

The Effectiveness of Advance Letters for Cell Telephone Samples

Benjamin Skalland¹, Zhen Zhao², Jenny Jeyarajah²

¹NORC at the University of Chicago

²Centers for Disease Control and Prevention

Abstract

In random digit dial (RDD) telephone surveys, advance letters mailed prior to dialing sampled telephone numbers may increase survey response rates (de Leeuw et al. 2007). The ability to mail advance letters to RDD samples relies on the availability of addresses that matched to the sampled telephone numbers. Traditionally, address matching was possible only for landline telephone samples with directory listings, which are not generally available for cell telephone numbers. It is now possible to obtain mailing addresses for a sizeable proportion of cell telephone numbers. Since cell telephone samples are now an increasingly large part of RDD telephone surveys, the use of advance letters mailed prior to dialing cell telephone numbers may result in an increase in response rates similar to those seen for landline telephone numbers. To test this possibility, mailing addresses were obtained for samples of landline and cell telephone numbers in the 2013 National Immunization Survey, a large, national, dual-frame RDD survey sponsored by the Centers for Disease Control and Prevention and fielded by NORC at the University of Chicago. Prior to dialing, advance letters were mailed to half of the cases in the landline and cell telephone samples with available addresses. In this study, we compared address match rates and address accuracy rates between the landline and cell telephone samples and measured the effect of the advance letter on survey response rates in the landline and cell telephone samples. We found that while advance letters had a positive effect on screener completion in the landline sample, they did not impact screener completion in the cell telephone sample. The lack of effect in the cell telephone sample may be due to a higher rate of inaccurate address matching than in the landline telephone sample: in the cell telephone sample, recently-updated addresses were found to be more accurate, and when the analysis was restricted to advance letters mailed to recently-updated addresses, the impact on screener completion in the cell telephone sample was similar to that in the landline sample. We also found that advance letters had a larger positive effect on interview completion in the landline sample, but sample sizes in the cell telephone sample for the experiment were too small to evaluate the impact on interview completion. Implications of these results for dual-frame RDD telephone surveys will be discussed.

Key Words: Advance Letters, Cell telephone sample, National Immunization Survey

1. Background and Objectives

In many RDD telephone surveys, advance letters are mailed prior to dialing sampled telephone numbers. Advance letters inform respondents about the purpose and importance of the survey, alert respondents that they will be called, and promote the legitimacy of the survey. In a meta-analysis of advance letter experiments in RDD landline sample telephone surveys, de Leeuw et al. (2007) found that the use of advance letters increased cooperation rates (COOP1, AAPOR 2011) by an average of 5

percentage points ($p < 0.001$) and increased response rates (RR1, AAPOR 2011) by an average of 4 percentage points ($p < 0.001$) when compared with control groups that did not receive advance letters.

The National Immunization Survey (NIS) is a large, national, ongoing survey to produce annual estimates of vaccination coverage among 19 to 35 month old children . The NIS-Teen is a survey built on the NIS sample to produce annual estimates of vaccination coverage among 13 to 17 year old adolescents.¹ The surveys are sponsored by the Centers for Disease Control and Prevention and fielded by NORC at the University of Chicago. They include two components: a dual-frame (landline and cell telephone) RDD survey of eligible households; and a mail survey to vaccination providers identified during the household interviews.

Historically, the NIS and NIS-Teen mailed advance letters to landline sample cases for which an address can be obtained. Prior to being dialed in the telephone centers, landline sample phone numbers are sent to a vendor to obtain the mailing address associated with each phone number. If a matched address is found, an advance letter is mailed to the address before the number is dialed. In 2005, an experiment was conducted to measure the effect of sending advance letters in the NIS landline sample (NORC, 2005). In this experiment, advance letters were not mailed to a random subsample of cases with a matched address but continued to be mailed to other cases with a matched address. Compared to cases with a matched address that were not mailed an advance letter, the advance letter increased the resolution rate by 1.5 percentage points, increased the screener completion rate by 0.6 percentage points, had no impact on the eligibility rate, and increased the interview completion rate by 4.9 percentage points.² Overall, the letter increased the CASRO response rate among matched cases by about 5 percentage points.³

Whereas the NIS and NIS-Teen historically mailed advance letters only for landline sample cases, it is now possible to obtain mailing addresses for a sizeable proportion of cell telephone sample cases. The availability of mailing addresses for the cell telephone sample raises three research questions that are the focus of this paper:

1. What proportion of NIS and NIS-Teen cell telephone sample lines can a mailing address be obtained for, and how does this proportion compare to that in the landline sample?
2. How accurate are the mailing addresses that can be obtained for the NIS and NIS-Teen cell telephone samples, and how does the accuracy compare to that in the landline samples?

