

Which Incentives Work Best for Respondents in Today’s RDD Surveys?

Barbara Lepidus Carlson, Karen CyBulski, and Tom Barton
Mathematica Policy Research, Inc., P.O. Box 2393, Princeton, NJ 08543-2393

Abstract

As has been widely reported in the survey literature, response rates for telephone surveys—particularly RDD surveys—have been declining significantly in recent years. Mathematica Policy Research (MPR) has conducted several rounds of the Community Tracking Study Household Survey (CTS) for the Center for Studying Health System Change since 1996, to inform health care decision makers about changes in the U.S. health care system, and how such changes affect people. Obtaining high response rates for the CTS has been increasingly difficult each round, and round 5 (2007-08) posed the greatest challenges yet. MPR implemented various incentive and other strategies, including varying dollar amounts and the form and timing of payments. This paper shows how these strategies, implemented within random sample replicates, affected response rates and the effort needed to obtain completed interviews.

Key Words: response rates, incentives, RDD surveys

1. Introduction

The Health Tracking Household Survey (HTHS) is the fifth in a series of telephone surveys of the U.S. population concerning the status of the nation’s health care system. It samples households using a list-assisted random-digit-dialing (RDD) methodology, and collects the data via interviewer-administered questionnaires over the telephone. Because response rates to surveys in general, and for RDD samples in particular, have been declining in recent years, data collection efforts have focused on any and all means to increase or at least maintain previously attained response rates. The HTHS was no exception. We began HTHS with the methodology used in the prior data collection effort: sending an advance letter to any sampled phone numbers for which we had an address match, and a promise of a \$20 incentive payment after completing the core interview. In addition, we decided to introduce in this round a \$5 cash payment in the advance letter, based on literature indicating that this would improve cooperation rates. We had only planned one small experiment to see if the \$5 cash payment made a difference in cooperation rates and the effort needed to gain cooperation.

As data collection got underway, we appeared to be getting even lower contact and cooperation rates than anticipated, and began looking for ways to improve response rates. Over the course of data collection, we changed the wording of the cover letter and introduction, we mailed out a glossy carefully designed postcard, and we made several changes to the incentive structure over time, including the amount and timing of the payments. In the end, these attempts proved fruitful, and we ended up meeting our targeted response rate. We wanted to present in this paper the effect of the various methods attempted. However, because most of these changes were not part of a randomized experiment, we have to use a quasi-experimental approach to assess the methods, finding the most appropriate comparison groups across various randomly released replicates of the sample. Still, we feel that our comparisons show the impact of our various approaches in a way that would be useful for other surveys. Please see CyBulski, Barton, and Carlson (AAPOR 2008) in this same volume for more information on the impact of the \$5 cash incentive, which remained constant throughout the data collection period, and which was assessed using a randomized experiment.

2. Data

The 2007 HTHS was sponsored by the Center for Studying Health System Change (www.hschange.org), and was funded by the Robert Wood Johnson Foundation. Mathematica Policy Research, Inc., is responsible for designing and implementing the RDD sample, address and name matching, programming and testing the computer-assisted telephone interview (CATI), interviewer training and data collection, and weighting. The HTHS, previously known as the Community Tracking Study (CTS), examines how the U.S. health care system is changing over time and how those changes affect people. There have been five rounds of this survey to date: 1996-97, 1998-99, 2000-01, 2003, and 2007. The fifth round was conducted from April 2007 through January 2008. While the prior rounds of the CTS Household Survey included nationally representative samples clustered in 60 randomly selected communities, the 2007 HTHS included a national sample only.

The 2007 HTHS is a national list-assisted RDD sample of U.S. households. Unlike the previous three rounds, the 2007 consists of entirely new sample. There is no intentional overlap with telephone numbers sampled in prior rounds. The sample was stratified by census region and urbanicity. At the start of the interview, information is obtained about all household members. The household members are enumerated, after which the CATI program divides the household into what are referred to as “family insurance units” (FIUs). These units do not define who is actually covered together under specific health insurance plans. Instead, it is a theoretical construct of family members who could be covered together under a typical family plan. It consists of an adult and his/her spouse (if any), plus any minor children. (Children who are full-time college students are included as part of their parents’ FIU, even if they are living away at college.) Within each FIU, one child is randomly selected to be part of the study. All adults are included in the study. One knowledgeable FIU “informant” answers most questions on behalf of all adults in the unit, and all questions on behalf of the randomly selected child. This “core interview” takes about 30 minutes to complete. The other adults in the unit are asked a separate set of questions as part of a self-response module completed at a different time, questions that ask about satisfaction with health care, among other things, that cannot be answered by the FIU informant. This brief interview component takes about 15 minutes to complete.

