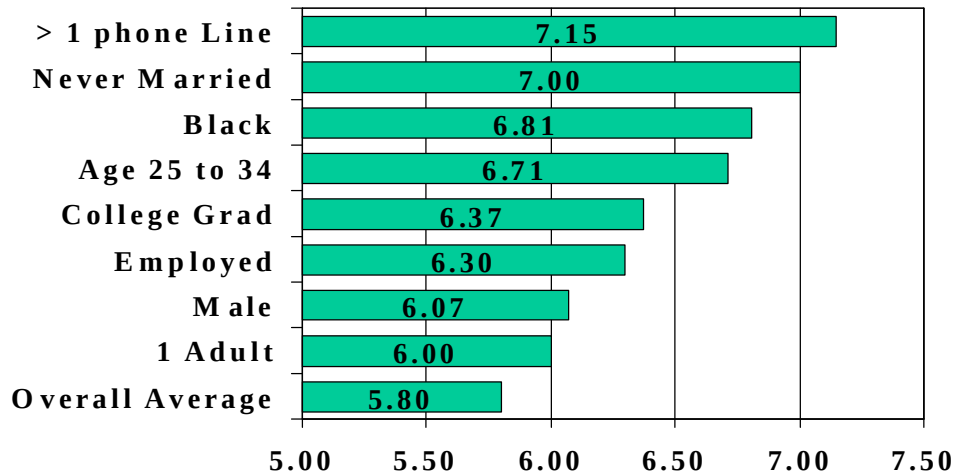
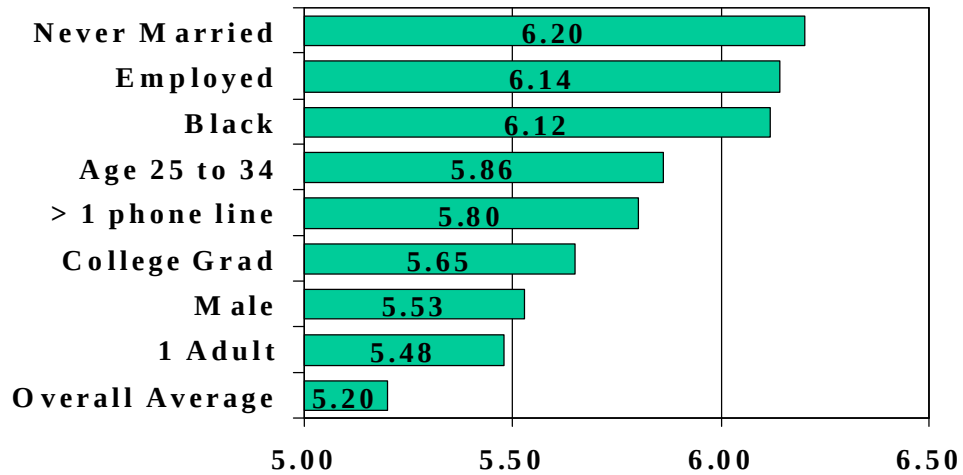


Chart 6

Average Number Of Calls To Complete An Interview
(Maryland RDD Studies)



respondents who initially refuse, but later complete an interview, are female. Therefore, reworking refusals has actually increased the female to male ratio. Otherwise, refusal reworking has helped increase both the number of respondents over the age of sixty-five and respondents who have not completed high school. These older respondents and less educated respondents are typically under-represented in telephone surveys.

Completing interviews in households where a home recorder had been encountered, increased the number of interviews completed in urban areas, single adult households, and households with no children under eighteen living there. Also, reducing the number of home recorders in the non-completed sample, increased the percentage of educated respondents and respondents under the age of thirty-five interviewed. Completing interviews in households that were previously ring no answer increased the number of interviews in rural areas, single adult households, and households with no children under eighteen. In addition, reducing the number of ring no answers remaining in the non-completed sample, increased the percentage of less educated respondents and respondents fifty-five years of age and older interviewed.

In order to reduce the number of unresolved home recorders for nationwide studies, Sundays were found to be the best time to call. However, calling unresolved home recorders in nationwide studies on Saturdays has proven to be no more efficient than working those same numbers during the week. For Maryland statewide polls however, it has been more effective to call home recorders on both Saturday and Sunday. For both the nationwide and the Maryland statewide polls, calling ring no answers on the weekend has not been any more efficient then calling those same numbers during the week.

Another way of changing final demographic sample distribution is to increase the number of call attempts made on all sample that has not resulted in a completed interview. Making additional call attempts increased the percentage of male respondents, black respondents, eighteen to twenty-four year old respondents, and respondents who have never been married in the sample. However, these additional call attempts decreased the percentage of respondents sixty-five years of age or older and respondents who have not completed high school. Chart 7 (nationwide data) and Chart 8 (statewide data) show, for various demographic groups, the percentage of the respective groups total interviews completed on the first call attempt. These two charts demonstrate how important additional call attempts are in producing a more representative sample distribution.

What about the cost of additional call attempts? By far, the largest cost associated with telephone data collection is paying for the interviewers and supervisors time. Another significant cost are the phone charges. Both of these cost factors are affected by the how many telephone calls are made. To minimize costs, one could ignore response rate and try to minimize the total call attempts needed to complete the target number of interviews. Calling would stop when "fresh" sample (new telephone numbers) has a greater probability of yielding a completed interview. A few years ago the data used in this report showed that a minimize cost theory would lead to stopping after the third call attempt in both the nationwide and Maryland RDD studies. Since then, a minimize call attempt approach would only make two call attempts for both Maryland and nationwide RDD studies. This suggests that information gathered after the first call attempt does not make the likelihood of completing an interview on your next call attempt

Chart 7

Percentage Completed On First Call Attempt
(Nationwide RDD Studies)

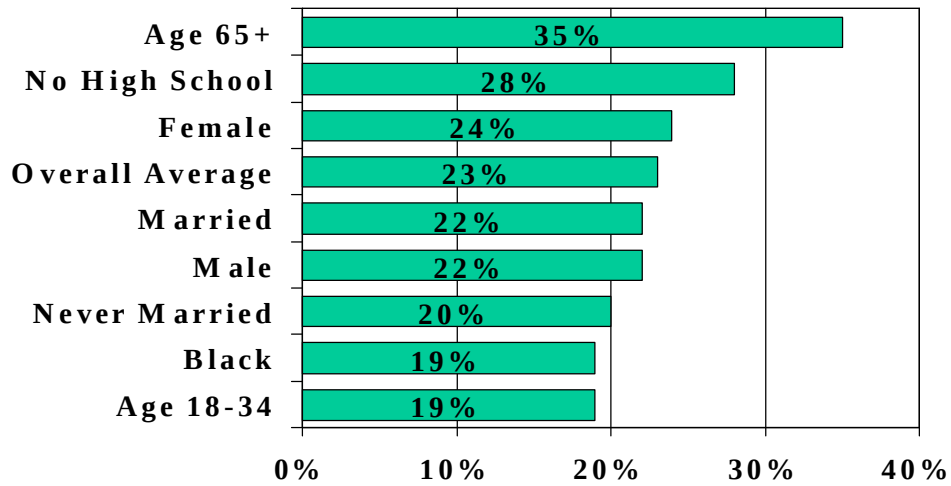
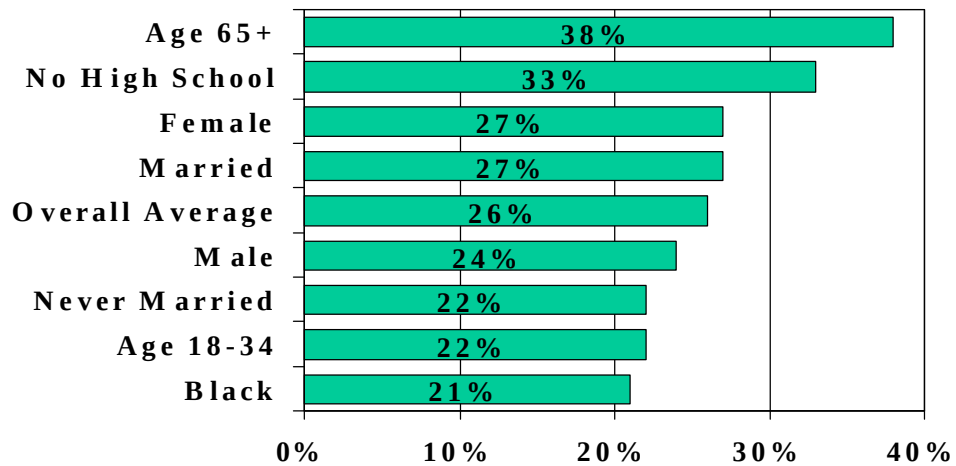


Chart 8

Percentage Completed On First Call Attempt
(Maryland RDD Studies)



any better than making a call using a fresh sample.

In Maryland statewide studies, the second call attempt produced completed interviews at a higher rate than new numbers and the third call attempt had about the same success rate as new numbers. By the fourth call attempt, new numbers are clearly more productive, since interviews are completed 7.1% of the time compared to 8.9% for a first call. For nationwide studies, the second call attempt also produced completed interviews at a higher rate than new numbers, but the third call attempt produced a completed interview 6.9% of the time, compared to 7.3% for a first call. Chart 9 (nationwide) and Chart 10 (statewide) show the total calls needed to complete an interview on different call attempts. A major problem with the minimize cost position is that after two or three call attempts, a study's response rate would be between 25 and 40 percent lower than the response rate that is achieved after making twenty to twenty-five call attempts.

A variation on the minimize cost approach would be to allow call attempts beyond three calls for households in which a resident of that household requested that someone call back. The fourth call attempt to households in which someone asked the Center to call back, yielded interviews 11.4% of the time on statewide studies. The fifth call attempt on requested callbacks produced interviews 9.3% of the time on statewide studies. It was not until the sixth call attempt on statewide studies (8.3%) that it became clearly less productive to make call attempts to households requesting a callback versus calling fresh numbers. Thus, a true minimize cost model for Maryland statewide studies would allow three call attempts on all phone numbers and two additional call attempts for phone numbers where a household was identified and a person requested that the Center call back. However, for nationwide studies, a two call attempt rule with a third call attempt only for requested callbacks would be optimal. Nationwide, the fourth call attempt to households that requested a callback yielded interviews only 7.0% of the time. Since the fresh nationwide sample yields interviews 7.3% of the time, there is no economic incentive in making more than three call attempts in nationwide studies.

One problem with looking at call attempts needed to reach different demographic groups is that there is a known correlation between demographic groups. For instance, it took fewer call attempts to reach respondents with children and less attempts to reach respondents who are married. Since there is a strong correlation between marital status and having children, it is difficult to tell which is more important in determining the average call attempts. One solution would be to create a multiple regression equation that would look at the joint effect of all the key demographic variables. In this paper, an ordinary least squares regression was run separately for both the Maryland data and the national data. The dependant variable was the total number of calls, and the independent variables were the demographic variables, education, number of adults, age, gender, race, marital status and presence of children. Means were substituted for missing data, there was no missing data for total number of call attempts.

In both the national and Maryland regression analysis, age of the respondent is the most important factor in determining the number of call attempts. The older you get, the easier you are to reach. Using a .05 significance test, size of household, and the presence of children was not found to be significant determinants of call attempts in both the national and Maryland regression models (though presence of children in the Maryland model had a significance level right at the .05 level). Race was a significant factor in both the Maryland and national models. Non-white respondents required more call attempts. Marital status was also significant factor in both the

Chart 9

Total Numbers Dialed to Complete an Interview on Different Call Attempts
(Nationwide RDD Studies)

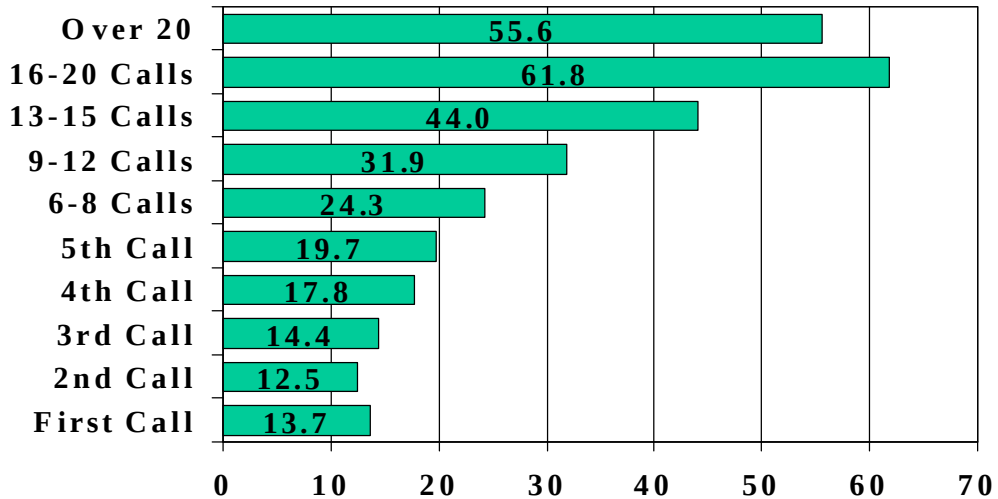
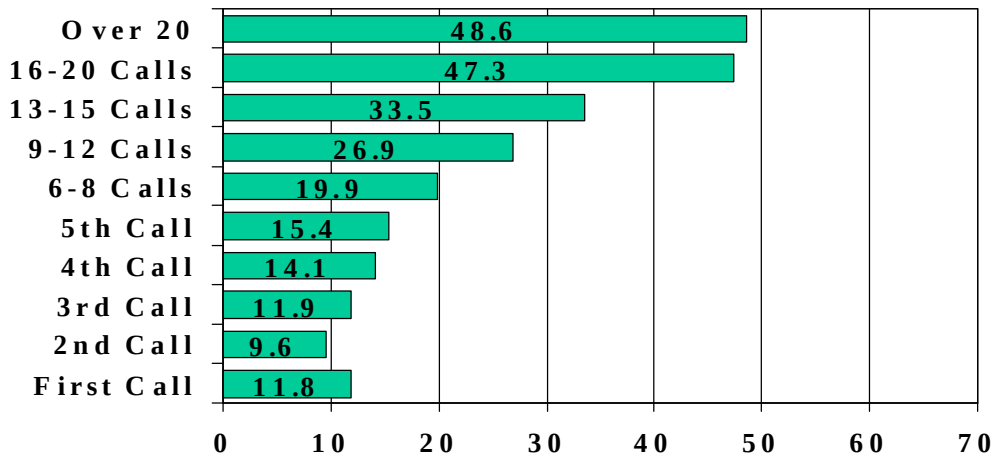


Chart 10

Total Numbers Dialed to Complete an Interview on Different Call Attempts
(Maryland RDD Studies)



Maryland and national models. Respondents who were never married were found to be more difficult to reach. Gender was a significant factor in both the models, with males respondents being more difficult to reach. Finally, education was a significant factor in both the nationwide model and Maryland statewide model with both models showing that less educated respondents were more difficult to reach.