¹ The NIS-Teen sample lines are a subset of the NIS sample lines, with the NIS-Teen screener and interview administered directly following administration of the NIS screener and interview for lines that are flagged to be part of the NIS-Teen sample.

² The resolution rate is the proportion of sampled phone numbers for which it could be determined whether or not the phone number was a working residential number; the screener completion rate is the proportion of identified working residential numbers that completed the screener; the eligibility rate is the proportion of screened households that were eligible for the interview; and the interview completion rate is, of cases that completed the screener and were found to be eligible for the interview, the proportion that completed the interview.

³ The CASRO response rate is the product of the resolution rate, the screener completion rate, and the interview completion rate.

3. What effect do advance letters have on response rates in the NIS and NIS Teen cell telephone samples, and how does this compare to the effect in the landline samples?

2. Methods

In Quarter 2 of 2013, NORC conducted an experiment to answer these research questions. The design of the experiment is presented in Figure 1. Replicates were selected from the NIS and NIS-Teen landline and cell telephone samples in the 50 U.S. states plus the District of Columbia, and telephone numbers within these replicates were flagged to be part of the experiment. In order to minimize the design effect for national estimates, numbers were flagged for the experiment so as to mimic a nationally-distributed sample to the extent possible. Landline sample numbers underwent a pre-screening process to remove a portion of the business and non-working numbers prior to dialing. The landline sample phone numbers that were not removed via the pre-screening process and all cell telephone sample numbers flagged for the experiment were sent to a vendor for address matching. Advance letters were mailed to a random 50 percent subsample of those numbers matched to addresses. In Figure 1, boxes A1 and B1 represent those numbers matched to addresses and mailed advance letters in the landline sample and cell telephone sample, respectively; boxes A2 and B2 represent those numbers matched to addresses but not mailed advance letters in the landline sample and cell telephone sample, respectively. Sample sizes were set such that approximately 10,000 cases would fall into each of boxes A1, A2, B1, and B2. The standard NIS and NIS-Teen landline sample advance letter was used for both sample types in the experiment and can be found in Appendix A.

Figure 1: Design of the NIS Advance Letter Experiment, Q2/2013

Phone Numbers Flagged for Experiment in Selected Replicates*					
		Pre-screened out [†]	Not Pre-screened Out		
			Not Matched to Address	Matched to Address	
				Advance Letter Not Mailed	Advance Letter Mailed
Landline Sample			A2 (n=10,233)	A1 (n=10,170)	
Cell Telephone Sample			B2 (n=10,974)	B1 (n=10,967)	

* Numbers included in the experiment were flagged for both NIS and NIS-Teen to the extent possible.

[†] Only landline sample numbers undergo a pre-screening process.

To address the three research question, we: (1) Computed and compared address match rates for the landline and cell telephone sample cases included in the experiment. (2) Compared the accuracy of the matched addresses between the landline and cell telephone samples. Ideally we would compare the mailing address to the respondent's self-reported address of residence. However, respondents were not asked for their full addresses during the NIS and NIS-Teen interviews, and therefore a full comparison between the advance letter address and the respondent's true address could not be made. Instead, we compared the ZIP code of the mailing address that was obtained to the respondent-reported ZIP

code as a measure of the accuracy of the matched addresses. (3) Compared response and yield rates between those cases mailed advance letters (boxes A1 and B1 in Figure 1) and those cases matched to addresses but not mailed advance letters (boxes A2 and B2). Several response and yield rate measures were examined:

- a. **Resolution Rate:** The proportion of released telephone numbers that could be resolved as residential, non-residential, or non-working
- b. **WRN/APCN Rate:** The proportion of resolved telephone numbers in the landline sample that were working residential numbers (WRN Rate); the proportion of resolved telephone numbers in the cell telephone sample that were active personal cell telephone numbers (APCN Rate)
- c. **Screener Completion Rate:** The proportion of identified WRNs/APCNs that completed the NIS screener
- d. **CASRO Screener Response Rate:** The estimated response rate through the screener, equal to the product of the resolution rate and the screener completion rate
- e. **Yield Rate through Screener:** The proportion of dialed cases that completed the NIS screener
- f. **Interview Completion Rate:** The proportion of screened eligible households that completed the NIS interview
- g. **Consent Rate:** The proportion completed interviews that gave consent to contact vaccination providers

