Finding low-income telephone households and people who do not have health insurance using auxiliary sample frame information for a random digit dial survey

Tim Triplett, The Urban Institute

David Dutwin, ICR

Sharon Long, The Urban Institute

62nd Annual AAPOR Conference – Anaheim, California

May 17, 2007

ICR

Urban Institute

Presentation Overview

Purpose: Obtain representative samples of adults without health insurance and adults in low (less than 300 percent of the federal poverty level (FPL)) and medium (between 300 and 500 percent FPL) income families while still being able to produce reliable estimates for the overall population.

Strategy: Telephone exchanges within Massachusetts were sorted in descending order by concentration of estimated household income. These exchanges were divided into three strata and we oversampled the low and middle income strata.

Results: Oversampling of low and medium income strata did increase the number of interviews completed with adults without health insurance as well as adults living at or below 300 percent FPL.

ICR

Urban Institute

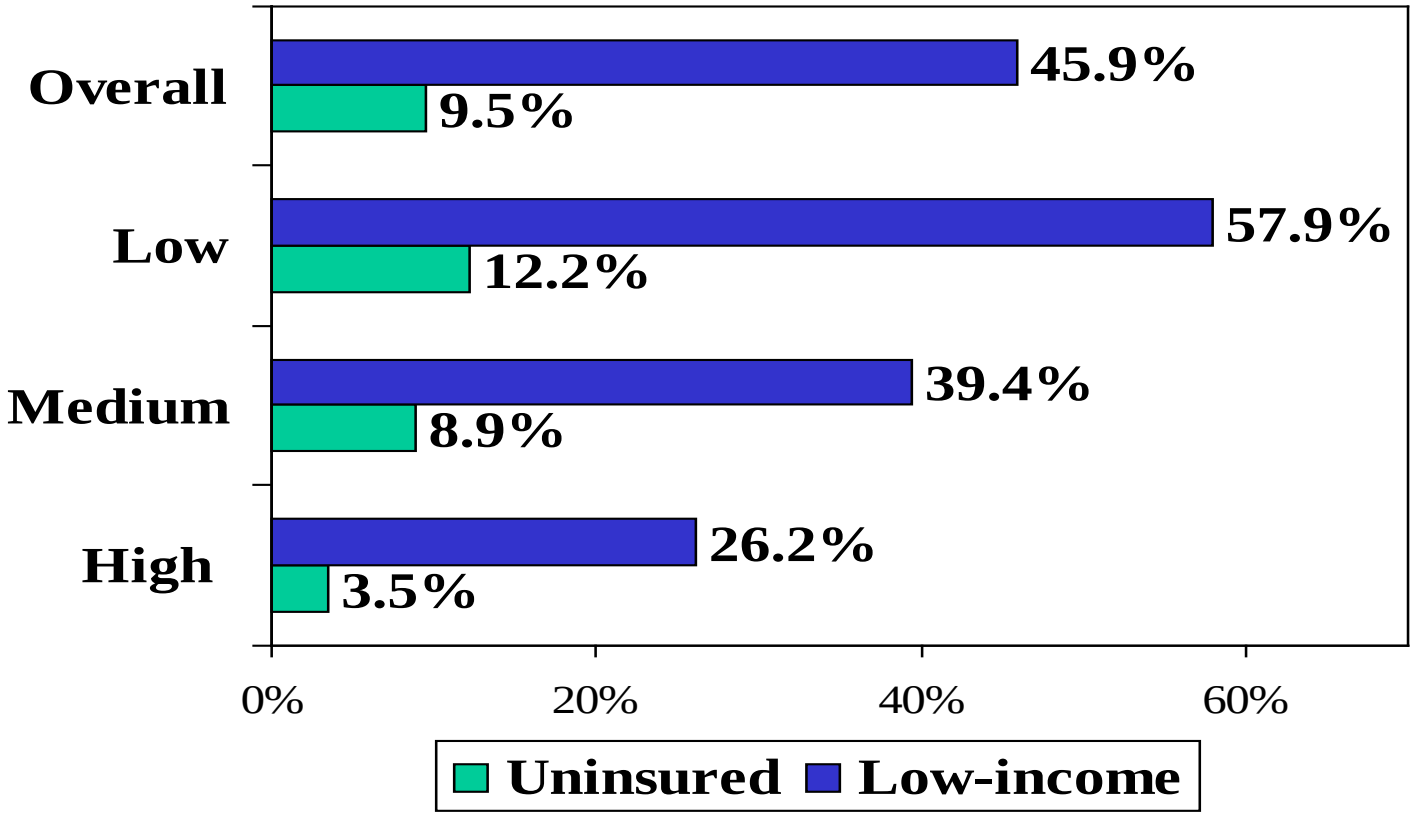
Sample design features

- RDD telephone sample in State of Massachusetts
- Started on October 16, 2006, ended on January 7, 2007
- 3,010 interviews with adults 18 to 64
- Over-sample of low-income households (n=1381)
- Separate screening sample was used to increase sample of uninsured (n=704)
- One adult interviewed per household
- Overall response rate 49% (AAPOR rr3 formula)