Recommendations: Because of the large non-response the minimize cost approach would not likely be a practical approach to survey research studies that require high response rates. If cost was not an issue, a simple maximize response rate theory would allow unlimited call attempts until all respondents either refused to cooperate or completed the interview. In the real world, unlimited call attempts is never an option, there are always both budget and time constraints. While more call attempts never lowers response rate, each call attempt after the third call contributes less to the overall response rate. For most of the studies, after fifteen call attempts the gains in response rate from more calling decline dramatically. However, in the more recent studies, making more than 15 call attempts increases response rates six to eight percentage points, compared with two to five percentage points in earlier years. In addition, increases in response were almost negligible after twenty calls in earlier studies, while contributing about a four to five percentage point increase in response rates in the most recent studies.

From a cost perspective, the efficiency of working the sample declines linearly after the third call attempt until around the fifteenth call attempt. After fifteen call attempts, the cost efficiency of working sample gets dramatically worse (see Charts 9 & 10). Based on the data used in this report, it is my recommendation that a practical maximize response rate rule would be to limit call attempts on telephone numbers to fifteen call attempts. However, with the more recent studies showing significant increases in response rate by making more than 15 call attempts, survey organizations may want to consider increasing call attempts beyond 15 calls for studies that have appropriate budget and time schedule. In addition, for those households where a call back was recently requested, additional call attempts should be allowed. The number of additional call attempts for households who requested that they be called back should be determined by how long ago they requested a call back, the information provided at the time of the call back request, and the project length.

5. Call Attempt Trends: The Past 10 Years

In the past 10 years, the average number of call attempts needed to complete an interview increased 30% on national studies and 54% on statewide projects. In the same time period, response rates fell 13.5 percentage points on nationwide studies and 7.4 percentage points on statewide studies. These trends are alarming, and, if they continue, they will jeopardize the validity of using the telephone to collect data. These patterns appear to be true at organizations other than the University of Maryland. To combat the response rate and call attempt problem, many survey research organizations (including the University of Maryland) have begun offering cash incentives to respondents to complete telephone surveys. Some researchers have begun to question whether telephone data collection alone will continue to be as important as it has been over the past 30 years.

One possible reason call attempts are increasing is that there are fewer completions on the first call attempt. However, during the past 10 years, there has only been a 7.% decline nationally, but a more substantial decline of 45% statewide in the number of telephone interviews completed on the first call attempt. The Survey Research Center is also seeing a great proportion of completed interviews done on the weekend. Nationally, there has been a 31% increase in interviews completed on the weekends and a 23% increase on statewide studies.

Besides the increase in call attempts and decline in response rates, in the past 10 years there has been an increase in households using an answering machine/home recorder. Nationally, there has been a 57% increase in completed interviews with households that previously the Survey Research Center was able to only reach an answering machine. This increase in previous answering machine households was 44% in the statewide studies. These increases were driven by the increased penetration of the home recorder/answering machine into United States households. However, it also has been argued that there is an increasing number of households using answering machines to answer the phone even when there is a person at home.

While answering machines are on the increase, there has been a decline in households where the phone is not answered. Nationally, in the past 10 years, there has been a 100% decline in interviews completed in households that the Center had previously only encountered a ring no answer. Similarly, there has been a 88% decrease statewide in interviews completed in households that previous attempts had only yielded a ring no answer. The increasing use of home recorders/answering machines certainly explains much of the decline in the ring no answer households. Currently, less than 10% of completed interviews, nationally and statewide, are from households in which all previous call attempts yielded a ring no answer. Chart 11 (national) and Chart 12 (statewide) show what the sample status of all completed interviews over the past ten year was just prior to completion. In both of these charts the percentage of households that were home recorders prior to completion is greater than the percentage of households that were ring no answer prior to completion.

Chart 13 (national) and Chart 14 (statewide) show some of the trends over the last 10 years. These graphs display the increased importance of contacting households that use home recorders and the decline of success on the first call attempt. Table 10 in the Appendix provides additional trend data including response rate and total call attempt information.

6. Response Differences of People Who Initially Refuse

Refusal conversion in telephone surveys is a standard practice at most survey organizations and accounts for a significant percentage of the final sample. The rationale for refusal conversion is to increase response rate and hence reliability. But, in achieving this goal, we must also be alert to potential unintended effects on data quality.

There have been analyses of how reluctant responders differ from others on the distribution of their answers to substantive questions, as well as how these two types of respondents compare demographically (see Lavrakas et al. 1992 for a review of these results). An analysis of differences between responder groups in a large study reported by Lavrakas et al. (1992) found some demographic differences. However, these lines of research do not address the

Chart 11

Percent of Interviews Completed That Were A
(Nationwide RDD Studies 1989-2001)

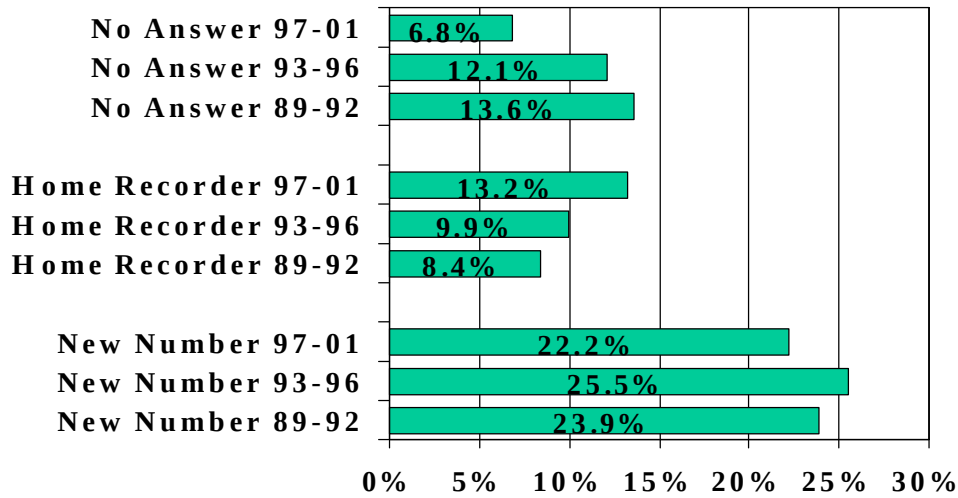


Chart 12

Percent of Interviews Completed That Were A
(Maryland RDD Studies 1989-2001)

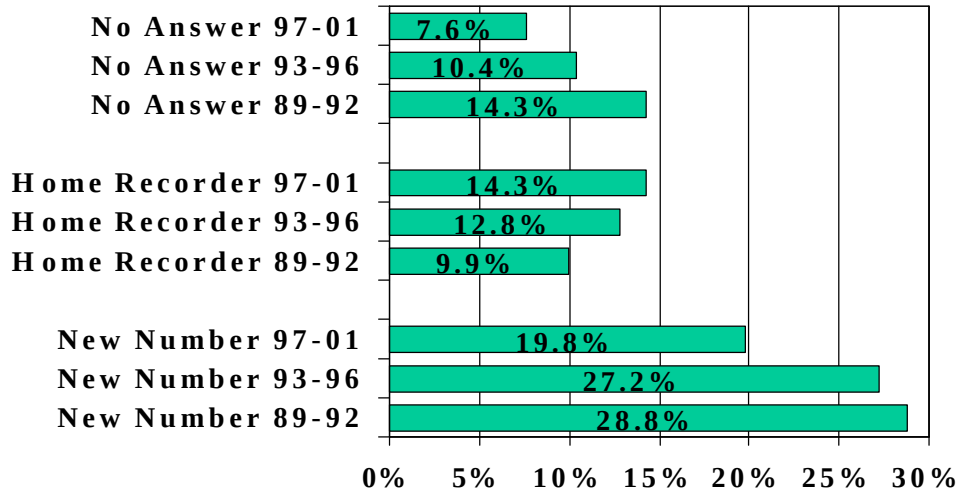


Chart 13

Sample Status Prior to Completion
(Nationwide RDD Studies)

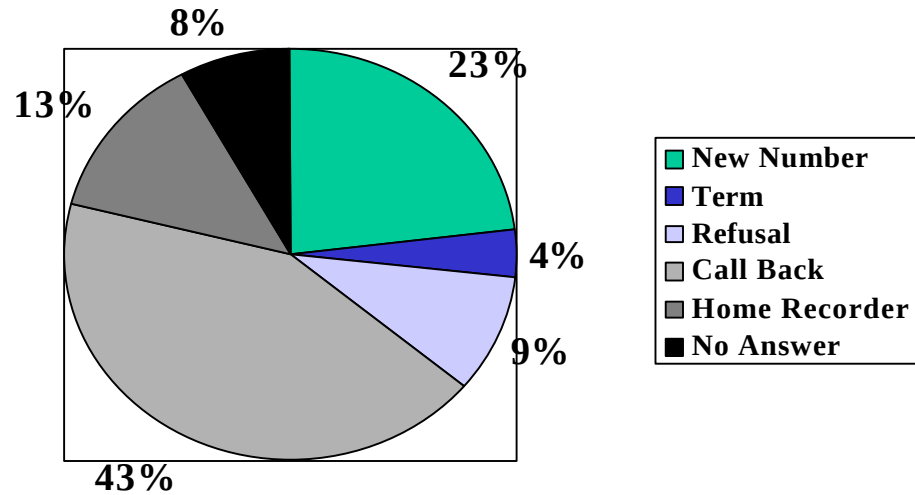
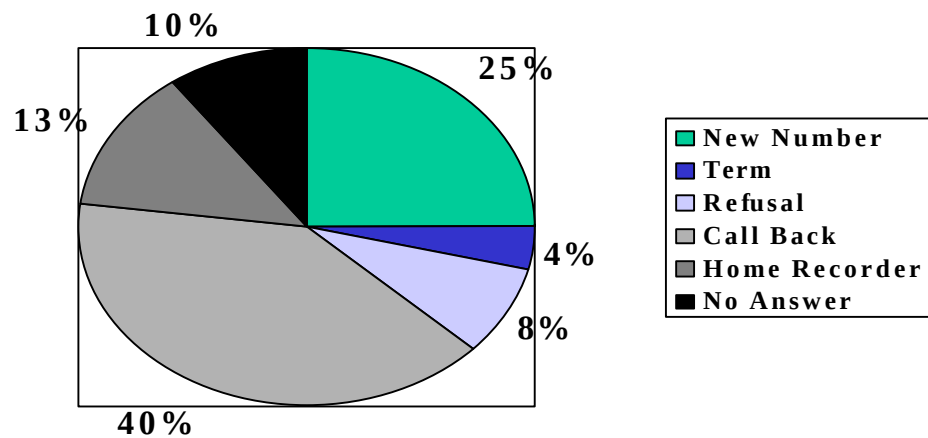


Chart 14

Sample Status Prior to Completion
(Maryland RDD Studies)



question of whether reluctant respondents may have other response behaviors that bear on the quality of the data obtained from them.

Over 30 years ago, Cannell and Fowler (1963) found that reluctant respondents provided less accurate data. They attributed this effect mainly to lower respondent motivation. Citing this result some years later, Bradburn (1984) stated the issue more generally, suggesting a possible effect of interviewer persistence on response behaviors. He asserted "There are... a number of people who end up responding because they have given up trying to fend off the interviewer...[and]..go through the interview quickly-- in other words do it but don't work hard." Of course, it may also be that 19 respondents who are reluctant to participate also simply have less interest in the survey topic. While it would be difficult to disentangle these possible effects, both are likely to be in the direction of decreasing the effort respondents give to answering the questions.

The amount of cognitive effort required may be affected by the type of question, for example, a simple yes-no item versus an open-ended question. Effort may also vary by recall task, such as a question that asks about a simple attribute such as the respondent's age versus asking for the respondent's detailed medical history. In addition to these factors, effort may be affected simply by how motivated the respondent is to provide an answer. This reduced effort may be stated in terms of cognitive strategies respondents use. One result of low motivation for example, may be to provide the minimum response that will satisfy the interviewer and allow the interview to proceed, with the hope of ending it as quickly as possible. Krosnick and Alwin (1987) have termed this general behavior for minimizing cognitive effort "satisficing." In a survey interview, this could result in such respondent behaviors as increased item refusals, or "don't know" responses, more primacy and recency effects in selecting from a list of response categories, and reduced completeness of answers to open-end questions.

While many respondents may satisfice, it seems reasonable to expect a higher likelihood of satisficing by respondents who were reluctant to participate in the survey. This brings us back to the issue of refusal conversion. In an analysis of three general population omnibus RDD surveys, Blair and Chun (1992) found support for the hypotheses that converted refusers were more likely than initial cooperators to refuse to answer items or to answer "don't know." Additionally, converted refusers interviews were, as would be expected, of significantly shorter duration. The hypothesis that converted refusers would also have higher rates of primacy and recency response behaviors was not supported.

In the Blair and Chun study, there did not seem to be evidence for a competing explanatory hypothesis that reluctant respondents might simply have less knowledge or fewer opinions about the survey topics. The differences between reluctant and other respondents were consistent across the three surveys, despite widely varying subject matter. Still, on the basis of this study, that competing hypothesis could not be rejected.

I hypothesize that more satisficing behaviors will be evident among converted-refusal cases than in the sample generally. I also suggest that satisficing behavior may inadvertently be encouraged among reluctant respondents by interviewer behavior. Interviewers are aware when the respondent has previously refused. In fact, it is common to assign initial refusals to interviewers who specialize in conversion. Knowing that the respondent may either refuse a second time or break off the interview, interviewers may be more willing than they otherwise

would to accept satisficing behaviors. For example, interviewers may probe less often or less intensely for fuller responses to open-end questions, be more willing to accept a "don't know" response or a refusal to answer particular questions. If interviewers did behave in this fashion, the respondent would quickly see that satisficing behaviors are acceptable and continue to use them. As the interview progresses, it would become even less likely that the interviewer would try to change the response behaviors. So behavior reinforcement could easily and quickly develop, with obvious consequences for data quality.

In general, proxy reporting is cognitively more difficult than reporting about oneself (Blair, Menon, & Bickart, 1991). I hypothesize that higher levels of satisficing behavior would be seen among proxy reporters generally than among non-proxy reporters. The largest differences should be between proxy initial refusers and non-proxy initial cooperators. On the basis of the literature, I summarize my expectations in five hypotheses in figure 1.