All estimates presented in this paper are at the national level and are unweighted.⁴ Because the resolution and screener completion stages are largely the same for NIS and NIS-Teen and are administered on nearly the same sample, results from these stages are presented for NIS only; because the interview itself differs for NIS and NIS-Teen, and because households eligible for NIS (i.e., those with a 19-35 month old child) are almost always different households than those eligible for NIS-Teen (i.e., those with a 13-17 year old adolescent), interview completion and consent rates are presented separately for NIS and NIS-Teen.

Before presenting the results of the experiment, we note that the effectiveness of mailing advance letters is dependent on the accuracy of the address that is matched to the telephone number – an advance letter cannot have an effect if it is not mailed to the correct household. Following the completion of the experiment, the address vendor provided an indicator of how recently each address that was matched to a cell telephone sample number had been updated: within 90 days versus more than 90 days. The results in this paper are presented both for the cell telephone matches as a whole and split out by the recentness of the address update.

We also note that the impact of the advance letter may be dependent on how much time passes between the point when the letter is mailed and the point when the case is called for the survey. For the NIS and NIS-Teen, in order to allow time for the advance letters to arrive, we wait a minimum of 12 days after the advance letters are mailed before the first dials are placed to those cases. However, the interval between the mail date and the first dial date can be much longer than 12 days, as dials are placed to new cases only when the telephone centers have the capacity to dial fresh sample and scheduled callbacks for

⁴ Because sampled telephone numbers were flagged for the experiment to mimic a nationally-distributed sample as much as possible, the design effects are small and the weighted results are very similar to the unweighted results.

already-released sample have been exhausted. In the advance letter experiment, there was a range of intervals between the advance letter mail date and the date of first dial; in this paper, unless otherwise noted, results are presented for cases that were first dialed within three weeks of the advance letter mail date.

3. Results

3.1 Address Match Rates

Table 1 presents the proportion of telephone numbers that were able to be matched to addresses, first among all telephone numbers sent for address matching and then excluding telephone numbers that were later found to be non-working or non-residential.⁵ Excluding non-working and non-residential cases, the address match rate for the cell telephone sample (55.2 percent) was only slightly lower than for the landline sample (58.2 percent). However, if only addresses that had been updated within the prior 90 days are accepted as matches, the address match rate in the cell telephone sample is cut nearly in half (30.3 percent).

3.2 Accuracy of the Matched Addresses

Table 2 presents the proportion of NIS completed interviews for which the respondent-reported ZIP code of residence was the same as the advance letter mailing ZIP code; Table 3 presents the same information for NIS-Teen completed interviews. Because the ZIP code agreement rates are based only on cases with completed interviews, the sample sizes are quite small, but it is clear that the cell telephone sample addresses were less accurate than the landline sample addresses. Among the NIS completed interviews in the landline sample, the advance letter ZIP code matched the respondent-reported ZIP code 96.4 percent of the time, but in the cell telephone sample, they matched only 46.4 percent of the time. However, if the cell telephone sample addresses are limited to those that were updated within 90 days prior to matching, the agreement rate increases to 64.0 percent. Results were similar in the NIS-Teen, with an agreement rate of 96.4 percent in the landline sample, 63.2 percent in the cell telephone sample overall, and 77.9 percent when the cell phone sample addresses are limited to those that were recently updated.

3.3 Effect of the Advance Letter on Response, Eligibility, and Yield Rates

Tables 4, 5, and 6 present NIS screener response and yield rate components, limited to cases dialed within 3 weeks of the advance letter mail date.⁶ In each table, the results are presented first for cases mailed an advance letter and then for cases matched to an address but not mailed an advance letter; also shown are the differences in the rates between these two groups and the p-values for tests of no difference. Tables 4 and 5 present these rates for the landline and cell telephone samples, respectively; Table 6 limits the cell telephone sample cases to those whose addresses were updated in the 90 days prior to matching.