ICR

Urban Institute

Percentage of uninsured and low-income adults by income strata



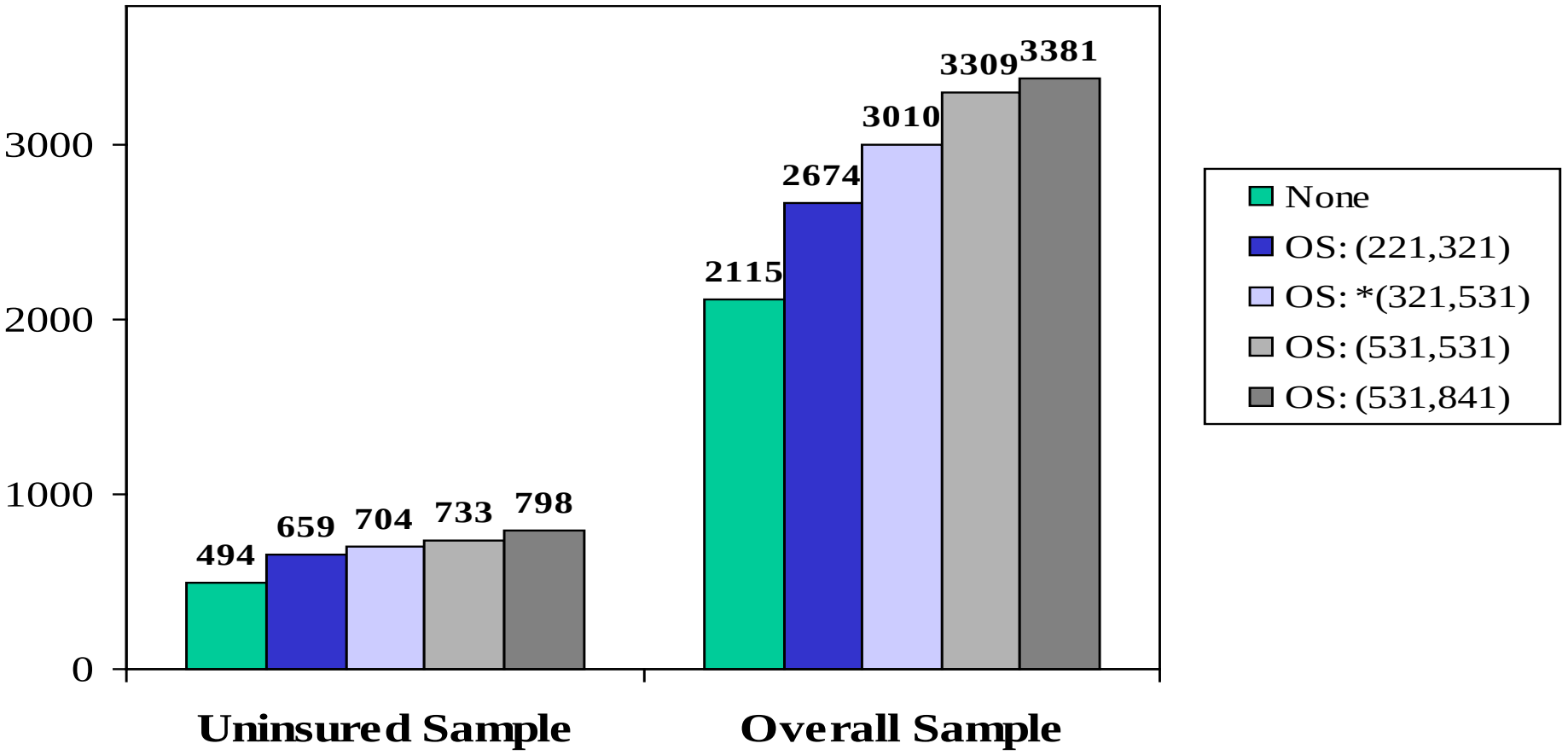
Alternate sampling strategies that could yield enough uninsured respondents without increasing survey costs