FIGURE 1: HYPOTHESES

- ✂✂ Higher proportion of item non-response as measured by "Don't Know" answers and refusals
- ✂✂ Reporting fewer diary activities
- ✂✂ Less detailed activity information
- ✂✂ Proxy respondents will have higher total mean levels of satisficing behaviors than non-proxy respondents
- ✂✂ Proxy converted respondent refusers will have the highest levels of satisficing behaviors; non-proxy initial cooperators

Time Diary Study

The time diary is a technique for collecting self-reports of an individual's daily behavior in an open-ended fashion on an activity-by-activity basis. In a time-diary survey conducted for the EPA, the Survey Research Center completed approximately 10,000 telephone interviews in 1993-1994. The Center used a nationwide random digit dial telephone sample and interviewed a randomly selected adult or child in each household. For this research child interviews are excluded. The total sample size of completed adult interviews is 8,549.

There are three main reasons for choosing the time diary study for comparing initial cooperators with initial refusers. The first reason is the large number of converted refusals. The data set includes 1,112 adult respondents who reside in households where the interview was initially refused. These 1,112 respondents include two groups, converted respondent refusals, (cases in which the selected respondent initially refused) and converted informant refusals (cases in which it is likely that someone other than the respondent initially refused). There were 700 converted respondent refusals, 412 converted informant refusals and 7,437 respondents who

completed the interview without ever refusing. The second reason for choosing the time diary survey is that the interview required respondents to complete a difficult cognitive task. The respondent was asked to recall in chronological order all of their activities on the day prior to the interview. They also had to report where each activity occurred, and at what time it was completed.

The third advantage in using the time diary study is that there were 1,035 proxy interviews. These proxy interviews were conducted with adults who were asked to report on the activities of a child under the age of ten living in their household. So I am also able to investigate whether proxy reporting behavior differs between initial cooperators and initial refusals.

In addition to reporting diary activities, respondents also answered 38 pre- and post-diary questions in this study. As mentioned earlier, because of low motivation to participate in this study, reluctant respondents might expend less effort to answer questions. Therefore, it is reasonable for us to expect more instances of item non-response from converted refuser respondents among the 38 pre and post-diary questions.

Results Item Non-response

Based on our findings, converted refusers (respondent refusers and informant refusers) had higher mean items of non-response. For the total sample (proxy and self interviews), the mean of nonresponse items from converted respondent refusals (1.47) is much higher than those reported by initial cooperators (0.25) and converted informant refusals (0.32). The same result was also found in the adult sample. The mean of item non-response for converted respondent refusals (1.58) is also higher than that reported by initial cooperators (0.26) and 5 times that of converted informant refusals (0.32). (These results were statistically significant at the .01 level.) For the total and self samples, both the difference between means of initial cooperators and converted respondent refusals are statistically significant at .01 level. For the proxy sample, the differences among these three were not as clear as those reported in total and self samples. Nevertheless, the mean of non-response items from converted respondent refusals (0.57) is still higher than those from initial cooperators (0.27) and converted informant refusals (0.18). The difference between means of initial cooperators and converted respondent refusals is statistically significant at the .05 level.

Total Number of Activities

Respondents were asked to recall all activities that they were engaged in within a 24 hour period. These activities were reported in chronological order, to facilitate respondent's recall. "An important part of this study is to learn what kinds of pollutants adults and children come in contact with in their daily activities. To do this we need to find out how and where people spend their time. I would like to ask you about the things (child's name) did yesterday -- from midnight (the previous day) to midnight last night."

An activity was defined as the primary event which occupied a person's time at a given moment. Hence, a person could only be engaged in one activity at a time. The completion of a

24-hour time diary study requires a considerable amount of cognitive effort on the part of the respondent.

At the start of the diary, the interviewer gives the respondent carefully structured neutral probes to aid the respondent in separating activities and reporting the desired level of detail. Some respondents had a tendency to lump activities together, such as "I got up this morning, left for work, watched television, and went to bed." The interviewer's task would then be to elicit more detailed activities from the respondent.

Occasionally, respondents gave too much detail. For instance, they might say "I got up this morning, placed my feet in my slippers, walked across the room, etc." In these cases interviewers guided the respondent to give the correct level of detail.

As mentioned in hypothesis #2, I expected to find fewer activities reported by the initial refusers than the initial cooperators. Figure2 shows the results of reported activities:

Figure 2: Mean Number of Activities Reported			
	All Adults	Self	Proxy
Initial cooperators	16.7 N=7432	16.7 N=6520	15.8 N=917
Converted respondent refusals	15.8 N=700	15.8 N=626	15.1 N=74
Converted informant refusals	16.8 N=412	16.8 N=368	15.8 N=44
	5.5% fewer activities reported by respondent refusals	4.5% fewer activities reported by respondent refusals	5.8% fewer activities reported by respondent refusals
	Statistically significant for initial cooperators and converted respondent refusals at the .001 level (adult and proxy sample only).		

Based on our findings of the total sample there is a significant difference between the number of activities reported by initial cooperators (16.7 activities) and the converted respondent refusals (15.8 activities). It is statistically significant at .001 level. Yet there is no difference between activities of the initial cooperators (16.7) and informant refusals (16.8).

The direction is the same for the self sample. In looking at the mean number of activities for the self sample, initial cooperators had a total of 16.7 activities and converted informant refusals had 17 activities, whereas the converted respondent refusals for this group had 15.8 activities, which is 5.8% fewer reported activities. The difference between activities reported by initial cooperators and converted respondent refusals is statistically significant at the .001 level. For the proxy sample, although the converted respondent refusals had a mean number of activities of 15, which is 4.4% fewer activities reported, both the differences between initial cooperators and converted refusals, and initial cooperators and converted informant refusals are not statistically significant. This is most likely driven by the smaller proxy interview sample size.

Demographics

Could some of these differences be attributed to the demographic differences between the initial cooperators and the converted respondent refusals? Several of the available demographics for this study had the same proportions in each of the two groups. These demographics included gender, region, household size, and number of children. However, there were some differences found. There were more black respondents, more elderly respondents and more respondents who did not complete high school among the converted respondent refusal group. In controlling for the effects of demographic differences in the overall findings, only slight differences were found between black and non-black respondents in terms of item non-response and number of diary activities. Also, no differences were found for respondents who had not completed high school. Elderly respondents did provide more item non-response and fewer diary activities. However, the total number of elderly respondents in the data set was small so the impact on the overall finding is minimal. If elderly respondents were removed from both the converted respondent refusal and initial cooperator group, the findings in this paper would still be significant.

Summary

Studies have been completed (Blair and Chun 1992) and (Cannell and Fowler 1963) that have argued that there are differences between respondents who initially cooperate and those who initially refuse. This study was large enough that the refusers could be broken into two distinct groups. First were refusals where clearly the chosen respondent refused. Second were those refusals where an informant likely refused. Having collected data from a sample of 1,112 respondents who initially refused allowed reliable data quality comparisons between respondents who initially cooperated and households where there was initially a refusal. As hypothesized, the converted respondent refusals consistently provided less information. However, in households where informant refusals occurred, the data quality was comparable to that of initial cooperators.

This research provides strong support for the hypothesis that people who initially refuse to complete a survey have higher levels of item non-response, shorter interviews and generally provide less information. Future studies should continue to test these hypotheses on other subject matter and data collection modes. A missing element in all the research conducted to date (including our study) on this issue is a validation source to measure differences in accuracy between converted refusals and initial cooperators.

7. How Long Do We Wait Before Converting Refusals

Are telephone survey response rates declining? Is it costing more to achieve particular response rates? While the exact extent of declining rates and increasing costs is not known for the survey industry as a whole, or even for segments of it, many, if not most, organizations would answer yes to both questions. This perception of increasing problems with a primary indicator of

survey quality has led to much recent research focused on reducing various components of nonresponse.

One major component of nonresponse is refusal to be interviewed. Refusal conversion is a standard practice of survey organizations; and a substantial portion of final data sets for telephone surveys consist of converted cases. One factor that may affect conversion success is the callback strategy.

There have been a number of studies on calling strategies for Random Digit Dial (RDD) samples as a whole. Effective calling strategies for refusal conversion have seldom been studied. In particular, the length of time between the refusal and the attempt to convert it has not been the subject of much research. Yet the amount of time between calls is considered important enough that there are often specific, though unsupported, rules governing it. In Groves' and Couper's major study of nonresponse in household surveys¹, they simply note that "It is common....to set [refusals] aside for a period of time and then attempt another contact."

Methodology reports often provide information about refusal conversion practices, but rarely provide any basis, beyond organization experience or supervisor judgment, for the procedures that were used. Thus, the methodology description for the National Study of Health and Activity notes that mild and firm refusals were recontacted after a 13 day break. Another methods report of a major survey notes that attempts to convert "generally occurred after a period of at least 10 days". At the University of Maryland's Survey Research Center, a week's delay is the rule of thumb.

Presumably, in these and other instances, the rule varies if methods such as monetary incentives and/or refusal conversion letters (sent by regular or express mail) are used to help increase conversion rates. In addition, the length of the data collection period and whether a refusal occurs early or later within that period is an additional constraint on whatever rule one would "ideally" apply.

In the absence of experimental methods research on this issue, it is useful as a starting point (and perhaps as a guide to designing experiments for more careful investigation) to examine the success of conversion attempts after different amounts of elapsed time. For this research, we included data from nine national studies that were conducted at the University of Maryland's Survey Research Center from the Spring of 1995 through the Summer of 2000. The combined total sample size was 31,676 phone numbers from which we completed 10,572 interviews and got 5,386 initial refusals. For the studies that were included in this research, the target populations were adults age 18 or older, residing in telephone households in the contiguous United States. Telephone numbers were selected from one plus list-assisted random digit dial sampling frames. Within each sample household, the target respondent was selected at random from among all adults residing there using either the "Next Birthday" selection method or a "Kish" household enumeration procedure. All phone numbers were called until a final disposition had been determined, or a minimum of 20 times if no one had ever answered the phone, or 25 times if anyone had ever been contacted at the number or if an answering machine was reached.

¹ Groves, Robert M., and Couper, Mick P. "Nonresponse in Household Surveys" John Wiley, 1998

The Survey Research Center uses the standard AAPOR final disposition codes for all interview and refusal final dispositions. A case becomes a completed interview if 100% of all essential or crucial questions are answered. The percentage of required crucial questions answered for a partial interview differ from project to project. A refusal has occurred when some contact has been made with a housing unit and a responsible member has declined to do the survey. A household level refusal, or informant refusal, is a refusal that has been made by either someone who is not the targeted respondent or it is unsure whether they may be. A known respondent refusal is a refusal that has been made by the selected respondent.

Most households who initially refused were recontacted by a specialist in refusal conversion. While there is no set rule, for most studies, at least a week passed before attempting refusal conversion. In some cases, refusals were called earlier, especially if the refusal had occurred at the end of a study and there was not enough time to wait a full week. No break-off's, where some data had been collected in an interview, were included in the analysis for this paper because it was too difficult to determine whether a break-off occurred because the respondent refused to continue or because the respondent needed to be called back.

A successful refusal conversion occurred when either an informant refusal or respondent refusal had been successfully recontacted and the interview was completed. An unsuccessful conversion occurred when the recontact resulted in a second refusal. A third situation occurred when a refusal conversion was attempted but the household could not be reached again. These non-reached refusals were not included in the analysis. The conversion rate is defined as the number of successful refusal conversions divided by the total successful and unsuccessful attempts. The conversion time is the number of days that had elapsed between the initial refusal and the successful or unsuccessful refusal conversion.

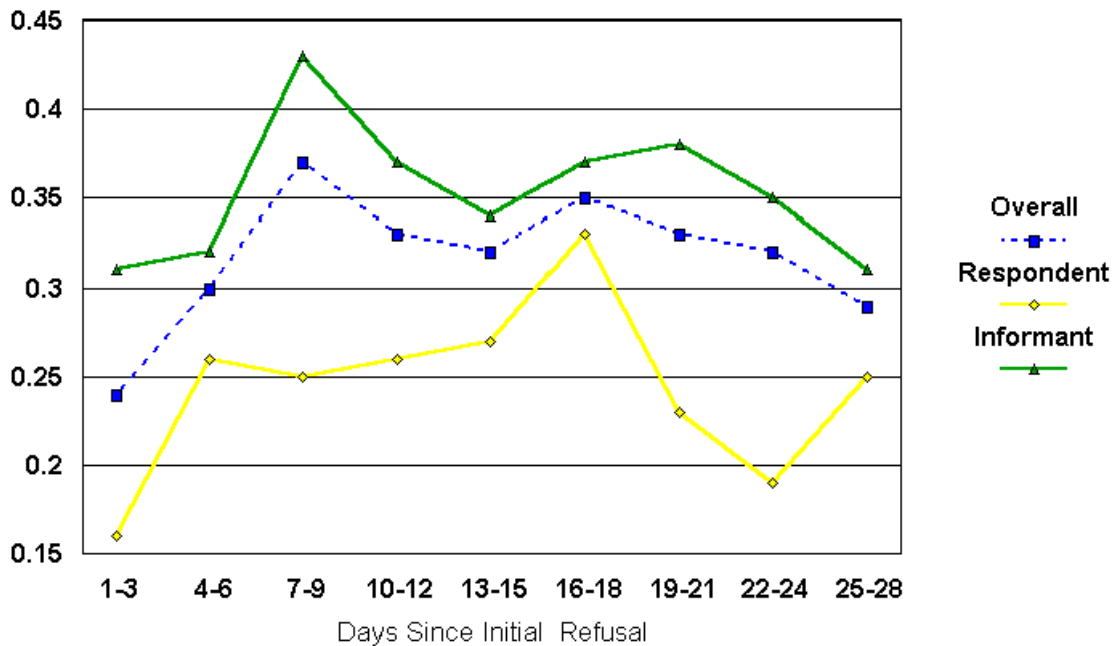
Across all nine national studies, the overall conversion rate for successfully recontacted refusals was 32%. When all refusals are included in the denominator, including those refusals that were not tried or were unable to be recontacted, the overall conversion rate drops to 24%. In this analysis, the conversion rate (32% overall) only includes refusals that were either converted to completed interviews or refused a second time. Chart 15 shows how this conversion rate varies depending on how many days after the initial refusal the successful or unsuccessful recontact occurred.

Looking at all refusals together, the conversion rate is worse during the first six days after the initial refusal occurred. After waiting seven days, the success rate of converting refusals is fairly stable. However, when looking separately at the respondent refusals, waiting 14 to 17 days does improve the refusal conversion success rate. With respondent refusals, waiting a little more than two weeks is optimal, but after 18 days the refusal conversion rate begins to decline. On the other hand, when looking separately at the informant's refusals, waiting about one week appears to be the best strategy. After one week, the refusal conversion rate for refusals begins a slow decline. It is best to try and convert respondent refusals two weeks after the initial refusal and informant refusals one week after the initial refusal. Waiting longer than this recommended time period is likely to lower refusal conversion success.