⁵ Because only the landline sample underwent a pre-screening process to remove some non-working and non-residential numbers prior to address matching, the address match rate excluding non-working and non-residential numbers offers a fairer comparison of the match rate between the landline and cell telephone samples.

⁶ The cases dialed within 3 weeks of mailing differ from the set of all cases mailed a letter in terms of their geographic distribution. To obtain an appropriate no-letter comparison group for cases dialed within 3 weeks of mailing, the no-letter cases were subsampled to get a set of no-letter cases that matched the letter cases dialed within 3 weeks of mailing in terms of their distribution across NIS geographic sampling strata. In this way, the sets of cases being compared in each of Tables 4, 5, and 6 have the same geographic distributions.

In the landline sample, we observed higher resolution rates, screener completion rates, CASRO screener response rates, and screener yield rates for cases mailed an advance letter compared with cases matched to an address but not mailed an advance letter (Table 4). For cases mailed an advance letter, the resolution rate was 2.57 percentage points higher, the screener completion rate was 1.58 percentage points higher, the CASRO screener response rate was 3.28 percentage points higher, and the screener yield rate was 2.98 percentage points higher. The difference in resolution rate was statistically significant at the $\alpha=0.10$ significance level, and the differences in the CASRO screener response rate and the screener yield rate were statistically significant at the $\alpha=0.05$ significance level.

In the cell telephone sample, we did not observe an effect of the advance letter on these rates when all cases with matched addresses were included in the analysis (Table 5). However, we did observe a 4.43 percentage point higher resolution rate and a 2.87 percentage point higher screener yield rate for cases mailed an advance letter when limiting to cases with recently-updated addresses (Table 6). The resolution rate difference is significantly different from zero at the $\alpha=0.05$ significance level and the screener yield rate difference is significantly different from zero at the $\alpha=0.10$ significance level.

Table 7 presents the interview completion rate and consent rate for the NIS landline sample, and Table 8 presents these rates for the NIS-Teen landline sample. When limiting to cases that were dialed within 3 weeks of mailing, sample sizes for these rates were too small – fewer than 30 cases for NIS and fewer than 60 cases for NIS-Teen – to produce meaningful estimates; therefore the rates presented in Tables 7 and 8 are based on all landline sample cases in the experiment, including those dialed more than 3 weeks after the advance letters were mailed. We found that the advance letter had a large, positive impact on the interview completion rate in the landline sample. The letter group had a 9.5 percentage point higher interview completion rate than the no-letter group for NIS and a 8.5 percentage point higher interview completion rate for NIS-Teen; the latter difference is significantly different from zero at the $\alpha=0.10$ level. However, the increase in interview completion was nearly negated by a corresponding decrease in the consent rate. For both NIS and NIS-Teen, the consent rate was nearly 8 percentage points lower for the letter group, although given the small sample sizes these differences are not significant at the $\alpha=0.10$ significance level.

Table 9 presents the interview completion rate and consent rate for the NIS cell telephone sample, and Table 10 presents these rates for the NIS-Teen cell telephone sample. The rates presented in these tables are based on all cell telephone sample cases in the experiment, including those whose addresses were not recently updated and those dialed more than 3 weeks after the advance letters were mailed. Even when including all cases, sample sizes are small, and we did not observe statistically significant differences in these rates between those cases mailed and advance letter and those cases matched to an address but not mailed an advance letter. The lack of effect could be due to the inclusion of cases dialed more than 3 weeks after the letters were mailed and to the inclusion of cases whose addresses were not recently updated; however, limiting to cases dialed within 3 weeks of mailing and to cases with recently-updated addresses reduces sample sizes for estimating these rates to fewer than 20 cases per group, leaving too little power to detect differences of the sizes we would expect to see. That is, sample sizes for the experiment in the cell telephone sample were too small to produce meaningful effect size estimates for the interview completion rate and consent rate.

4. Discussion

In this paper, we assessed the impact of advance letters in the NIS and NIS-Teen landline and cell telephone samples. We found that the advance letter had a small, positive impact on screener completion in the landline sample for cases dialed within three weeks of the date when the advance letter is mailed. We found it also had a large, positive impact on the interview completion rate in the landline sample, but this was largely negated by a corresponding drop in the consent rate. It is possible that the letter caused some to complete the interview who would not otherwise have responded, raising the interview completion rate, but that these new marginal respondents were less likely to give consent to contact vaccination providers, lowering the consent rate. The findings that the advance letter had a small positive impact on screener completion and a larger positive impact on interview completion in the landline sample are consistent with the findings from De Leeuw et al. (2007) and the 2005 NIS advance letter experiment (NORC, 2005).