About 20 percent of households have more than one FIU, and therefore more than one core interview. And each core interview can have one or more additional self-response modules associated with it for other adults in the FIU. Incentives for completing the interview were offered to respondents in the advance letter (if we had a matched address) and in the introduction read by the interviewer over the telephone. The promised payment started out as \$20 per interview, and was later raised to \$40.

We selected about 72,500 telephone numbers over 5 sample releases. After screening out known businesses, cell phones, and nonworking numbers, we ended up releasing to our telephone interviewers 34,875 numbers to call. Among these, we ended up with 8,228 responding eligible households from which we had 9,407 FIU completes representing data for 17,797 persons. The remaining 26,647 released telephone numbers broke down as follows: 220 started the interview but broke off after the screener section; 107 were households that were ineligible for the study (all military or all minors); 8,156 were determined to be households but did not respond to even the screener; 11,682 were determined to be non-households (that is, they were businesses, cell phones, or nonworking numbers); and 6,482 telephone numbers were not resolved (we did not determine whether they were working residential landline numbers). The overall household-level response rate was 47 percent, and the cumulative household-FIU level response rate was 43 percent.¹

We started out the current round by capping the number of call attempts at lower numbers than in previous rounds, in an attempt to reduce costs. However, part way through the data collection, we decided to re-release some of the phone numbers that had been assigned a final non-complete status and generally relaxed the rules to maximize the number of completes. The number of calls per phone number ranged from 1 to 73, with the mean number of call attempts being 13. These calls were made at different times of day, and different days of the week. However, we did not call a household back after two unsuccessful refusal conversion attempts.

¹ These rates are the same unweighted and weighted, because each telephone number had the same probability of selection.

3. Incentives

Starting in April 2007, the beginning of data collection, if we could link a valid address to a telephone number using any of three vendors employed for this purpose, we sent out an advance letter with a \$5 bill and the promise of \$20 for completing the interview. Whether or not we could send an advance letter, the interviewer promised a \$20 payment for completing the interview as part of the introduction. Several months later, in late August 2007, we made two big changes to the incentives. First, we increased the promised payment from \$20 to \$40 in both the advance letter and the interviewer introduction. Second, we started mailing \$40 checks to households that had refused once and for which we had a valid address and a name from our telephone number matching. Finally, in late November 2007, with our last sample release, we decided to mail a \$40 check in the advance letter, if we had a valid address and a name.

For this paper, we use the following terminology to refer to these various incentive types:

- Post-Pay: payment made after completion of the survey
- Conversion Pre-Pay: payment made after the phone number was released for calling, and after call attempts made, but before the completion of the survey
- Pre-Pay: payment made at the time the advance letter is mailed out, before any completion attempts made

Note that, for the conversion pre-pay and the pre-pay, we must have a valid address and a name to put on the check.² All others must be post-pay. In addition, for these two types of payment, the person can cash the check without having completed the interview. The following table shows who received and cashed checks by whether at least one core interview was completed.

Complete	Check Issued	Check Cashed	Number of Cases
No	No		21,441
No	Yes	No	4,879
No	Yes	Yes	327
Yes	No		223
Yes	Yes	No	946
Yes	Yes	Yes	7,059
Total			34,875

Some households who completed the interview did not want a check issued and/or did not give a name and address to mail it to (2.7 percent of completes). Among the 8,005 households who completed the interview and had a check mailed to them, 11.8 percent did not cash the check. Among those households issued checks and never completing the interview (the unsuccessful pre-pays and conversion pre-pays), 93.7 percent did not cash the check and only 6.3 percent did, a loss of about \$13,000, which was more than outweighed by the 946 completed households who did not cash their checks.

The following table summarizes the five sample releases over the course of data collection, and the sub-releases defined by address status.

² One possible solution to the lack of a valid name would be to send a gift card, rather than a check, although there is less of an ability to track whether the gift card is received and activated. We did look into the possibility of sending gift cards that could be centrally activated by the survey contractor after completion of the interview, but we could not find a vendor able to do this in an efficient and cost-effective way during our data collection effort.

Release Dates	Release Number	Sub-Releases	Address Match Status
Between 4/2/07 and 4/27/07	1	1a, 1b	obtained address
		1c	no address
Between 5/11/07 and 5/31/07	2	2a, 2c, 2d, 2e	obtained address
		2b, 2f	no address
6/11/07	3	3a	no address
		3b	obtained address
Between 8/3/07 and 10/17/07	4	4a, 4e	no address
		4b, 4c, 4d	obtained address
11/20/07	5	5a	no address
		5b	obtained address

For releases 1, 2, and 3, households were promised a \$20 post-pay, and some refusers got a \$40 conversion pre-pay, if we had a valid name and address. For release 4, most initially promised a \$20 post-pay, then later promised a \$40 post-pay. Some were promised \$40 from the outset, if they were among the later sub-releases. Most refusers got a \$40 conversion pre-pay, if we had a valid name and address. In release 5, everyone who had a valid name and address got a \$40 pre-pay check in their advance letter.