Another important point to keep in mind when converting refusals is that it takes, on average, almost five call attempts before successfully converting an initial refusal to a completed

CHART 15

Refusal Conversion Rate By Days Since Refusal
(Informant Refusals = 1,695 : Respondent Refusals = 741)



interview; while it takes less than three and a half call attempts to finalize initial refusals as double refusals. Given that five call attempts or more are often needed to reach and convert an initial refusal, the waiting period to start calling refusals should also take into account how much time remains in the project schedule. Also, most initial refusals that occur late in the study will probably already have had more than three prior call attempts. There is some evidence in the data (though not statistically significant) of higher conversion rates when converting initial refusals.

Another interesting finding in looking at the Center's refusal conversion data, is that refusal conversion rates are higher when a male initially refused the survey, versus when a female initially refused the survey. The higher refusal conversion rate for converting male refusals occurs no matter how many days later refusal conversion is attempted. Therefore, the optimal time to call refusals is not affected by the gender of the person who initially refuses.

For most random digit dial surveys, there are usually a higher percentage of females interviewed. It is also the case that the percentage of initial refusals that are from female respondents is slightly greater than the percentage of male initial refusals. However, it is striking that converting refusals actually worsens the final overall gender distribution. When refusal conversion is successful, about one third of all initial male refusals and over half of the male

refusals in which respondent selection has not been completed results in an interview with a female respondent, while only about 17% of all initial female refusals that are converted to interviews result in a male completed interview. Therefore, reworking refusals is likely to increase the overall percentage of female respondents in the final sample distribution.

Refusal conversion rates vary somewhat regionally, with respondents living in the South being the most receptive to refusal conversion attempts a few days after the initial refusal. Attempts at converting refusals with respondents in the South two days after the initial refusal occurred is just as successful as waiting one or two weeks. With respondents who live in the West, waiting about one week before attempting to convert initial refusals will significantly improve refusal conversion rates. It is also advisable to wait about one week before attempting to convert initial refusals in the Midwest. The overall success of refusal conversion is lower in the Northeast than in the other three Census regions (South, Midwest, West). But once again, it is best to wait about one week before attempting to convert initial refusals in the Northeast.

In conclusion, a “cool down period” of about one week is generally advisable. If the actual respondent has refused the survey, waiting two weeks would be optimal. It is my recommendation that the informant and respondent refusals be separated and treated differently. Not only is a longer “cool down period” advisable for the respondent refusals, but because they are harder to convert, they may need to be assigned to better refusal converters.

Some other general conclusions from this research indicate that converting refusals is easier if a male initially refuses. Refusal conversion rates are lower in the Northeast. Successful refusal conversion takes on average about five additional call attempts. Finally, refusals that happen on the first few call attempts are harder to convert than refusals that occur after several call attempts have already been attempted.

8. Tables and Charts

Description of the tables in the appendix:

The following tables were prepared for this paper and are located in the Appendix.

Tables 1 & 2: These tables illustrate the average call attempts needed to complete an interview. Each column (except the first column) is an independent random digit dialing (RDD) study. All studies are listed by the date they occurred, with the total number of completes listed below the date. Tables 1 and 2 are the same except that all studies in Table 1 are Maryland statewide studies while the studies in Table 2 are nationwide studies. The first row in these tables is labeled "Total Sample" and gives you the average number of call attempts needed for all completed surveys. All other rows are either characteristics of the respondent (i.e., race, gender, education, marital status, age, employed on a paid job), the household (i.e., region, household (HH) size, housing, # of non-business lines, children), or the interview (i.e., interview length, time of day interview completed, previous status of call). The intersection of the rows and columns gives the average call attempts needed to complete an interview for all studies and groups listed. The first column shows the percentage of the total sample "n" that each row averages across all studies.

For example females average 59% of all completes, and, therefore, if the "n" for a given study was 1,000, the approximate "n" for females would be roughly 590. For the Spring1989 Maryland Poll, the average call attempts needed to complete an interview was 4.73, but was only 4.58 for female respondents.

Table 3: This table shows the status of 11,049 completed Maryland interviews (Fall 1990 through Summer 2001) just prior to completion. The rows are a subset of the rows used in Table 1. The first column shows the total number of completed interviews in each of the rows. The remaining 6 columns represent the call status of completed interviews just prior to completion. All completed interviews were before completion either a "NEW NUMBER", a telephone number that has never been tried before; a "TERM" a household where the respondent previously completed part of the interview; a "REFUSAL" a household where somebody had previously refused to be interviewed; a "CALL BACK" a household where somebody requested we call back; a "HOME RECORDER" a household where no one was spoken to, but the household did have on a home recorder; a "NO ANSWER" all previous call attempts to that household had resulted in a no answer. All completed interviews were coded as having been in only one these prior call statuses. The first column lists the total sample "n" from all Maryland studies. The intersection of the rows and the other columns shows the percentage of completed interviews for that group (rows) having that previous call status (columns). For example, of all completed interviews with male respondents, 24% came from new numbers, 3% from terms, 6% from refusals, 42% from call backs, 14% from home recorders and 11% from no answers.

Table 4: Is the same as table 3, except that the numbers are based on 10,225 nationwide telephone interviews completed between Fall 1993 and Winter 2001. For male respondents nationwide, 22% of completed interviews were from new numbers, 4% from terms, 9% from refusals, 44% from call backs, 14% from home recorders, and 8% from no answers.

Tables 5 & 6: These two tables look at response rate and survey response under alternative calling strategies. As in Tables 1 & 2, the column is an independent random digit dialing study. All studies are listed by the date they occurred with the total number of completes listed below that date. Tables 5 and 6 are the same except that all studies in Table 5 are Maryland statewide studies while the studies in Table 6 are nationwide studies. As mentioned in the introduction, on all of the random digit dialing studies, the Survey Research Center makes at least 20 call attempts before finalizing a telephone number, and most refusals are called again until the Center gets a completion or a second refusal. Therefore, the top row under each row heading (over 20 calls) is the standard calling effort performed at the University of Maryland's Survey Research Center. The other rows examine what would happen if the Center used a different rule for finalizing telephone numbers. For example, the row labeled up to 6 calls assumes that any interview completed after 6 call attempts would not have been completed, because the rule would not permit more than 6 call attempts on any particular telephone number. The last row under each row heading assumes that you would make over 20 call attempts on all households, but would not attempt to call back any household that initially refused to complete the survey. The row heading (i.e., Response Rate, % of sample male) describes what survey results we are comparing for each of the different calling

strategies. In the first group, we compared what the final response rate of all households would be under the various calling strategies. In the next group, we compared the percentage of the sample that would be male respondents for each calling strategy. The remaining row headings are also percentage comparisons, with the exception of the last two row headings. They look respectively at the average age of respondents and the average household size under each calling strategy.

Table 7: This table combines data from the last eight Maryland statewide random digit dial studies (Spring 1992 through Summer 2001). The goal for each of these three studies was to complete 1,000 telephone interviews with a random respondent in 1,000 telephone households. The row headings are number of call attempts and the columns show outcomes for each of the call attempt rows. The top row "total" is the column sum overall call attempts. Column 1, "Total Sample Finalized", shows for the total sample (all telephone numbers) which call attempt determined a telephone number's final sample disposition (no more call attempts to be made). For example, 1,966 telephone numbers' final status was determined on the second call attempt. Column 2 "Total Call Attempts" displays how many actual phone calls were made for each call attempt. For example, 11,560 second call attempts were made. Column 3, "Total Number of Completes", lists how many interviews were completed for each call attempt. For example, 1,200 interviews were completed on the second call attempt. Column 4, "Total Calls on Interviews Only", displays for each call attempt the total calls made on telephone numbers that eventually yield completed interviews. For example, 5,067 of the 11,560 total second call attempts made were made using phone numbers that yielded or eventually yielded a completed interview. Column 5, "Total Finalized Non-Interviews", lists for each call attempt how many telephone numbers' final statuses were determined excluding completed interviews. Finalized status is a telephone number for which no additional calls are attempted (e.g., non-working number, business, final refusal, final call back etc...). For example, excluding completed interviews, 766 telephone numbers' final dispositions were determined on the second call attempt. Finally, Column 6, "Total Calls on Non-Interviews", displays for each call attempt the total calls made on telephone numbers for which there was never a completed interview. For example, 6,075 of the 11,560 total second call attempts made were made using phone numbers that never yielded a completed interview.

Table 8: This table is the same as Table 7, except the data source is the last eleven nationwide random digit dialing studies (Fall 1993 through Winter 2001).

Table 9: Gives the results of regression analysis. Total number of calls was the dependent variable with the independent variables being number of adults, number of children, marital status, race, age, education, and gender. This table contains the results of two separate regression runs. The first results shown were based on data from most recent nationwide studies, while the second set of results shown were based on data from the most recent Maryland studies. For both of these regressions a variable's mean average was substituted for missing data.

Table 10: Table 10 groups all Survey Research Center RDD studies into three time periods; 1989-1992, 1993-1996, and 1997-2001. This allows the Center to look for trends in the call attempt data. For instance, this table shows how total call attempts rose from 4.72 (nationally) to

6.22 over the past 10 years. A similar increase occurred in statewide studies. The table shows that during the same time period, national response rates fell from 68.9 % to 56.4% with a similar decline occurring in the statewide studies. In addition, this table shows that there was a decline in calls completed on the first attempt, as well as a decline in completions that occur within the first three call attempts. Finally, this table shows that there are now more completions from households using home recorders and fewer completions from households where previously there was never an answer.

Description of the charts used in this report :

Charts 1 & 2: These charts show how much one can expect to raise response rates by reworking refusals. Response rates before refusal reworking is represented by the lightly shaded portion of the bar. After refusal conversion, the response rate is the entire bar, including the light and dark shaded areas. All studies shown in Chart 1 were nationwide studies, while all studies shown in Chart 2 were Maryland statewide studies.

Charts 3 & 4: These charts show what the response rate would be after various cutoff rules. For example, if you made only 3 calls, the response rate would usually be less than 40%, while response rates after 10 call attempts are usually higher than 50%. All studies shown in Chart 3 were nationwide studies, while the studies shown in Chart 4 were Maryland statewide studies.

Charts 5 & 6: These charts look at some of the demographic characteristics of respondents who require more than the average number of calls to complete an interview. For example, people who have never been married and younger respondents tend to require more call attempts. Chart 5 uses the nationwide data found in Table 1, while Chart 6 is based on the statewide data found in Table 2.

Charts 7 & 8: These charts display the percentage of various groups' total interviews completed on the first call attempt. Often, pretests or overnight polls consist of one call attempt. Since 31 respondents who are 65 years of age or older are often home, they are more likely to be interviewed on the first call attempt. Chart 7 uses the nationwide data found in Table 4, while Chart 8 is based on the statewide data found in Table 3.

Charts 9 & 10: These charts show how many telephone numbers needed to be dialed to complete an interview at different call attempt stages. For example, the second call attempt was the most productive stage, yielding a completed interview for every 12.5 numbers dialed on national studies, and a completed interview for every 9 numbers dialed on statewide studies. Chart 9 uses the nationwide data found in Table 8, while Chart 10 is based on the statewide data found in Table 7.

Charts 11 & 12: These charts show some of the changes that occurred over the past 12 years.

There has been a decrease over the years in interviews completed on the first call, as well as a decrease in the percentage of interviews completed where previously we had only encountered a no answer. In addition, these charts display the increased dependence on completing interviews from households which we had previously only encountered a home recorder. Chart 11 is based on data from nationwide RDD studies completed between 1989 and 2001, while Chart 12 is based on the statewide data from that same time period.

Charts 13 & 14: These charts shows where Survey Research Center's completes have come from over the past 12 years. For instance, Chart 13 shows that for nationwide studies 43% of completes come from call back appointments and 9% of interviews come from refusal conversion. Chart 14 shows that for statewide studies, 40% of completes come from call back appointments and 8% of interviews come from refusal conversion. Chart 13 is based on data from nationwide RDD studies completed between 1989 and 2001, while Chart 14 is based on the statewide data from that same time period.

Charts 15: This line chart shows how refusal conversion rate varies depending on the number of days that have past since the refusal occurred. The dashed (blue if you have color) line in the middle indicates the refusal conversion rate for all refusals. The solid (yellow) line on the bottom indicates the refusal conversion rates for respondent refusals. The solid (green) line on the top indicates the refusal conversion rates for non-respondent refusals or what is often described as informant refusals. For example, after 16 to 18 days have passed from the time of the initial refusal, the success rate at converting refusals is 32% for respondent refusals, 35% for all refusals, and 37% for informant refusals.

