Growing Challenges to State Telephone Surveys of Health Insurance Coverage: Minnesota as a Case Study

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Overview of Talk

- Goals of the state health insurance surveys and methodology
- Challenges to achieving those goals
- Methods for facing these challenges
- Case study analysis
  - Description of MNHA response rates over time
  - Comparison of MNHA baseweight data to population controls
  - Impact of post-stratification adjustments to uninsurance estimates
- Summary and implications

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State Health Insurance Surveys

- Survey objectives:
  - Monitor the distribution of health insurance coverage at state level
  - Describe the characteristics of the uninsured
  - Identify economic and demographic factors associated with lack of health insurance
  - Achieve a large enough sample size to
    - Focus on policy relevant subpopulations
    - Detect change over time
  - Inform state level policy and decisions

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Methodology

- Typically RDD telephone surveys
- Most conduct statewide stratified probability sampling
  - over-sample non-metro regions and among populations of color
- All collect point-in-time and some prior year coverage from one or more household member
- Flexibility of changing the instrument to capture policy and methodologically relevant issues

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Minnesota Health Access Surveys

MNHA	Sample Size	Response Rate	Refusal Rate	Cooperation Rate	Survey Language	Funding Source
1990	10,310	94%			English	Minnesota Health Access Fund
1995	11,519	90%			English	Blue Cross and Blue Shield of MN Foundation
1999	9,571	79%			English	Blue Cross and Blue Shield of MN Foundation (BCBS-MN)
2001	27,315	65%	19%	74%	English, Spanish, Hmong	Health Resources and Services Administration (HRSA)
2004	13,802	59%	24%	68%	English, Spanish, Hmong, Somali	BCBS-MN, HRSA, MN Department of Human Services, Hennepin County
2007	9,728	44%	26%	57%	English, Spanish	Minnesota Department of Health

Response rates in 1999, 2001, 2004, 2007 are based on AAPOR RR4.
Current analysis is limited to data from last three years using a consistent sample design.

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Challenges to RDD Surveys

- Non-response error
  - Falling response rates over time
- Sample coverage
  - Those without landline telephones excluded
    - However, rate is small and stable over time
  - Growing concerns about sample coverage due to wireless only households
- Strong assumption in RDD surveys: data are missing at random

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What is Known about Sample Coverage Error

- Percent of households with no phone service is stable at between 1-2%
  - Handle through post-stratification weighting adjustments; considered a conventional adjustment
- Approximately 4% of people in the U.S. were living in households that are cell phone only in 2004
- Grown to approximately 15.8% in 2007 – focus of our interest here

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Characteristics of Wireless Only Households (Blumberg & Luke, 2008)

- Wireless only households are different:
  - Younger (age 18-29)
  - Adults living with unrelated adults
  - Renters vs homeowners
  - Men
  - Living in poverty
  - Hispanic and Non-Hispanic Black
- Relation to health measures:
  - Better self-reported health, more active
  - Higher rates of uninsurance
  - More likely to experience financial barriers to health care
  - Less likely to report usual source of care

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Challenges: Comparison of 2001-07 Sample to Population Controls

- Baseweights adjust for the probability of selection
- But, MNHA baseweights…
  - Under-represent children and young adults, and over-represent adults 55 and older
  - Increasingly over-represent whites, under-representing Black, Latino, Asian households
  - Consistently under-represent those without phones
  - Over-represent homeowners (new question in 2007)

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Comparison of 2001-07 Sample to Population Controls, Continued

- MNHA baseweights…
  - Consistently under-represent lower educated (high school grad or below) and over-represent higher educated (at least some college) among adults 18-34
  - Over-represent those who own homes
    - new question in 2007
  - Consistently over-represent non-US born whites
  - Increasingly under-represent non-US born Blacks, Latinos, and Asians
  - Increasingly over-represent non-US born multi-racial and other race

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Method to Deal with Challenges: Post-stratification Weights

So we post-stratify….

Conventional weights

- Age
- Race/ethnicity
- Phoneless rate

Less Conventional (new in 2007)

- Age by education
- Home ownership
- Race/ethnicity by nativity

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Impact of Post-stratification on Uninsurance Estimates

	Baseweight	Demographic + telephone interruption weight	Wireless age by education (homeowner '07) weight	Nativity weight	Percent increase from baseweight to final weight
2001	5.36%	5.71%	6.03%	6.10%	**13.81%**
2004	7.05%	7.41%	7.85%	7.69%	**9.08%**
2007	5.47%	6.40%	7.17%	7.18%	**31.26%**

Baseweight adjusts for sample stratum, probability of selection by number of phones and number of people in household.

Demographic weight adjusts for region by age, race, and telephone interruption.

Wireless demographic weight adjusts for age by education and homeownership in 2007.

Nativity weight adjusts for race/ethnicity by US and non-US born.

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Summary of Findings

- Consistent with the survey literature, the MNHA response have fallen over time
- The extent to which the MNHA data corresponds to population controls using the baseweights (adjust for the probability of selection) varies from year to year
- Coverage estimates are sensitive to these weighting adjustments

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Implications

- As response rates fall and concerns about sample coverage increase we become more reliant on population control totals
- Prior research suggest that low response rates are not necessarily associated with bias to estimates of coverage, nor are response rates the only metric of data quality
- Survey researchers continue to be confident that post-stratification weighting adjustments can handle these challenges—adjustments will be increasingly complex
- Recommend careful examination of sample completeness and use of less conventional weighting factors
- Continue to look to latest research to inform future waves of the data collection

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Thank you

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