

Reducing RDD Data Collection Costs Related to Non-Contacts

The National Immunization Survey

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The National Immunization Survey

Data collection conducted quarterly since April 1994.

Sponsored by the National Immunization Program and the National Centers for Health Statistics, both of the Centers for Disease Control and Prevention.

National study—data collected in 78 non-overlapping Immunization Action Plan Areas:

- 50 states, 27 metropolitan areas, and the District of Columbia.

Yearly, 10 million telephone calls made to identify households with 35,000 age-eligible children.

Measures vaccination coverage of children between the ages of 19 and 35 months of age.



Balancing Act

Trade-offs between level of effort, cost, response rates and non-response bias

Number of call attempts for generic non-contact cases (cases that are only ring-no answers)



RDD Response Rates for the NIS

- Resolution rate: sample numbers identified as non-working, nonresidential or residential.
- Screening response rate: complete eligibility screening among known households in sample.
- Interview response rate: complete detailed interviews in eligible households
- Overall CASRO response rate = product of 3 response rates. (Ezzati-Rice et al., 2001, Journal of Economic and Social Measurement).



National Immunization Survey: Q4/2000-Q3/2001

- 2 million sample telephone numbers fielded
- 33,500 interviews for children age 19-35 months
- Percentage of children who are up-to-date on all of the key recommended childhood vaccinations



National Immunization Survey: Q4/2000-Q3/2001

- Final sample allowed 15 max. attempts on non-contact cases plus additional calling on some of these cases
- Hypothetically restrict maximum call attempts for non-contacts to 10
- Reset final status codes based on first 10 attempts, recalculate response rates and weights, produce vaccination estimates and standard errors



Example: Q3/2001 Non-Contact Cases

- 505,035 cases fielded for Q3/2001
- 68,504 non-contact cases already at 10 attempts received an average of 5.9 additional attempts (13.6% of sample)
- 8,118 of non-contacts were resolved (12% of non-contacts)
- 60,386 remained at non-contact status after completing all attempts



Q3/01 Response Rates

	Full Sample	Restricted 10-call sample (minus resolved non-contacts)
Resolution rate:	86.8%	85.8%
Screening rate:	96.2%	96.5%
Interview rate:	91.6%	91.6%
Overall CASRO rate:	76.5%	75.8%



Key outcome measure: Vaccination Up-to-Date Status

- 4 or more DPT vaccinations
- 3 or more poliovirus vaccinations
- 1 or more measles-containing vaccinations
- 3 or more *Haemophilus Influenzae* type B (Hib) vaccinations



Comparison of Key Outcomes: Q4/00-Q3/01

	Full Sample	Restricted Sample
4:3:1:3 up-to-date	77.08%	77.13%
Standard error	0.44%	0.44%



Comparison of Key Outcomes: Q4/00-Q3/01

Difference for 78 geographic areas in 4:3:1:3 UTD status (Final sample minus restricted sample):

Mean difference: 0.008%

Largest positive difference: 0.72%

Largest negative difference: -1.16%



Characteristics of “Lost” Interviews for 4 Quarters

	“Lost” Unweighted	Final Unweighted	Difference
Sample size	191	33,500	
Below poverty	26.2%	19.2%	7%
Minority			
Hispanic	23.0%	20.4%	2.6%
Black non-Hispanic	21.5%	17.1%	4.4%
Total Minority	49.7%	43.0%	6.7%
College graduate	30.9%	38.0%	-7.1%
Telephone interruption	12.0%	7.0%	5%



Hypothetical Cost Savings

Interviewer hours saved:

- Quarter 3/2001: 13% of total interviewer hours worked.
- Q4/2000-Q3/2001: 17% of total hours worked.



Conclusions

- Limiting efforts on non-contact cases in an RDD survey can save considerable resources with limited effects on data quality when the survey is targeted to a rare population
- An ongoing survey will sometimes allow researchers to measure the impact of methodological changes on key survey estimates





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