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APPENDIX

THE TABLES

Table 1

	Average Size Of Sample	SPRING 89 (n=964)	SUMMER 89 (n= 971)	FALL 89 (n=982)	SPRING 90 (n=1018)	FALL 90 (n=968)	SPRING 91 (n=1036)	SUMMER 91 (n=1010)	SPRING 92 (n=1001)	FALL 92 (n=1001)	SPRING 93 (n=1009)	SPRING 94 (n=1018)	FALL 95 (n=989)	SPRING 97 (n=988)	WINTER 98 (n=994)	SUMMER 01 (N=1005)
TOTAL SAMPLE	100%	4.73	4.93	4.89	4.26	3.87	5.06	4.64	4.48	3.83	5.60	5.57	5.90	6.91	6.87	6.50
REGION:																
PG	16%	5.64	5.49	5.56	5.05	3.97	6.00	5.17	4.82	4.66	6.86	6.33	7.13	8.12	7.82	5.83
MONTGOMERY	15%	4.93	5.49	4.71	4.19	4.14	5.83	5.14	4.97	3.60	5.99	5.72	6.76	6.66	7.22	0.62
AA/HOWARD	14%	4.00	5.70	5.21	4.01	4.26	4.91	4.92	5.64	4.40	5.00	4.65	5.97	7.10	6.16	7.33
BALTIMORE COUNTY	15%	4.88	4.94	5.39	4.05	3.55	4.77	3.96	3.75	3.77	5.12	5.31	5.19	7.22	6.23	6.12
BALTIMORE CITY	12%	4.91	4.60	5.31	3.95	4.63	5.14	5.06	4.66	3.62	6.22	5.46	5.69	7.82	8.16	6.80
EAST	16%	4.23	4.13	3.98	4.34	3.43	4.18	4.63	3.34	3.86	4.36	5.96	5.01	5.37	6.75	6.46
WEST	12%	4.56	4.46	4.01	4.09	3.23	4.48	3.44	4.11	3.40	4.89	5.42	4.67	6.28	5.71	6.56
HH SIZE:																
1 ADULT	28%	5.39	5.06	5.43	4.52	4.28	5.30	4.63	4.91	4.17	5.08	5.98	6.25	8.02	6.78	6.45
2 ADULTS	51%	4.26	4.98	4.60	3.86	3.65	4.80	4.70	4.16	3.80	5.85	5.06	5.69	6.51	6.91	6.33
3 ADULTS	14%	4.52	4.53	4.07	3.92	3.76	5.43	4.52	4.40	3.67	5.45	6.14	6.25	6.89	5.86	7.81
4+ ADULTS	7%	5.47	4.22	4.89	4.10	3.26	4.96	4.54	5.13	3.44	5.98	7.11	5.66	5.70	8.66	5.20
GENDER:																
FEMALE	59%	4.58	4.45	4.88	4.15	3.56	4.66	4.18	4.47	3.74	5.32	5.24	5.29	6.66	6.89	6.03
MALE	41%	4.93	5.66	4.91	4.43	4.32	5.61	5.38	4.49	3.99	5.99	6.01	6.73	7.26	6.86	7.28
RACE:																
WHITE	76%	4.56	4.83	4.41	4.01	3.64	4.70	4.40	4.23	3.71	5.00	5.11	5.34	6.52	6.05	6.53
BLACK	21%	5.07	4.55	5.86	4.63	4.63	6.16	5.44	4.94	4.20	6.76	6.71	7.28	8.01	9.09	8.40
OTHER	4%	5.64	5.49	5.33	3.80	3.82	5.87	4.33	6.25	3.83	6.44	5.91	6.15	7.50	7.95	6.97
EDUCATION:																
LESS THAN HIGH SCHOOL	13%	3.82	4.33	3.39	3.93	2.90	3.68	4.71	3.75	3.29	4.51	4.62	5.25	6.14	5.91	4.52
HIGH SCHOOL GRAD	33%	4.59	4.56	4.93	4.10	3.84	5.29	4.06	4.03	3.58	5.38	5.64	5.29	6.62	6.97	6.41
SOME COLLEGE	21%	4.47	4.76	4.23	4.19	4.08	5.19	4.87	4.83	4.12	6.42	5.33	5.56	7.14	7.93	6.62
COLLEGE GRAD	19%	4.98	5.31	5.23	4.34	4.74	5.07	4.86	5.15	4.17	6.06	5.92	6.91	8.32	7.02	6.74
GRAD SCHOOL	14%	5.77	5.47	6.06	4.20	3.35	5.35	5.33	4.47	3.74	5.28	6.07	6.60	5.97	5.46	7.04
MARITAL STATUS:																
MARRIED	56%	4.33	*	4.20	3.72	3.58	4.60	4.35	4.46	3.43	5.49	4.85	5.45	6.28	6.06	6.44
SEPARATED	4%	7.58	*	4.89	4.12	3.98	5.95	5.93	4.56	3.96	5.96	6.09	6.42	6.59	8.19	6.74
DIVORCED	9%	5.14	*	5.93	4.61	4.28	5.64	4.97	4.99	4.63	5.81	6.30	7.08	7.65	8.01	6.26
WIDOWED	9%	3.13	*	3.94	3.44	3.06	3.64	3.60	3.09	3.28	4.65	3.74	3.25	5.01	5.36	4.24
NOT MARRIED	22%	5.31	*	5.74	5.24	4.58	6.26	5.27	4.60	4.67	5.94	7.50	7.03	8.51	8.44	7.71
AGE:																
18 TO 24	12%	4.90	6.05	4.73	5.31	3.27	5.94	5.27	4.86	4.12	5.54	6.74	5.91	6.46	7.89	8.14
25 TO 34	25%	5.66	5.55	5.32	4.21	4.26	5.51	5.16	4.93	4.55	6.34	6.74	6.61	7.97	7.98	7.14
35 TO 44	24%	4.78	4.81	4.93	4.11	4.32	5.10	4.52	4.77	3.62	5.86	5.71	6.80	7.30	7.41	6.62
45 TO 54	14%	4.11	4.41	4.55	4.39	3.96	5.46	5.32	4.39	3.56	6.03	5.73	6.58	7.35	7.12	8.17
55 TO 64	11%	4.47	3.48	3.72	3.76	3.28	4.54	4.32	3.64	3.35	5.37	4.78	5.36	6.24	4.70	5.26
65+	14%	3.33	3.29	4.73	3.26	2.79	3.25	2.87	3.44	3.51	3.36	3.31	3.34	5.02	4.71	4.12
HOUSING:																
APARTMENT	18%	*	*	4.82	*	*	*	*	*	*	*	*	*	*	*	*
SINGLE FAMILY	58%	*	*	4.39	*	*	*	*	*	*	*	*	*	*	*	*
TOWNHOUSE	16%	*	*	6.02	*	*	*	*	*	*	*	*	*	*	*	*
OTHER	9%	*	*	4.09	*	*	*	*	*	*	*	*	*	*	*	*
# OF NON BUSINESS LINES:																
ONE	87%	4.65	4.72	4.89	4.16	3.79	4.81	4.54	4.36	3.74	5.42	5.30	5.78	6.80	6.88	6.54
TWO OR MORE	13%	5.05	5.34	5.17	4.09	4.06	6.31	5.19	5.24	4.59	6.59	7.95	6.74	7.51	6.86	6.34
CHILDREN:																
NONE	59%	4.85	*	5.14	4.11	3.76	5.10	4.77	4.57	3.94	5.48	5.68	5.85	*	6.61	6.39
ONE	18%	4.71	*	4.82	4.14	4.07	5.23	4.25	4.41	3.65	6.17	6.01	6.42	*	7.49	7.16
TWO	16%	4.49	*	3.86	4.31	4.00	4.60	4.94	4.24	3.76	4.82	4.69	5.43	*	6.81	7.62
THREE PLUS	7%	4.18	*	3.66	3.67	3.27	4.74	3.95	3.91	3.72	6.37	5.65	6.04	*	7.00	7.71
EMPLOYED ON A PAID JOB:																
YES	67%	5.06	*	5.10	*	4.24	*	5.21	4.84	4.15	6.15	6.17	6.70	7.35	7.40	7.32
NO	33%	3.83	*	3.79	*	3.08	*	3.25	3.57	3.12	4.17	3.76	3.64	5.78	5.21	4.39
HOURS WORKED:																
LESS THAN 20	5%	3.60	*	4.23	*	*	*	*	*	*	*	*	*	*	*	*
20 TO 25	7%	4.15	*	4.90	*	*	*	*	*	*	*	*	*	*	*	*
36 TO 45	37%	5.15	*	4.94	*	*	*	*	*	*	*	*	*	*	*	*
46 OR MORE	20%	5.80	*	5.73	*	*	*	*	*	*	*	*	*	*	*	*
INTERVIEW LENGHT:																
SHORT	25%	4.60	4.94	5.41	3.39	3.65	4.90	4.41	4.14	3.74	5.39	4.54	5.85	6.59	7.36	6.33
AVERAGE	50%	4.39	3.81	4.81	3.69	3.62	4.27	4.40	4.24	3.16	4.17	5.45	6.01	6.44	6.77	9.49
LONG	25%	4.52	3.86	4.04	4.37	3.38	4.94	4.73	4.37	4.34	5.00	6.07	5.08	7.66	6.08	8.57
TIME OF DAY COMPLETED:																
9AM TO 1PM	15%	5.03	4.61	6.38	4.34	4.23	4.91	4.99	5.43	5.34	4.77	4.64	4.50	8.75	14.03	7.54
1PM TO 5PM	16%	3.41	4.04	4.64	4.61	4.35	4.22	4.25	3.81	3.38	4.45	5.17	2.93	7.01	6.30	5.57
5PM TO 7PM	24%	4.50	4.79	5.12	3.47	3.06	4.84	4.30	4.72	2.97	5.99	4.59	5.16	5.36	5.64	5.35
AFTER 7PM	31%	4.79	5.29	4.20	4.10	3.89	5.36	4.94	4.84	3.60	5.81	5.48	7.21	7.10	6.79	6.46
SATURDAYS	8%	5.30	5.44	5.10	6.08	8.61	5.16	4.48	3.78	4.82	5.08	7.37	7.09	6.82	8.08	6.48
SUNDAYS	6%	6.51	5.78	6.27	9.09	1.93	7.65	5.25	4.01	3.91	8.37	7.06	8.22	8.82	6.71	9.25
PREVIOUS STATUS OF CALL:																
NEW NUMBER	30%	*	*	*	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TERM	4%	*	*	*	7.75	5.22	8.55	7.33	6.62	6.37	6.75	7.88	7.61	10.82	11.85	9.48
REFUSAL	6%	*	*	*	5.76	6.15	7.97	7.00	7.84	5.47	6.30	7.52	8.91	10.69	8.54	6.56
CALL BACK	36%	*	*	*	6.01	6.50	7.19	6.60	6.36	6.28	8.43	8.00	7.91	9.39	9.44	9.39
HOME RECORD	10%	*	*	*	5.36	4.82	5.71	5.72	4.21	4.30	5.28	5.49	5.77	6.36	5.36	6.26
NO ANSWER	14%	*	*	*	4.16	3.31	3.70	3.76	3.28	3.00	4.17	3.89	4.10	3.67	3.86	3.47

(ALL STUDIES IN TABLE 1 ARE MARYLAND STATEWIDE STUDIES)

Table 2

	Average Size Of Sample	FALL 91 (n=1000)	FALL 93 (n=1013)	SPRING 95 (n=1443)	FALL 95 (n=1000)	FALL 96 (n=1013)	WINTER 98 (n=1021)	SPRING 98 (n=1750)	WINTER 99 (n=1501)	SPRING 99 (N=1001)	FALL 00 (N=343)	SPRING 00 (N=1232)	WINTER 01 (N=1001)
TOTAL													
SAMPLE	100%	4.72	4.70	8.64	5.31	5.13	6.92	7.07	4.47	5.33	4.20	7.22	5.87
REGION:													
NORTHEAST	20%	4.78	4.41	8.88	5.94	5.31	7.14	7.21	4.14	5.91	4.09	7.50	6.80
MIDWEST	23%	4.40	4.99	7.69	4.70	5.05	5.60	6.48	4.37	4.81	3.45	6.46	5.04
SOUTH	35%	4.96	4.75	8.81	5.56	5.06	6.77	6.36	4.77	5.15	4.50	7.41	5.83
WEST	22%	4.65	4.54	9.32	4.91	5.21	8.69	7.61	4.41	5.80	4.82	7.54	6.06
HH SIZE:													
1 ADULT	28%	5.08	4.67	8.83	5.65	5.33	6.80	7.24	4.75	5.59	4.74	7.42	5.90
2 ADULTS	51%	4.68	4.48	8.53	4.89	4.84	6.50	6.67	4.14	5.09	3.63	6.80	6.01
3 ADULTS	14%	4.11	5.25	8.72	6.33	5.79	7.14	6.61	5.13	5.24	5.26	8.63	5.60
4+ ADULTS	7%	4.07	5.38	8.51	5.91	4.91	9.93	7.24	4.82	5.98	3.86	8.37	4.63
GENDER:													
FEMALE	59%	4.52	4.57	8.50	5.31	4.92	6.52	6.57	4.37	5.06	3.90	6.52	6.25
MALE	41%	5.02	4.89	8.83	5.31	5.40	7.42	7.35	4.59	5.70	4.52	8.16	5.62
RACE:													
WHITE	84%	4.60	4.48	8.20	5.13	4.79	6.56	6.64	4.24	4.90	3.90	7.12	5.43
BLACK	11%	5.43	5.79	11.12	5.83	5.75	8.56	7.15	5.51	6.08	5.66	7.59	7.30
OTHER	5%	4.54	5.35	10.34	6.21	6.17	8.28	8.36	5.82	6.79	4.22	7.98	6.68
EDUCATION:													
LESS THAN HIGH SCHOOL	13%	3.79	5.08	7.01	5.29	3.79	6.62	5.56	4.02	5.75	3.88	5.92	5.61
HIGH SCHOOL GRAD	33%	4.25	4.48	8.98	4.79	4.97	6.07	6.83	4.08	4.64	3.71	6.90	5.47
SOME COLLEGE	21%	4.80	4.68	7.99	5.56	5.54	7.42	6.52	4.59	5.63	4.17	7.56	5.91
COLLEGE GRAD	19%	5.61	4.89	9.84	5.39	5.51	8.26	7.60	4.74	5.95	5.43	7.48	5.75
GRAD SCHOOL	14%	5.47	4.77	9.14	5.94	5.06	5.89	7.38	5.08	4.84	4.40	7.18	5.87
MARITAL STATUS:													
MARRIED	56%	4.65	4.57	8.32	5.58	4.64	6.23	6.30	4.29	5.02	3.89	7.01	5.96
SEPARATED	4%	5.96	5.46	8.40	6.59	5.81	9.89	6.41	4.80	7.28	5.44	10.54	8.36
DIVORCED	9%	4.72	5.13	9.52	7.28	6.06	7.72	7.61	4.54	6.20	3.61	7.50	6.13
WIDOWED	9%	3.59	4.03	5.82	3.95	3.95	4.70	4.95	2.77	3.42	4.76	4.81	7.16
NOT MARRIED	22%	5.29	5.12	10.65	7.60	6.09	8.70	8.54	5.77	6.26	5.07	8.28	6.61
AGE:													
18 TO 24	12%	4.64	5.27	8.36	5.34	6.52	9.03	7.14	5.83	6.75	4.57	7.46	5.43
25 TO 34	25%	5.09	5.25	10.25	7.46	5.26	7.27	7.91	5.52	6.12	5.41	8.19	6.82
35 TO 44	24%	5.21	4.79	9.29	5.60	5.48	7.58	7.57	4.74	6.09	4.00	8.62	6.56
45 TO 54	14%	5.47	5.09	9.21	5.49	5.17	6.59	6.89	5.01	5.02	4.47	7.83	5.63
55 TO 64	11%	4.04	4.09	8.50	3.97	5.05	6.33	6.18	3.73	4.43	3.24	6.45	5.57
65+	14%	3.36	3.59	5.78	3.85	3.86	4.70	4.84	2.48	3.50	3.32	4.71	4.18
HOUSING:													
APARTMENT	18%	*	*	*	*	*	*	*	*	*	*	*	*
SINGLE FAMILY	58%	*	*	*	*	*	*	*	*	*	*	*	*
TOWNHOUSE	16%	*	*	*	*	*	*	*	*	*	*	*	*
OTHER	9%	*	*	*	*	*	*	*	*	*	*	*	*
# OF NON BUSINESS LINES:													
ONE	87%	4.60	4.51	8.37	5.11	5.07	6.89	6.83	4.41	5.28	3.97	7.07	5.86
TWO OR MORE	13%	6.04	7.13	11.47	6.76	5.69	8.91	7.01	5.64	5.34	6.45	9.34	5.99
CHILDREN:													
NONE	59%	4.73	4.31	8.36	5.45	5.06	6.47	*	4.15	4.82	4.31	*	5.43
ONE	18%	4.70	5.16	9.71	4.96	5.19	7.81	*	4.99	5.90	3.73	*	6.12
TWO	16%	4.68	5.36	8.94	5.71	4.83	6.70	*	4.94	6.26	4.51	*	6.33
THREE PLUS	7%	4.74	5.10	8.15	4.09	5.85	7.51	*	4.78	6.16	3.79	*	6.86
EMPLOYED ON A PAID JOB:													
YES	67%	*	*	*	5.86	5.52	7.27	7.56	5.03	5.88	4.65	8.39	6.53
NO	33%	*	*	*	4.10	4.08	5.79	5.30	3.16	4.17	3.13	4.77	4.97
HOURS WORKED:													
LESS THAN 20	5%	*	*	*	*	*	*	*	*	*	*	*	4.54
20 TO 25	12%	*	*	*	*	*	*	*	*	*	*	*	6.43
36 TO 45	31%	*	*	*	*	*	*	*	*	*	*	*	6.49
46 OR MORE	21%	*	*	*	*	*	*	*	*	*	*	*	7.06
INTERVIEW LENGHT:													
SHORT	25%	4.78	5.20	7.94	5.43	*	7.56	7.69	5.10	6.25	4.41	8.29	5.09
AVERAGE	50%	3.89	4.17	8.77	5.52	*	6.46	5.73	4.01	5.30	4.24	6.84	6.30
LONG	25%	3.83	4.21	6.58	4.78	*	7.05	5.27	3.04	4.34	3.09	7.74	6.23
TIME OF DAY INTERVIEW COMPLETED:													
9AM TO 1PM	15%	3.88	6.02	7.15	5.46	6.77	13.00	9.12	9.92	6.43	4.17	4.55	2.75
1PM TO 5PM	16%	3.89	3.56	6.41	6.62	4.72	5.80	7.01	5.84	7.71	3.18	4.69	5.70
5PM TO 7PM	24%	5.00	4.72	10.23	4.40	4.02	6.53	5.77	3.56	3.98	3.36	6.22	5.10
AFTER 7PM	31%	5.08	4.41	9.42	4.84	4.49	7.29	6.73	4.50	5.65	4.12	7.93	5.97
SATURDAYS	8%	5.42	5.14	7.88	6.83	7.32	7.07	9.06	4.23	6.10	3.94	8.81	5.12
SUNDAYS	6%	5.18	6.71	9.26	6.04	7.11	7.00	7.54	6.39	5.39	5.71	9.03	7.73
PREVIOUS STATUS OF CALL:													
NEW NUMBER	30%	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
TERM	4%	7.09	8.49	19.00	7.41	6.09	9.58	7.01	6.65	9.89	3.33	11.39	8.16
REFUSAL	6%	6.26	6.30	12.93	7.00	6.31	9.93	5.77	6.32	8.67	5.39	12.90	6.34
CALL BACK	36%	6.62	6.58	10.57	7.64	7.35	8.78	6.73	7.02	7.71	6.15	9.33	8.76
HOME RECORD	10%	5.13	4.60	6.97	5.87	4.67	6.05	9.06	4.58	4.97	4.68	6.26	5.17
NO ANSWER	14%	3.91	3.09	3.41	3.24	3.51	3.97	7.54	3.53	3.85	3.35	3.34	3.25