Among the 33,280 released phone numbers that were not screened as fax or modem numbers, slightly more than half (51.4 percent) were able to be matched to an address by either our sampling vendor (Marketing Systems Group, Inc.) or by one of our address match vendors (Accurant or Masterfile). Among these, at least 40 percent had a name to which we could make out a pre-payment (or conversion pre-payment) check. The remaining 60 percent either did not qualify for a pre-payment check (because they had already completed the interview or otherwise were finalized before such checks were sent out) or we could not send a check due to the lack of a valid name match (less than 5 percent of those with matched addresses). Among those with an address match, 370 of the advance letters containing the \$5 cash pre-pay were returned as undeliverable, and 250 of the advance letters with checks were returned.

4. Methods

Because the incentive approaches being compared here were not set up under experimental conditions, we had to find comparable sample components that could be reasonably compared to assess the effectiveness of various approaches. For each one, we would compare the household-level response rate after 60 days, as well as the final response rate, where appropriate. It is important to note that the response rates shown here are a bit cruder than the official ones used for HTHS, and are presented here only for the purposes of comparing various approaches. The crude response rates here use a CASRO-type approach in dealing with the unresolved telephone numbers, and disregard the numbers screened out as invalid before releasing the sample for calling. Furthermore, the estimated residency and eligibility rates assigned to the undetermined cases are done over the full sample, rather than within smaller cells, as was done for the more carefully constructed official response rates.

First, we wanted to assess whether the timing of payment made a difference. This would mean comparing the promised \$40 post-pay to a \$40 pre-pay. For the first of these two groups, we are actually looking at households that were originally promised \$20 in their advance letter but then later promised \$40. The second group was prepaid \$40 in their advance letter. For this comparison, we included some phone numbers from release 4 and all of release 5, as long as they had a valid address. Here we look at both the short-term (60-day) and final response rates. (See comparison A in table that follows.)

Next, we wanted to assess whether the amount of the promised post-pay in the interviewer introduction made a difference. This would mean comparing the promised \$20 post-pay to the promised \$40 post-pay. For this comparison, we included only those phone numbers for which contact was made but no letter was sent; that is, we were unable to match an address to the phone number. For this comparison, we only looked at the 60-day response rate, because these cases all had other interventions that followed and that would confound the final response rate comparison. (See comparison B in table that follows.)

Address Status	Interviewer Contact Status	Initial Incentive Type	Comparison	Group	Number of Cases
Residential address match		\$40 post-pay	A	1	3,859
		\$40 pre-pay	A	2	1,054
		\$20 post-pay			12,192
No address match	Contact	\$20 post-pay	B	1	7,389
		\$40 post-pay	B	2	910
	No contact*				7,876
Fax/modem released sample					1,595
Total released sample					34,875

*Also includes businesses that were contacted.

Note that the 12,192 cases with a residential address match who were released earlier in the sample are excluded from these two comparisons of incentive timing and amount because we thought that there were too many confounding factors for them to be good candidates for either of these comparisons.

We also wanted to assess whether the conversion pre-pay of \$40 was an effective refusal conversion tool. This would mean comparing those refusers who got the \$40 conversion pre-pay to those who did not. This comparison includes phone numbers with at least one refusal or hang-up, and excludes phone numbers whose interviews were completed before we started that sample release's conversion pre-payments. Here we look only at the final response rates.

5. Results

5.1 Comparing \$40 Post-pay to \$40 Pre-pay

We found that paying \$40 up front is preferable to promising \$40. Among those with addresses who received advance letters, we see about a 5 percentage point increase in the final response rate for those who received a \$40 check in that letter, compared to those who were promised \$20 in the letter and then \$40 in the interviewer introduction.

When Paid \$40	Households	60-Day Response Rate	Final Response Rate	Mean Call Attempts	Total Call Attempts
Promised post-pay	3,859	11.4	31.3	16.9	65,227
Pre-pay	1,054	35.0	36.5	9.4	9,947

More importantly, the short-term response rate difference was quite large. Almost all of the pre-pay households who were going to respond did so within 60 days. Only one-third of the promised post-pay households who ultimately responded did so within the first 60 days, indicating that getting their cooperation took a great deal more effort. We see that with the large difference in the mean number of call attempts made for each group. Those receiving the pre-pay in their advance letter ended up with an average of 9.4 call attempts, while those promised a post-pay in that letter ended up with an average of 16.9 call attempts.