In the cell telephone sample, the advance letter had a similar impact on screener completion as in the landline sample, but only when the analysis was limited to cases for which the matched address was recently updated. The lack of observed effect of the advance letter on screener completion when all cell telephone cases were included in the analysis is likely due to the fact that the matched addresses in the cell telephone sample were much less accurate than in the landline sample (as measured by the agreement between the mailing ZIP code and the respondent-reported ZIP code), and therefore the letters were less likely to be mailed to the household corresponding to the sampled telephone number. An effect was observed when limiting the analysis to cases with recently-updated addresses, likely because such addresses were found to be more accurate.

We did not observe an impact of the letter on the interview completion rate or consent rate in the cell telephone sample, but sample sizes for these rates were quite small in the experiment. It's possible that, as was the case for screener completion, an effect on interview completion or consent would be seen only if the analysis is limited to cases dialed within 3 weeks of mailing and whose addresses were recently updated; however, limiting the sample in this way reduces sample sizes to fewer than 20 cases per group leaving far too little power to produce meaningful estimates.

5. Limitations

Because the NIS and NIS-Teen are not general population surveys, the results presented here for the accuracy of the matched addresses and the impact of the advance letter on the interview completion and consent rates apply only to households with 19-35 month and 13-17 year old children and do not necessarily apply to other populations. Furthermore, the results presented in this paper considered only the impact of the advance letter alone; an advance letter mailing could also be used as a way of delivering pre-incentives to respondents or as a way of directing respondents to complete the survey on the web. These uses of the advance letter could result in additional increases in the response rate beyond what can be obtained through the use of a letter alone.

6. Conclusions

The decision of whether to utilize advance letters must weigh the potential improvement in response rates against the costs of obtaining address matches and printing/ mailing advance letters. Several studies have demonstrated that advance letters improve response rates in RDD landline samples, and our study was consistent with those previous findings. Our study suggests that advance letters may offer similar improvements in response rates in RDD cell telephone samples, but only if the matched addresses are limited to those that have been recently updated. Limiting the matched addresses to those that have been recently updated reduces the proportion of RDD cell telephone sample lines for which an address can be obtained by about half, and therefore the impact the advance letter can have on the overall cell telephone sample response rate – i.e., the response rate for all cases, including both those with and without matched addresses – is similarly reduced. In this way, the potential for advance letters to increase the overall response rate may be less in RDD cell telephone samples than in RDD landline samples.

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Table 1: Proportion of Cases with a Matched Address, Advance Letter Experiment, Q2/2013

	Landline Sample	Cell Telephone Sample	Cell Telephone Sample, Matches Limited to Addresses Updated within 90 Days
<i>Among All Cases Sent for Matching*</i>			
Sent for Matching	43,017	49,945	49,945
Matched Address	20,835	21,941	10,875
Match Rate†	48.4±0.5	43.9±0.4	21.8±0.4
<i>Excluding Cases Found to Be Non-Working or Non-Residential*</i>			
Sent for Matching	29,624	32,110	32,104
Matched Address	17,241	17,726	9,738
Match Rate†	58.2±0.6	55.2±0.5	30.3±0.5

* Excludes cases pre-screened as non-working numbers or businesses.

† Presented as point estimate (%) ± 95% confidence interval.

Table 2: Agreement between Advance Letter ZIP Code and Respondent-Reported ZIP Code of Residence, NIS, Advance Letter Experiment, Q2/2013

	Landline Sample	Cell Phone Sample		
		Overall	Address Updated within 90 Days	Address Not Updated within 90 Days
<i>Counts</i>				
Agreement	106	51	32	19
Disagreement	4	59	18	41
<i>Distribution</i>				
Agreement*	96.4±3.5	46.4±9.3	64.0±13.3	31.7±11.8
Disagreement*	3.6±3.5	53.6±9.3	36.0±13.3	68.3±11.8

* Presented as point estimate (%) ± 95% confidence interval.