(ALL STUDIES IN TABLE 2 ARE NATIONWIDE STUDIES)

TABLE 3

	SAMPLE SIZE	NEW NUMBER (n=2,857)	TERM (n=387)	REFUSAL (n=739)	CALL BACK (n=4,455)	HOME REC. (n=1,353)	NO ANSWER (n=1,258)
TOTAL							
SAMPLE	11,049	26%	4%	7%	40%	12%	11%
REGION:							
PG	1,814	22%	4%	6%	45%	14%	10%
MONTGOMERY	1,782	24%	3%	5%	43%	15%	10%
AA/HOWARD	1,402	27%	3%	7%	40%	13%	10%
BALT CNTY	1,715	25%	4%	8%	40%	12%	13%
BALT CITY	1,427	25%	5%	7%	42%	10%	11%
EAST	1,560	30%	3%	8%	37%	10%	12%
WEST	1,349	30%	2%	6%	36%	11%	15%
HH SIZE:							
1 ADULT	2,974	27%	4%	6%	32%	17%	16%
2 ADULTS	5,852	26%	3%	7%	42%	11%	10%
3 ADULTS	1,520	27%	3%	6%	46%	9%	9%
4+ ADULTS	691	25%	3%	6%	50%	8%	9%
GENDER:							
MALE	4,558	24%	3%	6%	42%	14%	11%
FEMALE	6,491	27%	4%	7%	39%	11%	12%
RACE:							
WHITE	7,754	28%	3%	7%	37%	13%	12%
BLACK	2,547	21%	5%	6%	49%	10%	10%
OTHER	535	22%	3%	5%	48%	11%	11%
EDUCATION:							
LESS THAN HS	1,230	33%	4%	8%	36%	4%	14%
HS GRAD	3,407	26%	4%	7%	42%	10%	11%
SOME COLLEGE	2,488	25%	3%	6%	41%	12%	12%
COLLEGE GRAD	2,097	25%	3%	6%	41%	16%	10%
GRAD SCHOOL	1,711	24%	2%	6%	38%	20%	11%
MARITAL STATUS:							
MARRIED	5,979	27%	3%	7%	43%	10%	10%
SEPARATED	519	24%	2%	7%	37%	17%	13%
DIVORCED	1,104	21%	3%	6%	40%	18%	13%
WIDOWED	878	37%	7%	8%	27%	6%	16%
NOT MARRIED	2,413	22%	3%	5%	42%	17%	12%
AGE:							
18 TO 24	1,075	22%	3%	5%	44%	14%	11%
25 TO 34	2,462	23%	3%	5%	43%	16%	10%
35 TO 44	2,656	23%	3%	7%	45%	12%	11%
45 TO 54	1,777	25%	2%	7%	44%	13%	10%
55 TO 64	1,187	28%	4%	8%	36%	12%	13%
65+	1,550	38%	6%	8%	27%	6%	15%
CHILDREN:							
NONE	6,623	26%	3%	7%	36%	15%	13%
ONE	1,905	25%	3%	6%	47%	9%	10%
TWO	1,637	25%	3%	7%	47%	8%	9%
THREE PLUS	792	28%	4%	6%	49%	4%	8%
TIME OF DAY INTERVIEW COMPLETED:							
9AM TO 1PM	1,361	20%	6%	12%	40%	11%	11%
1PM TO 5PM	1,409	30%	5%	4%	36%	11%	14%
5PM TO 7PM	2,386	30%	3%	6%	35%	13%	13%
AFTER 7PM	3,649	24%	3%	7%	44%	12%	10%
SATURDAYS	1,189	27%	2%	6%	45%	12%	8%
SUNDAYS	1,055	23%	3%	6%	40%	15%	13%

Table 3 - Is based on the last 11 Maryland Statewide studies

TABLE 4

	SAMPLE SIZE	NEW NUMBER (n=2,353)	TERM (n=449)	REFUSAL (n=930)	CALL BACK (n=4,339)	HOME REC. (n=1,320)	NO ANSWER (n=834)
TOTAL							
SAMPLE	10,225	23%	4%	9%	42%	13%	8%
REGION:							
NORTHEAST	2,032	21%	5%	10%	43%	14%	7%
MIDWEST	2,505	26%	4%	9%	42%	11%	8%
SOUTH	3,783	23%	5%	9%	42%	12%	9%
WEST	1,905	21%	4%	9%	42%	17%	7%
HH SIZE:							
1 ADULT	2,888	25%	4%	8%	35%	18%	11%
2 ADULTS	5,634	23%	4%	10%	44%	12%	8%
3 ADULTS	1,171	22%	4%	9%	50%	10%	6%
4+ ADULTS	465	18%	4%	9%	55%	9%	5%
GENDER:							
MALE	4,436	22%	4%	9%	44%	14%	8%
FEMALE	5,789	24%	5%	9%	41%	13%	8%
RACE:							
WHITE	8,214	24%	4%	9%	40%	14%	9%
BLACK	1,101	19%	6%	8%	52%	9%	7%
OTHER	699	17%	5%	6%	54%	11%	7%
EDUCATION:							
LESS THAN HS	1,051	28%	7%	10%	39%	5%	11%
HS GRAD	3,174	24%	5%	9%	43%	10%	9%
SOME COLLEGE	2,597	24%	3%	8%	42%	14%	8%
COLLEGE GRAD	1,952	21%	3%	9%	43%	17%	7%
GRAD SCHOOL	1,112	22%	2%	8%	43%	19%	6%
MARITAL STATUS:							
MARRIED	5,006	22%	4%	10%	46%	11%	7%
SEPARATED	895	18%	4%	9%	46%	15%	8%
DIVORCED	1,108	22%	3%	7%	40%	17%	11%
WIDOWED	901	32%	6%	9%	31%	11%	11%
NOT MARRIED	1,803	20%	5%	7%	43%	17%	8%
AGE:							
18 TO 24	815	19%	5%	8%	46%	13%	9%
25 TO 34	1,916	19%	4%	8%	44%	18%	7%
35 TO 44	2,285	21%	4%	9%	48%	13%	7%
45 TO 54	1,759	22%	3%	8%	47%	13%	8%
55 TO 64	1,155	25%	4%	10%	37%	14%	11%
65+	1,780	35%	5%	9%	32%	8%	11%
CHILDREN:							
NONE	5,363	26%	4%	9%	37%	15%	10%
ONE	1,431	19%	3%	9%	50%	12%	6%
TWO	1,340	20%	4%	9%	52%	9%	6%
THREE PLUS	761	22%	5%	8%	52%	5%	8%
TIME OF DAY INTERVIEW COMPLETED:							
9AM TO 1PM	674	22%	5%	9%	48%	9%	7%
1PM TO 5PM	839	25%	5%	10%	39%	11%	10%
5PM TO 7PM	2,077	29%	4%	7%	37%	14%	9%
AFTER 7PM	4,313	22%	4%	10%	43%	14%	8%
SATURDAYS	1,274	21%	5%	5%	45%	11%	7%
SUNDAYS	1,048	17%	4%	4%	48%	15%	7%