5.2 Comparing \$20 Post-pay to \$40 Post-pay

As might be expected, we also saw a short-term benefit in offering \$40 rather than \$20 in the interviewer introduction. After 60 days, the response rate among those offered \$40 was 4.3 percentage points higher than the rate for those offered \$20. This is among those who did not receive an advance letter because of the inability to match the phone number to an address, but did have some contact with the interviewer.

Amount Promised in Interviewer Introduction	Households	60-Day Response Rate	Mean Call Attempts	Total Call Attempts
\$20	7,389	21.7	13.6	100,342
\$40	910	26.0	9.4	8,523

There was also a moderate reduction in the number of call attempts made when offering more of an incentive. We see that, for the \$40 post-pay group, the average number of call attempts was 9.4, while for the \$20 group it was 13.6 calls.

5.3 Comparing \$40 Conversion Pre-pay to Promised Post-pay Only

Finally, we look at the impact of pre-paying refusers as a way of converting them to respondents.

Conversion Pre-pay Among Those Ever Refusing*	Households	Final Response Rate	Mean Call Attempts	Total Call Attempts
No	5,851	6.8	16.5	96,316
Yes	5,669	24.9	20.1	113,763

*Excludes pre-pay sample releases, and those who completed interview before conversion pre-pays introduced for that sample release.

Among those who ever refused, or who hung up on the interviewer before the introduction could be read, we see that sending a refusal conversion letter with a check for \$40 (to those who had a valid address and name) converted about 25 percent to become responders, while those for whom sending such a letter and check was impossible (no valid address or name) had a much lower conversion rate (about 7 percent). While a fair argument can be made that those with matchable phones and addresses may be different than others (unpublished phone numbers, recent movers), the stark difference here is unlikely to be fully attributable to those differences.

For this comparison, we did not see a big difference in terms of the mean number of call attempts, although those who were sent a conversion pre-payment had slightly more calls made on average (20.1 vs. 16.5).

6. Conclusions

This round of the HTHS required increased effort, time, and resources to achieve the targeted response rate. We found that an acceptable response rate can be achieved if both the survey sponsor and the data collection organization are willing to be flexible about incentive payments—their amount and how they are presented to sample members. Had we rigidly followed our original plan for incentives (\$5 cash pre-pay and promised \$20 post-pay by check), we would not have been able to meet our target.

Our first finding was that pre-paying incentives is preferable to post-paying. We saw a large (23.6 percentage point) increase in the short-term response rate, and a moderate (5.2 percentage point) increase in the final response rate when pre-paying \$40, as opposed to promising a \$40 post-pay. This was among those with matched addresses. Along with this improvement in response rate, we saw a mean reduction of 7.5 interviewer call attempts when pre-payment was made in the advance letter, rather than the promise of a post-pay.

Next, we saw a moderate (4.3 percentage point) increase in the short-term response rate between those promised a \$40 post-pay and those promised a \$20 post-pay. This was among those with no matched address and with some interviewer contact. The \$40 post-pay households required 4.2 fewer interviewer call attempts, on average.

Finally, we saw a large (18.1 percentage point) increase in the refusal conversation rate when a payment was made before completion of the interview. Those receiving the conversion pre-payment—those with valid addresses and names—had an average of 3.6 more interviewer call attempts than those not receiving the payment because no address and name were available for mailing the pre-payment. This is likely due to the fact that, once a household completes its first core interview, the interviewers make more call attempts to complete additional core interviews or self-response modules with additional adults.

While one might be concerned about pre-payments for those who do not ultimately respond to the survey, we found that there were relatively few households who cashed their pre-payment check if they did not respond, and this number was more than outweighed by those households who did in fact respond but did not cash their check or did not want a check in the first place. That coupled with the clear reduction in interviewing costs leads us to believe that pre-payments are well worth the effort, for those sampled phone numbers to which an address (and at least one name) can be linked.

7. Future work

We plan to compare the characteristics of those in the various comparison groups discussed in this paper to see what types of households fell within the various incentive categories, and which were most responsive to these approaches. This will also allow us to look at who the reluctant respondents were—those who our extra efforts to increase the response rate brought in, and whether they were different than those who responded with less effort or lower incentives or post-pays. We will also attach approximate costs to the levels of effort (numbers of calls, hours per complete) shown above and compare that to the added costs due to nonrespondents cashing pre-payment checks and other costs associated with the pre-payment methodology. These additional explorations of the data will allow us to determine whether the extra effort to increase the response rate was worth it from both data quality and cost perspectives.