Table 3: Agreement between Advance Letter ZIP Code and Respondent-Reported ZIP Code of Residence, NIS-Teen, Advance Letter Experiment, Q2/2013

	Landline Sample	Cell Phone Sample		
		Overall	Address Updated within 90 Days	Address Not Updated within 90 Days
<i>Counts</i>				
Agreement	265	98	74	24
Disagreement	10	57	21	36
<i>Distribution</i>				
Agreement*	96.4±2.2	63.2±7.6	77.9±8.3	40.0±12.4
Disagreement*	3.6±2.2	36.8±7.6	22.1±8.3	60.0±12.4

* Presented as point estimate (%) ± 95% confidence interval.

Table 4: Screener Response and Yield Rates for Cases Dialed within 3 Weeks of Mailing, Landline Sample, NIS, Advance Letter Experiment, Q2/2013

	Dialed Within 3 Weeks of Mailing			
	Address Matched, Mailed	Address Matched, Not Mailed	Diff (Perc. Points)	P-Value for Test of Diff=0
Released	2,460	2,450		
Resolved	1,485	1,416		
WRN	1,091	1,025		
Screened	1,005	928		
Resolution Rate*	60.4±1.9	57.8±2.0	2.57	0.067
WRN Rate*	73.5±2.2	72.4±2.3	1.08	0.513
Screener Comp Rate*	92.1±1.6	90.5±1.8	1.58	0.197
CASRO Screener Response Rate*	55.6±2.3	52.3±2.3	3.28	0.049
Yield Rate through Screener*	40.9±1.9	37.9±1.9	2.98	0.033

* Rate presented as point estimate (%) ± 95% confidence interval.

Table 5: Screener Response and Yield Rates for Cases Dialed within 3 Weeks of Mailing, Cell Telephone Sample, NIS, Advance Letter Experiment, Q2/2013

	Address Matched, Mailed	Address Matched, Not Mailed	Diff (Perc. Points)	P-Value for Test of Diff=0
Released	2,658	2,658		
Resolved	1,268	1,227		
APCN	759	735		
Screened	568	574		
Resolution Rate*	47.7±1.9	46.2±1.9	1.54	0.26
APCN Rate*	59.9±2.7	59.9±2.7	-0.04	0.982
Screener Comp Rate*	74.8±3.1	78.1±3.0	-3.26	0.137
CASRO Screener Response Rate*	35.7±2.4	36.1±2.4	-0.35	0.837
Yield Rate through Screener*	21.4±1.6	21.6±1.6	-0.23	0.841

* Rate presented as point estimate (%) ± 95% confidence interval.

Table 6: Screener Response and Yield Rates for Cases with Addresses Updated in Past 90 Days and Dialed within 3 Weeks of Mailing, Cell Telephone Sample, NIS, Advance Letter Experiment, Q2/2013

	Address Matched, Mailed	Address Matched, Not Mailed	Diff (Perc. Points)	P-Value for Test of Diff=0
Released	1,219	1,219		
Resolved	519	465		
APCN	401	341		
Screened	311	276		
Resolution Rate*	42.6±2.8	38.1±2.7	4.43	0.026
APCN Rate*	77.3±3.6	73.3±4.0	3.93	0.154
Screener Comp Rate*	77.6±4.1	80.9±4.2	-3.38	0.256
CASRO Screener Response Rate*	33.0±3.0	30.9±3.0	2.15	0.324
Yield Rate through Screener*	25.5±2.4	22.6±2.3	2.87	0.097

* Rate presented as point estimate (%) ± 95% confidence interval.

Table 7: Interview Completion and Consent Rates, Landline Sample, NIS, Advance Letter Experiment, Q2/2013

	Address Matched, Mailed	Address Matched, Not Mailed	Diff (Perc. Points)	P-Value for Test of Diff=0
Eligible	63	68		
Complete	56	54		
Consent	34	37		
Interview Completion Rate*	88.9±7.8	79.4±9.6	9.48	0.133
Consent Rate*	60.7±12.8	68.5±12.4	-7.80	0.390

* Rate presented as point estimate (%) ± 95% confidence interval.

Table 8: Interview Completion and Consent Rates, Landline Sample, NIS-Teen, Advance Letter Experiment, Q2/2013

	Address Matched, Mailed	Address Matched, Not Mailed	Diff (Perc. Points)	P-Value for Test of Diff=0
Eligible	202	210		
Complete	147	135		
Consent	95	98		
Interview Completion Rate*	72.8±6.1	64.3±6.5	8.49	0.062
Consent Rate*	64.6±7.7	72.6±7.5	-7.97	0.148

* Rate presented as point estimate (%) ± 95% confidence interval.