Table 4 - Is based on the last nine Nationwide studies

Table 5

	FALL 89 (n=982)	SPRING 90 (n=1018)	FALL 90 (n=968)	SPRING 91 (n=1036)	SPRING 92 (n=1001)	FALL 92 (n=1001)	SPRING 93 (n=1009)	SPRING 94 (n=1018)	FALL 95 (n=988)	SPRING 97 (n=989)	WINTER 98 (n=994)	SUMMER 01 (n=1005)
RESPONSE RATE:												
OVER 20 CALLS	66.8%	68.9%	69.9%	74.6%	73.8%	76.6%	79.3%	74.9%	70.3%	66.7%	64.9%	54.6%
UP TO 20 CALLS	64.9%	68.8%	69.5%	73.8%	72.9%	76.0%	76.8%	71.4%	67.3%	61.8%	60.8%	50.9%
UP TO 15 CALLS	63.5%	66.8%	68.1%	70.5%	71.2%	74.8%	73.0%	68.9%	65.1%	58.7%	57.8%	48.5%
UP TO 10 CALLS	60.4%	62.5%	63.0%	63.8%	66.4%	70.6%	65.9%	64.8%	59.4%	52.6%	51.4%	44.4%
UP TO 6 CALLS	52.2%	54.7%	57.8%	54.8%	58.3%	64.0%	57.4%	56.0%	49.5%	43.9%	42.0%	37.6%
UP TO 4 CALLS	43.8%	46.2%	49.8%	46.8%	49.1%	55.3%	48.0%	47.3%	39.3%	37.2%	34.8%	30.8%
UP TO 3 CALLS	36.5%	40.5%	45.5%	40.4%	42.4%	49.7%	42.2%	40.0%	33.4%	31.7%	30.0%	25.9%
NO REFUSALS	*	59.9%	63.0%	67.5%	67.6%	69.9%	71.1%	67.2%	63.8%	59.8%	54.8%	48.9%
% OF SAMPLE MALE												
OVER 20 CALLS	41.3%	40.6%	40.7%	42.5%	43.4%	39.5%	41.1%	43.4%	42.7%	40.9%	43.7%	37.9%
UP TO 20 CALLS	41.1%	40.6%	40.6%	42.4%	43.4%	39.4%	40.7%	42.7%	42.0%	40.4%	43.9%	37.4%
UP TO 15 CALLS	41.2%	40.4%	40.1%	42.0%	43.4%	39.2%	40.7%	41.9%	41.9%	40.0%	43.3%	37.0%
UP TO 10 CALLS	41.4%	40.0%	38.8%	41.5%	43.2%	39.5%	39.6%	41.9%	41.0%	39.2%	43.7%	36.1%
UP TO 6 CALLS	41.8%	39.2%	39.3%	39.7%	43.7%	39.2%	39.3%	42.4%	38.5%	39.4%	43.2%	35.2%
UP TO 4 CALLS	41.4%	40.3%	39.6%	37.9%	43.2%	37.9%	39.2%	43.1%	39.2%	39.6%	42.2%	33.3%
UP TO 3 CALLS	40.0%	40.6%	39.5%	36.4%	43.7%	38.2%	39.5%	43.3%	37.4%	39.9%	41.2%	33.4%
NO REFUSALS	*	40.8%	41.8%	42.8%	43.2%	40.0%	42.6%	44.7%	43.3%	40.8%	43.3%	37.4%
% OF SAMPLE BLACK												
OVER 20 CALLS	18.0%	20.4%	19.0%	20.3%	23.0%	22.6%	24.3%	26.3%	26.6%	24.4%	24.1%	29.2%
UP TO 20 CALLS	17.5%	20.4%	18.8%	20.2%	23.0%	22.6%	23.8%	25.9%	25.7%	23.8%	22.8%	28.2%
UP TO 15 CALLS	17.2%	20.2%	18.5%	20.0%	22.8%	22.3%	23.1%	25.4%	25.2%	23.2%	22.1%	28.2%
UP TO 10 CALLS	16.6%	19.5%	18.2%	18.7%	23.1%	21.8%	22.5%	24.6%	25.4%	23.2%	21.7%	27.4%
UP TO 6 CALLS	16.8%	18.8%	17.9%	17.4%	21.5%	21.7%	21.6%	23.9%	23.7%	21.2%	19.5%	27.2%
UP TO 4 CALLS	15.7%	19.6%	17.1%	17.2%	21.0%	21.6%	22.0%	24.2%	22.9%	21.2%	17.1%	28.0%
UP TO 3 CALLS	16.0%	18.9%	16.6%	16.8%	20.0%	21.4%	21.3%	23.0%	21.6%	22.3%	16.9%	28.7%
NO REFUSALS	*	20.0%	18.4%	20.1%	22.8%	23.2%	23.8%	25.6%	26.9%	24.8%	23.1%	29.7%
% OF SAMPLE 18 TO 24 YEARS OLD												
OVER 20 CALLS	11.3%	11.7%	10.8%	14.6%	9.5%	9.9%	14.1%	7.2%	7.7%	6.5%	5.9%	8.3%
UP TO 20 CALLS	11.4%	11.7%	10.8%	14.6%	9.4%	9.9%	14.2%	6.8%	7.8%	6.4%	6.0%	8.2%
UP TO 15 CALLS	11.3%	11.6%	10.9%	14.3%	9.4%	10.0%	13.9%	6.8%	7.9%	6.5%	6.1%	8.1%
UP TO 10 CALLS	11.1%	11.1%	11.2%	13.5%	9.4%	9.9%	14.1%	6.8%	7.5%	6.7%	5.2%	7.7%
UP TO 6 CALLS	11.2%	10.1%	11.0%	13.7%	9.7%	9.6%	13.5%	6.8%	7.3%	6.8%	4.9%	6.7%
UP TO 4 CALLS	11.4%	9.4%	11.4%	12.8%	9.2%	8.9%	13.4%	6.5%	7.1%	6.1%	4.9%	5.9%
UP TO 3 CALLS	12.1%	9.5%	9.0%	12.2%	8.6%	7.8%	13.1%	6.8%	7.1%	6.8%	5.0%	5.5%
NO REFUSALS	*	11.4%	11.1%	14.9%	10.1%	9.8%	14.5%	7.7%	7.5%	7.0%	5.9%	8.4%
% OF SAMPLE 65 YEARS OR OLDER												
OVER 20 CALLS	11.8%	14.3%	13.3%	15.1%	12.6%	15.2%	12.4%	14.3%	15.1%	16.7%	16.9%	15.9%
UP TO 20 CALLS	11.8%	14.2%	13.4%	15.2%	12.8%	15.1%	12.8%	14.8%	15.5%	17.3%	17.4%	16.6%
UP TO 15 CALLS	12.0%	14.5%	13.7%	16.0%	13.0%	15.2%	13.2%	15.2%	15.9%	17.5%	17.6%	17.1%
UP TO 10 CALLS	11.8%	15.1%	14.2%	16.9%	12.8%	15.5%	14.2%	15.7%	16.9%	18.8%	19.1%	18.4%
UP TO 6 CALLS	12.2%	15.9%	14.5%	18.0%	14.3%	15.6%	15.2%	17.0%	19.5%	19.2%	20.4%	19.5%
UP TO 4 CALLS	12.6%	16.2%	15.2%	18.3%	14.4%	17.2%	15.7%	18.6%	22.1%	20.8%	22.3%	20.9%
UP TO 3 CALLS	12.5%	16.5%	15.8%	19.4%	14.8%	16.9%	16.3%	19.4%	23.2%	20.6%	22.2%	22.4%
NO REFUSALS	*	12.9%	12.8%	13.9%	12.2%	14.2%	11.5%	13.6%	15.1%	16.1%	16.3%	14.9%
% OF SAMPLE NEVER MARRIED												
OVER 20 CALLS	22.5%	22.2%	20.1%	23.6%	21.6%	23.0%	22.7%	21.9%	23.9%	21.3%	21.6%	21.7%
UP TO 20 CALLS	22.1%	22.2%	19.9%	23.5%	21.6%	23.1%	22.9%	20.4%	23.6%	20.5%	20.9%	21.3%
UP TO 15 CALLS	22.1%	21.7%	19.4%	22.8%	21.2%	22.5%	22.5%	20.0%	23.6%	20.0%	20.4%	20.7%
UP TO 10 CALLS	21.6%	20.3%	19.3%	21.3%	21.7%	21.9%	22.0%	19.8%	22.5%	20.1%	18.7%	19.5%
UP TO 6 CALLS	21.3%	19.3%	18.9%	20.7%	21.8%	21.4%	21.4%	19.6%	20.1%	19.0%	18.9%	18.9%
UP TO 4 CALLS	20.7%	19.1%	18.9%	19.3%	21.7%	20.2%	21.2%	17.9%	18.6%	18.3%	18.4%	19.1%
UP TO 3 CALLS	20.7%	19.2%	18.7%	18.8%	20.8%	18.9%	21.7%	18.2%	17.8%	19.4%	18.1%	18.9%
NO REFUSALS	*	22.1%	20.9%	23.7%	22.1%	23.7%	23.5%	22.3%	23.3%	21.3%	22.3%	21.6%
% OF SAMPLE NOT COMPLETING HIGH SCHOOL												
OVER 20 CALLS	12.1%	16.2%	14.1%	12.9%	12.3%	10.8%	13.5%	10.0%	9.3%	8.3%	8.3%	6.7%
UP TO 20 CALLS	12.4%	16.1%	14.2%	12.9%	12.4%	10.6%	13.8%	10.3%	9.5%	8.7%	8.3%	6.9%
UP TO 15 CALLS	12.6%	16.1%	14.3%	13.3%	12.5%	10.8%	14.1%	10.4%	9.2%	8.5%	8.4%	7.1%
UP TO 10 CALLS	12.8%	16.4%	14.9%	14.1%	12.3%	11.1%	14.1%	10.3%	9.4%	8.5%	8.7%	7.5%
UP TO 6 CALLS	13.6%	16.4%	15.2%	15.2%	13.2%	11.5%	14.6%	10.7%	9.8%	8.0%	9.3%	7.9%
UP TO 4 CALLS	13.3%	16.8%	15.8%	15.8%	13.6%	11.8%	15.7%	10.4%	10.7%	8.5%	9.5%	8.2%
UP TO 3 CALLS	14.1%	16.9%	16.7%	14.9%	14.2%	11.4%	15.2%	10.4%	11.3%	8.4%	9.2%	9.0%
NO REFUSALS	*	16.4%	13.8%	12.1%	12.0%	10.3%	12.9%	10.0%	9.1%	8.1%	7.4%	6.5%
AVERAGE AGE OF RESPONDENT												
OVER 20 CALLS	41.1	43.5	43.7	43.5	43.3	43.8	44.2	44.7	45.0	46.3	47.2	46.5
UP TO 20 CALLS	41.1	43.5	43.8	43.5	43.4	43.7	44.4	45.1	45.1	46.5	46.9	46.8
UP TO 15 CALLS	41.2	43.6	43.9	43.8	43.5	43.8	44.6	45.2	45.6	46.6	47.0	47.0
UP TO 10 CALLS	41.3	43.9	44.0	44.5	43.5	44.2	44.9	45.3	45.9	47.1	47.8	47.5
UP TO 6 CALLS	41.4	44.5	44.3	44.9	44.1	44.3	45.3	45.8	47.1	47.5	48.2	48.2
UP TO 4 CALLS	41.6	44.8	44.7	45.3	44.2	45.1	45.7	46.7	48.2	48.4	49.0	48.6
UP TO 3 CALLS	41.5	44.9	44.8	45.8	44.5	45.3	46.0	46.9	48.5	48.3	49.1	49.1
NO REFUSALS	*	43.1	43.4	43.2	42.9	43.4	43.7	44.2	44.9	46.0	46.4	45.8
AVERAGE SIZE OF HOUSEHOLD												
OVER 20 CALLS	2.08	1.94	2.01	2.07	2.02	2.07	1.99	2.05	2.07	2.02	2.02	1.97
UP TO 20 CALLS	2.09	1.94	2.01	2.07	2.02	2.07	1.98	2.04	2.07	2.03	2.02	1.97
UP TO 15 CALLS	2.08	1.95	2.02	2.07	2.03	2.08	1.99	2.04	2.07	2.04	2.01	1.97
UP TO 10 CALLS	2.08	1.96	2.03	2.07	2.03	2.08	1.98	2.04	2.07	2.06	2.00	1.98
UP TO 6 CALLS	2.11	1.96	2.03	2.07	2.02	2.09	1.96	2.04	2.07	2.07	1.99	1.96
UP TO 4 CALLS	2.10	1.94	2.04	2.08	2.04	2.06	1.96	2.03	2.06	2.04	1.97	1.95
UP TO 3 CALLS	2.10	1.92	2.03	2.05	2.03	2.06	1.96	2.03	2.05	2.04	1.99	1.91
NO REFUSALS	*	1.94	2.02	2.07	2.03	2.05	1.99	2.06	2.08	2.04	2.00	1.97

(All Studies in Table 5 are Maryland Statewide Studies)

Table 6

	FALL 91 (n=1000)	FALL 93 (n=1013)	SPRING 95 (n=1443)	FALL 95 (n=1000)	FALL 96 (n=1013)	WINTER 98 (n=1021)	SPRING 98 (n=1750)	WINTER 99 (n=1501)	SPRING 99 (n=1001)	SPRING 00 (n=1232)	WINTER 01 (n=1001)
RESPONSE RATE:											
OVER 20 CALLS	68.9%	68.7%	65.1%	65.3%	65.2%	55.0%	59.0%	60.9%	56.7%	55.0%	43.8%
UP TO 20 CALLS	67.8%	67.5%	58.9%	63.2%	64.1%	51.3%	55.3%	60.0%	54.6%	50.9%	42.3%
UP TO 15 CALLS	66.5%	66.3%	55.2%	61.1%	61.8%	48.9%	52.3%	58.3%	53.0%	47.6%	40.7%
UP TO 10 CALLS	61.8%	62.0%	47.9%	57.6%	56.7%	43.1%	46.4%	54.8%	48.3%	42.4%	36.5%
UP TO 6 CALLS	52.3%	52.9%	38.8%	49.8%	47.8%	36.2%	37.8%	47.4%	41.7%	35.2%	30.4%
UP TO 4 CALLS	43.8%	43.4%	31.2%	42.7%	39.0%	29.7%	29.9%	41.5%	35.4%	29.4%	23.3%
UP TO 3 CALLS	37.3%	37.6%	27.3%	36.9%	34.1%	24.3%	25.9%	36.8%	30.3%	24.6%	20.6%
NO REFUSALS	61.4%	59.4%	52.3%	58.4%	56.8%	47.0%	49.5%	55.3%	51.1%	50.9%	35.6%
% OF SAMPLE MALE											
OVER 20 CALLS	40.1%	43.1%	41.8%	45.3%	44.2%	44.8%	37.0%	46.2%	42.4%	42.6%	39.5%
UP TO 20 CALLS	40.0%	43.0%	41.3%	45.4%	44.0%	43.9%	36.6%	46.4%	42.5%	41.4%	39.1%
UP TO 15 CALLS	39.9%	43.0%	41.3%	45.1%	43.9%	44.0%	36.4%	46.1%	42.3%	40.5%	38.7%
UP TO 10 CALLS	39.8%	43.3%	41.8%	44.6%	43.5%	43.4%	35.7%	45.9%	41.7%	39.4%	39.0%
UP TO 6 CALLS	38.9%	41.8%	40.7%	46.2%	44.1%	42.7%	34.8%	46.1%	40.2%	39.9%	38.6%
UP TO 4 CALLS	37.9%	42.0%	39.9%	45.3%	42.4%	41.6%	33.9%	45.5%	39.6%	41.0%	38.2%
UP TO 3 CALLS	38.6%	41.2%	40.3%	46.0%	40.6%	40.8%	32.8%	44.3%	39.9%	39.9%	35.8%
NO REFUSALS	40.4%	44.2%	41.6%	45.8%	44.8%	45.0%	37.3%	46.5%	42.0%	42.3%	39.7%
% OF SAMPLE BLACK											
OVER 20 CALLS	12.1%	9.8%	11.1%	10.1%	11.0%	10.5%	11.9%	10.2%	12.2%	13.5%	10.3%
UP TO 20 CALLS	12.0%	9.6%	10.4%	10.2%	10.7%	9.9%	11.7%	10.2%	11.7%	13.2%	10.0%
UP TO 15 CALLS	12.0%	9.5%	10.3%	9.7%	10.7%	9.5%	11.9%	9.8%	11.9%	13.6%	9.9%
UP TO 10 CALLS	11.6%	8.9%	10.1%	9.6%	10.5%	9.4%	12.1%	9.6%	11.7%	13.8%	9.5%
UP TO 6 CALLS	10.7%	6.9%	8.9%	9.1%	9.5%	9.0%	12.0%	8.7%	12.1%	14.1%	8.4%
UP TO 4 CALLS	10.8%	8.5%	9.5%	8.9%	10.6%	8.8%	11.5%	8.5%	11.8%	12.7%	8.3%
UP TO 3 CALLS	11.1%	8.0%	9.5%	8.2%	10.3%	8.7%	11.2%	8.2%	11.0%	12.1%	8.3%
NO REFUSALS	12.1%	9.9%	11.0%	10.1%	11.3%	10.2%	11.5%	9.9%	12.4%	13.1%	10.7%
% OF SAMPLE 18 TO 24 YEARS OLD											
OVER 20 CALLS	10.9%	7.7%	8.3%	10.4%	8.4%	7.9%	8.7%	7.4%	8.7%	8.7%	8.6%
UP TO 20 CALLS	10.9%	7.6%	8.1%	10.1%	8.4%	7.5%	8.7%	6.4%	8.6%	8.7%	8.7%
UP TO 15 CALLS	10.9%	7.4%	8.3%	9.7%	8.3%	7.2%	8.6%	7.1%	8.4%	8.5%	8.8%
UP TO 10 CALLS	11.1%	7.6%	8.2%	9.2%	7.6%	6.6%	8.6%	7.0%	7.9%	8.5%	8.9%
UP TO 6 CALLS	10.5%	7.4%	8.5%	9.1%	7.4%	6.0%	8.8%	6.4%	7.5%	8.7%	8.1%
UP TO 4 CALLS	10.5%	7.5%	8.0%	9.0%	7.1%	5.2%	8.6%	6.1%	7.3%	8.4%	7.5%
UP TO 3 CALLS	10.7%	7.4%	7.8%	9.0%	7.0%	4.5%	8.0%	5.9%	7.0%	7.4%	7.3%
NO REFUSALS	11.2%	7.7%	8.2%	10.6%	8.8%	7.4%	8.5%	7.3%	8.8%	8.8%	7.9%
% OF SAMPLE 65 YEARS OR OLDER											
OVER 20 CALLS	15.6%	16.6%	19.2%	14.5%	17.9%	16.9%	18.3%	19.1%	19.2%	20.0%	20.4%
UP TO 20 CALLS	15.9%	16.9%	20.1%	14.4%	17.9%	17.6%	19.0%	19.4%	19.4%	21.2%	20.9%
UP TO 15 CALLS	16.2%	17.2%	20.9%	14.8%	18.1%	18.0%	19.2%	19.8%	19.8%	21.8%	21.3%
UP TO 10 CALLS	16.2%	19.9%	22.2%	15.3%	18.9%	19.4%	20.4%	20.6%	21.2%	22.9%	22.6%
UP TO 6 CALLS	17.9%	18.2%	24.2%	16.4%	19.7%	20.4%	21.4%	22.4%	22.5%	24.8%	23.9%
UP TO 4 CALLS	18.8%	18.7%	25.6%	17.2%	20.6%	21.6%	23.4%	24.5%	24.4%	26.4%	25.9%
UP TO 3 CALLS	20.2%	18.8%	26.2%	19.1%	20.7%	20.8%	24.1%	26.2%	25.8%	28.1%	26.4%
NO REFUSALS	14.9%	15.8%	19.5%	14.1%	16.0%	16.1%	18.0%	19.0%	19.8%	19.4%	20.2%
% OF SAMPLE NEVER MARRIED											
OVER 20 CALLS	20.4%	16.4%	19.8%	19.9%	19.7%	20.7%	21.1%	19.0%	18.4%	22.7%	26.5%
UP TO 20 CALLS	20.4%	16.4%	18.5%	19.4%	19.6%	19.6%	20.1%	18.7%	18.0%	22.4%	26.8%
UP TO 15 CALLS	20.1%	16.2%	18.9%	19.2%	19.2%	19.1%	20.0%	18.1%	17.9%	21.3%	26.0%
UP TO 10 CALLS	19.4%	16.2%	19.0%	18.1%	18.5%	17.4%	19.4%	17.7%	17.6%	21.0%	25.4%
UP TO 6 CALLS	19.3%	15.6%	18.7%	16.9%	17.3%	17.4%	18.4%	17.0%	17.1%	20.9%	25.7%
UP TO 4 CALLS	18.5%	15.9%	18.5%	16.0%	16.6%	17.1%	16.1%	16.2%	17.1%	19.6%	24.1%
UP TO 3 CALLS	18.9%	15.8%	17.3%	15.8%	16.2%	16.9%	15.5%	15.7%	16.6%	18.8%	24.8%
NO REFUSALS	21.3%	16.5%	19.8%	20.4%	20.5%	21.3%	21.2%	19.8%	19.5%	22.5%	27.5%
% OF SAMPLE NOT COMPLETING HIGH SCHOOL											
OVER 20 CALLS	12.6%	11.3%	14.3%	10.5%	9.0%	10.3%	10.3%	8.4%	10.6%	8.7%	12.2%
UP TO 20 CALLS	12.8%	11.2%	14.5%	10.4%	9.0%	10.5%	10.7%	8.4%	10.6%	8.9%	11.9%
UP TO 15 CALLS	13.1%	11.3%	14.9%	10.6%	9.1%	10.4%	10.7%	8.3%	10.4%	9.1%	11.8%
UP TO 10 CALLS	12.8%	11.1%	15.3%	10.6%	9.5%	10.9%	11.1%	8.3%	10.1%	9.3%	12.8%
UP TO 6 CALLS	13.6%	10.4%	16.5%	11.0%	10.0%	10.5%	12.0%	8.3%	10.3%	9.5%	12.7%
UP TO 4 CALLS	14.8%	10.9%	16.9%	11.5%	11.0%	10.7%	11.6%	8.9%	10.8%	9.8%	12.9%
UP TO 3 CALLS	15.6%	10.2%	17.9%	11.7%	10.8%	10.4%	11.9%	9.2%	11.1%	10.4%	13.0%
NO REFUSALS	11.8%	10.2%	13.7%	10.8%	8.6%	10.2%	9.7%	7.9%	10.7%	7.8%	11.3%
AVERAGE AGE OF RESPONDENT											
OVER 20 CALLS	44.1	45.4	46.3	50.8	52.5	46.1	46.7	47.9	47.8	52.5	53.7
UP TO 20 CALLS	44.2	45.6	46.8	50.7	52.3	46.4	47.1	48.0	48.0	52.0	53.5
UP TO 15 CALLS	44.3	45.7	47.1	50.5	52.0	46.7	47.2	48.3	48.3	51.8	53.3
UP TO 10 CALLS	44.5	46.0	47.5	50.0	51.4	47.3	47.7	48.9	48.9	51.1	52.6
UP TO 6 CALLS	45.0	46.4	48.3	49.3	50.3	47.9	48.3	49.5	49.5	50.1	52.1
UP TO 4 CALLS	45.6	46.6	48.7	48.8	50.0	48.7	49.3	50.3	50.3	49.5	51.0
UP TO 3 CALLS	45.8	46.9	49.2	48.2	49.8	48.8	49.8	51.0	51.0	48.5	50.5
NO REFUSALS	43.6	45.2	46.4	51.1	52.8	45.7	46.5	46.1	46.1	52.6	53.8
AVERAGE SIZE OF HOUSEHOLD											
OVER 20 CALLS	1.90	2.06	1.86	1.98	2.01	2.03	2.03	1.96	1.93	1.79	1.91
UP TO 20 CALLS	1.90	2.06	1.85	1.98	2.01	2.03	2.03	1.97	1.93	1.79	1.91
UP TO 15 CALLS	1.90	2.05	1.85	1.97	2.01	2.03	2.02	1.97	1.93	1.79	1.91
UP TO 10 CALLS	1.92	2.04	1.86	1.97	2.00	2.02	2.01	1.97	1.93	1.78	1.92
UP TO 6 CALLS	1.91	2.03	1.83	1.96	2.01	1.98	2.03	1.96	1.91	1.76	1.93
UP TO 4 CALLS	1.92	2.04	1.82	1.95	2.01	1.97	2.03	1.95	1.88	1.78	1.90
UP TO 3 CALLS	1.91	2.04	1.79	1.94	2.01	1.96	2.03	1.93	1.87	1.76	1.91
NO REFUSALS	1.90	2.04	1.85	1.97	2.01	2.03	2.00	1.97	1.93	1.79	1.88

(All Studies in Table 6 are Nationwide Studies)

Table 7

	TOTAL SAMPLE FINALIZED	TOTAL CALL ATTEMPTS	TOTAL NUMBER OF COMPLETES	TOTAL CALLS ON INTERVIEWS ONLY	TOTAL FINALIZED NON-INTERVIEWS	TOTAL CALLS ON NON-INTERVIEWS
TOTAL:	18164	127497	7022	41375	11142	86122
CALL ATTEMPT:						
FIRST	6604	18164	1537	7022	5067	11142
SECOND	1966	11560	1200	5485	766	6075
THIRD	1355	9594	807	4285	548	5309
FOURTH	1033	8239	585	3478	448	4761
FIFTH	782	7206	469	2893	313	4313
SIXTH	604	6424	363	2424	241	4000
SEVENTH	506	5820	288	2061	218	3759
EIGHTH	411	5314	230	1773	181	3541
NINETH	390	4903	204	1543	186	3360
TENTH	317	4513	162	1339	155	3174
ELEVEN	301	4196	158	1177	143	3019
TWELVE	269	3895	128	1019	141	2876
THIRTEEN	220	3626	110	891	110	2735
FOURTEEN	206	3406	101	781	105	2625
FIFTEEN	204	3200	94	680	110	2520
SIXTEEN	151	2996	77	586	74	2410
SEVENTEEN	158	2845	72	509	86	2336
EIGHTEEN	127	2687	52	437	75	2250
NINETEEN	125	2560	50	385	75	2175
TWENTY	1170	2435	35	335	1135	2100
TWENTY-ONE	84	1265	34	300	50	965
TWENTY-TWO	85	1181	31	266	54	915
TWENTY-THREE	87	1096	32	235	55	861
TWENTY-FOUR	72	1009	36	203	36	806
TWENTY-FIVE	146	937	20	167	126	770
TWENTY-SIX	59	791	24	147	35	644
TWENTY-SEVEN	43	732	16	123	27	609
TWENTY-EIGHT	56	689	8	107	48	582
TWENTY-NINE	51	633	11	99	40	534
THIRTY	39	582	16	88	23	494
THIRTY-ONE	25	543	6	72	19	471
THIRTY-TWO	38	518	4	66	34	452
THIRTY-THREE	31	480	9	62	22	418
THIRTY-FOUR	32	449	4	53	28	396
THIRTY-FIVE	39	417	6	49	33	368
THIRTY-SIX	36	378	7	43	29	335
THIRTY-SEVEN	68	342	3	36	65	306
THIRTY-EIGHT	36	274	9	33	27	241
THIRTY-NINE	21	238	5	24	16	214
FORTY	27	217	3	19	24	198
FORTY-ONE	24	190	3	16	21	174
FORTY-TWO	20	166	3	13	17	153
FORTY-THREE	12	146	1	10	11	136
FORTY-FOUR	11	134	0	9	11	125
FORTY-FIVE	18	123	2	9	16	114
FORTY-SIX	15	105	3	7	12	98
FORTY-SEVEN	12	90	0	4	12	86
FORTY-EIGHT	14	78	0	4	14	74
FORTY-NINE	17	64	0	4	17	60
FIFTY +	47	47	4	4	43	43

Table 7 is based on the last eight Maryland Polls

Table 8

	TOTAL SAMPLE FINALIZED	TOTAL CALL ATTEMPTS	TOTAL NUMBER OF COMPLETES	TOTAL CALLS ON INTERVIEWS ONLY	TOTAL FINALIZED NON-INTERVIEWS	TOTAL CALLS ON NON-INTERVIEWS
TOTAL:	37889	271360	12112	73123	25777	198237
CALL ATTEMPT:						
FIRST	14053	37889	2775	12112	11278	25777
SECOND	3750	23836	1901	9337	1849	14499
THIRD	2623	20086	1393	7436	1230	12650
FOURTH	1982	17463	983	6043	999	11420
FIFTH	1599	15481	787	5060	812	10421
SIXTH	1343	13882	642	4273	701	9609
SEVENTH	1159	12539	501	3631	658	8908
EIGHTH	960	11380	415	3130	545	8250
NINETH	759	10420	347	2715	412	7705
TENTH	677	9661	322	2368	355	7293
ELEVEN	605	8984	275	2046	330	6938
TWELVE	518	8379	228	1771	290	6608
THIRTEEN	447	7861	186	1543	261	6318
FOURTEEN	450	7414	172	1357	278	6057
FIFTEEN	405	6964	148	1185	257	5779
SIXTEEN	341	6559	126	1037	215	5522
SEVENTEEN	333	6218	106	911	227	5307
EIGHTEEN	321	5885	87	805	234	5080
NINETEEN	388	5564	79	718	309	4846
TWENTY	2439	5176	78	639	2361	4537
TWENTY-ONE	219	2737	59	561	160	2176
TWENTY-TWO	174	2518	51	502	123	2016
TWENTY-THREE	162	2344	50	451	112	1893
TWENTY-FOUR	153	2182	47	401	106	1781
TWENTY-FIVE	175	2029	42	354	133	1675
TWENTY-SIX	176	1854	45	312	131	1542
TWENTY-SEVEN	142	1678	27	267	115	1411
TWENTY-EIGHT	151	1536	27	240	124	1296
TWENTY-NINE	97	1385	20	213	77	1172
THIRTY	100	1288	18	193	82	1095
THIRTY-ONE	102	1188	24	175	78	1013
THIRTY-TWO	125	1086	13	151	112	935
THIRTY-THREE	111	961	15	138	96	823
THIRTY-FOUR	93	850	14	123	79	727
THIRTY-FIVE	63	757	6	109	57	648
THIRTY-SIX	69	694	15	103	54	591
THIRTY-SEVEN	86	625	10	88	76	537
THIRTY-EIGHT	69	539	6	78	63	461
THIRTY-NINE	50	470	6	72	44	398
FORTY	38	420	3	66	35	354
FORTY-ONE	42	382	7	63	35	319
FORTY-TWO	32	340	9	56	23	284
FORTY-THREE	25	308	5	47	20	261
FORTY-FOUR	27	283	2	42	25	241
FORTY-FIVE	17	256	3	40	14	216
FORTY-SIX	17	239	3	37	14	202
FORTY-SEVEN	20	222	3	34	17	188
FORTY-EIGHT	22	202	1	31	21	171
FORTY-NINE	14	180	1	30	13	150
FIFTY +	166	166	29	29	137	137

Table 8 is based on the 11 nationwide studies (1993-2001)

Table 9

Dependent Variable: Total Number of Calls

Sample: Seven Recent National RDD Studies (R SQUARE=.028)

INDEPENDENT VARIABLES:	B	Std Error	Beta	T	Sig T
AGE	-0.453	0.051	-0.116	-8.879	0.000
GENDER	-0.346	0.136	-0.029	-2.556	0.011
RACE	0.637	0.117	0.063	5.424	0.000
MARITAL STATUS	0.169	0.048	0.046	3.562	0.000
EDUCATION	0.156	0.058	0.031	2.709	0.007
# OF ADULTS	0.001	0.093	0.000	0.006	0.995
# OF CHILDREN	0.063	0.076	0.011	0.837	0.402

Dependent Variable: Total Number of Calls

Sample: Four Recent Maryland RDD Studies (R SQUARE=.035)

INDEPENDENT VARIABLES:	B	Std Error	Beta	T	Sig T
AGE	-0.589	0.083	-0.124	-7.094	0.000
GENDER	-0.795	0.222	-0.056	-3.579	0.000
RACE	1.009	0.188	0.085	5.366	0.000
MARITAL STATUS	0.168	0.074	0.040	2.276	0.023
EDUCATION	0.181	0.090	0.032	2.014	0.044
# OF ADULTS	-0.014	0.143	-0.002	-0.097	0.923
# OF CHILDREN	-0.248	0.126	-0.033	-1.960	0.050

Variable Definitions:

Gender: 1 = male, 2 = female

Race: 1 = white, 2 = black, 3 = other

Marital Status: 1 = married, 2 = separated, 3 = divorced, 4 = widowed, 5 = never married

Education: 1 = less than H.S., 2 = H.S., 3 = some college, 4 = college degree, 5 = graduate work

#of Adults: 1 = 1, 2 = 2, 3 = 3, 4 = 4 or more

#of Children: 1 = 1, 2 = 2, 3 = 3 or more

TABLE 10
CALL ATTEMPT TRENDS

	(1989-1992)	(1993-1996)	(1997- 2001)
Total Number of Call Attempts:			
National	4.72	5.95	6.22
Maryland Statewide	4.52	5.69	6.97
Response Rates:			
National	68.9	66.1	56.4
Maryland Statewide	72.5	74.8	65.1
% Completed on First Call Attempt:			
National	23.9	25.5	22.2
Maryland Statewide	28.8	27.2	19.8
% Completed on Third Call Attempt:			
National	37.3	34.0	27.8
Maryland Statewide	42.6	38.5	29.8
% Completed that were previously Home Recorders:			
National	8.4	9.9	13.2
Maryland Statewide	9.9	12.8	14.3
% Completed that were previously No Answers:			
National	13.6	12.1	6.8
Maryland Statewide	14.3	10.4	7.6