Table 9: Interview Completion and Consent Rates, Cell Telephone Sample, NIS, Advance Letter Experiment, Q2/2013

	Address Matched, Mailed	Address Matched, Not Mailed	Diff (Perc. Points)	P-Value for Test of Diff=0
Eligible	90	66		
Complete	63	49		
Consent	43	30		
Interview Completion Rate*	70.0±9.5	74.2±10.6	-4.24	0.557
Consent Rate*	68.3±11.5	61.2±13.6	7.03	0.440

* Rate presented as point estimate (%) ± 95% confidence interval.

Table 10: Interview Completion and Consent Rates, Cell Telephone Sample, NIS-Teen, Advance Letter Experiment, Q2/2013

	Address Matched, Mailed	Address Matched, Not Mailed	Diff (Perc. Points)	P-Value for Test of Diff=0
Eligible	137	138		
Complete	77	80		
Consent	49	51		
Interview Completion Rate*	56.2±8.3	58.0±8.2	-1.77	0.767
Consent Rate*	63.6±10.7	63.8±10.5	-0.11	0.988

* Rate presented as point estimate (%) ± 95% confidence interval.

Appendix A



DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Centers for Disease Control and PreventionNational Center for Health Statistics
3311 Toledo Road
Hyattsville, Maryland 20782**From the Director of the National Center for Health Statistics:**

I am asking for your help with an important study conducted by the Centers for Disease Control and Prevention (CDC) called the National Immunization Survey (NIS). This survey tells us which vaccines people in the U.S. have received and about other important health topics. Results from the NIS are used to help health officials in their efforts to improve health care programs. In the next few weeks, NORC at the University of Chicago will call your household to take part in this study for CDC.

For this study, we need to ask about vaccinations and about children's health. Some households also may be asked questions about the health services their children need or use. If you have a child between 17 and 37 months of age, it would be helpful to have your child's immunization records handy when answering our questions. However, you can also answer these questions without the records.

Your phone number was chosen randomly by computer. It is important for us to interview every household we call to get a complete picture of your area's immunization rates and key factors that might affect them. The study is important, but you do not have to take part, or you can decide not to answer one or more questions.

You may call this toll free number at **1-877-267-8154** if you would like to take part in the study now. You can also call this number to learn more about the study and what you will be asked. For more information, turn this letter over or go to the study's web site: <http://www.cdc.gov/nchs/nis.htm>.

Your answers to the NIS will provide information to help improve the nation's health now and in the years ahead. We need your help to make this study a success. We hope you will decide to take part when we call.

Thank you for your cooperation. I am grateful for your help.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles J. Rothwell".

Charles J. Rothwell
Acting Director, National Center for Health Statistics
Centers for Disease Control and Prevention

OVER →

What is NORC at the University of Chicago?

NORC at the University of Chicago (NORC) is an independent research organization that conducts interviews on immunizations and children's health for the CDC. Additional information on NORC can be found on its website at www.norc.org.

NORC Toll Free Number: 1-877-267-8154

You can call the NORC toll free number to take part in the study right away, learn more about the study, and hear what you will be asked.

Who sees my answers?

You will be called by a trained interviewer who enters your answers into a computer. Everyone who works on the survey must sign an oath that promises they will never give out anyone's personal information. Only a few people who work on this survey ever see any personal information. Answers that could identify you or your family in any way are separated from your other answers. Survey findings are put into summary reports that contain no names or other information that identifies you.

How do you protect my information?

Your answers are used for health research purposes only. We conduct this survey under the Public Health Service Act. It and other strict U.S. laws require that we protect your family's information and keep it confidential. If you would like to know more about how we protect your answers, these laws are described in detail at www.cdc.gov/nchs/about/policy/confidentiality.htm.

If you want to know more about your rights as a study participant you may call 1-800-223-8118, toll free. This is the number for the Research Ethics Review Board at CDC. You will be asked to leave a message. Say you are calling about Protocol 2013-01.

How do I find more about immunizations and places to get them?

You may call toll free 1-800-CDC-INFO (1-800-232-4636) for more information about vaccinations or to get the phone number of a doctor or clinic near you.

If you prefer to use a TTY

Please call the AT&T Relay Service at 1-800-855-2880 and request that NORC be called at 1-877-267-8154.