- **None** – no oversampling of strata – simply increase the amount of screening interviewers
- **OS (2:2:1, 3:2:1)** - release twice as much sample in the main study from the low and middle income strata and 3 times as much in the screener survey
- **OS *(3:2:1, 5:3:1)** - strategy we used
- **OS (5:3:1, 5:3:1)** - same for main and screener
- **OS (5,3:1, 8:4:1)** – heavy oversample in screener

ICR

Urban Institute

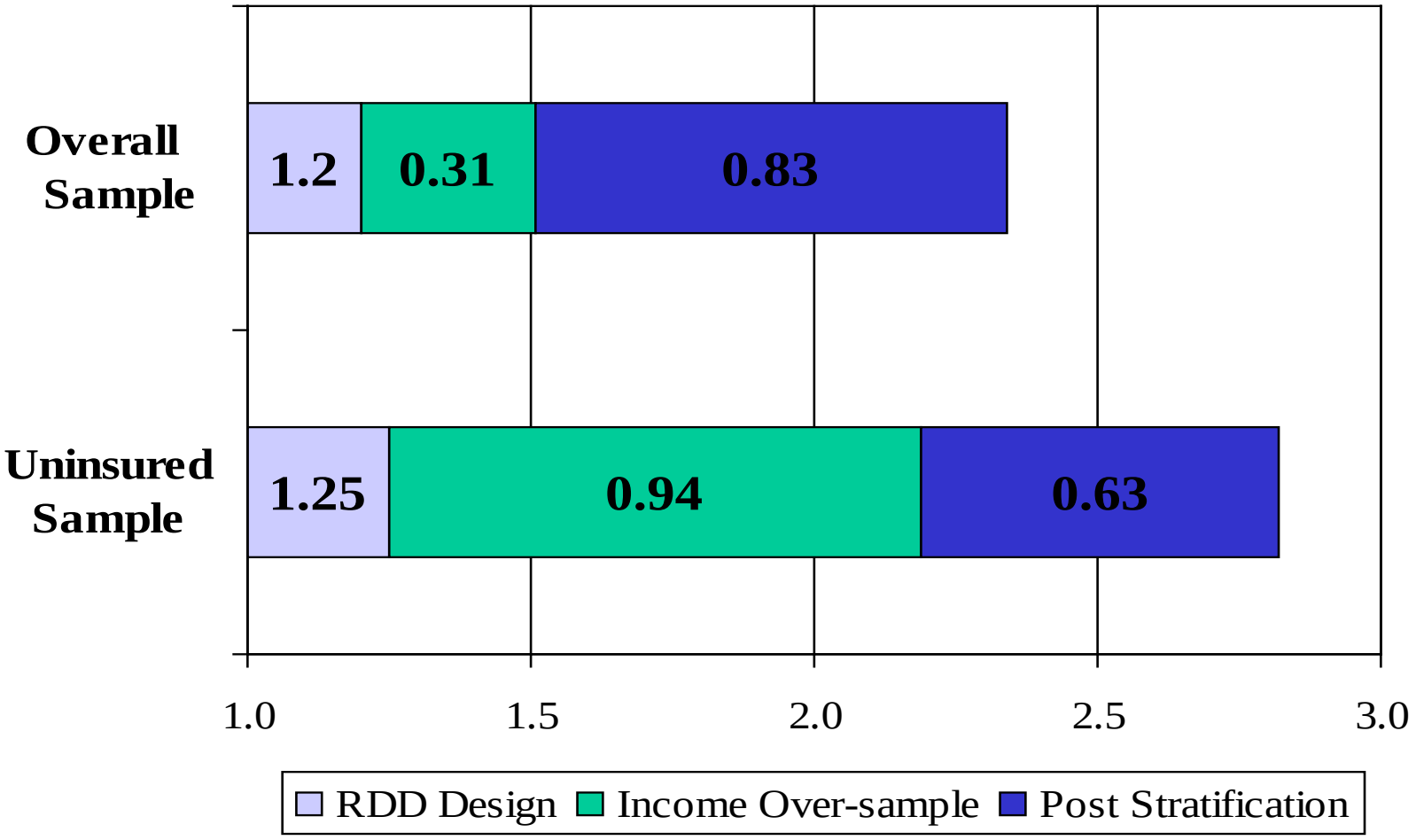
Simulation of sample sizes resulting from the various oversampling strategies



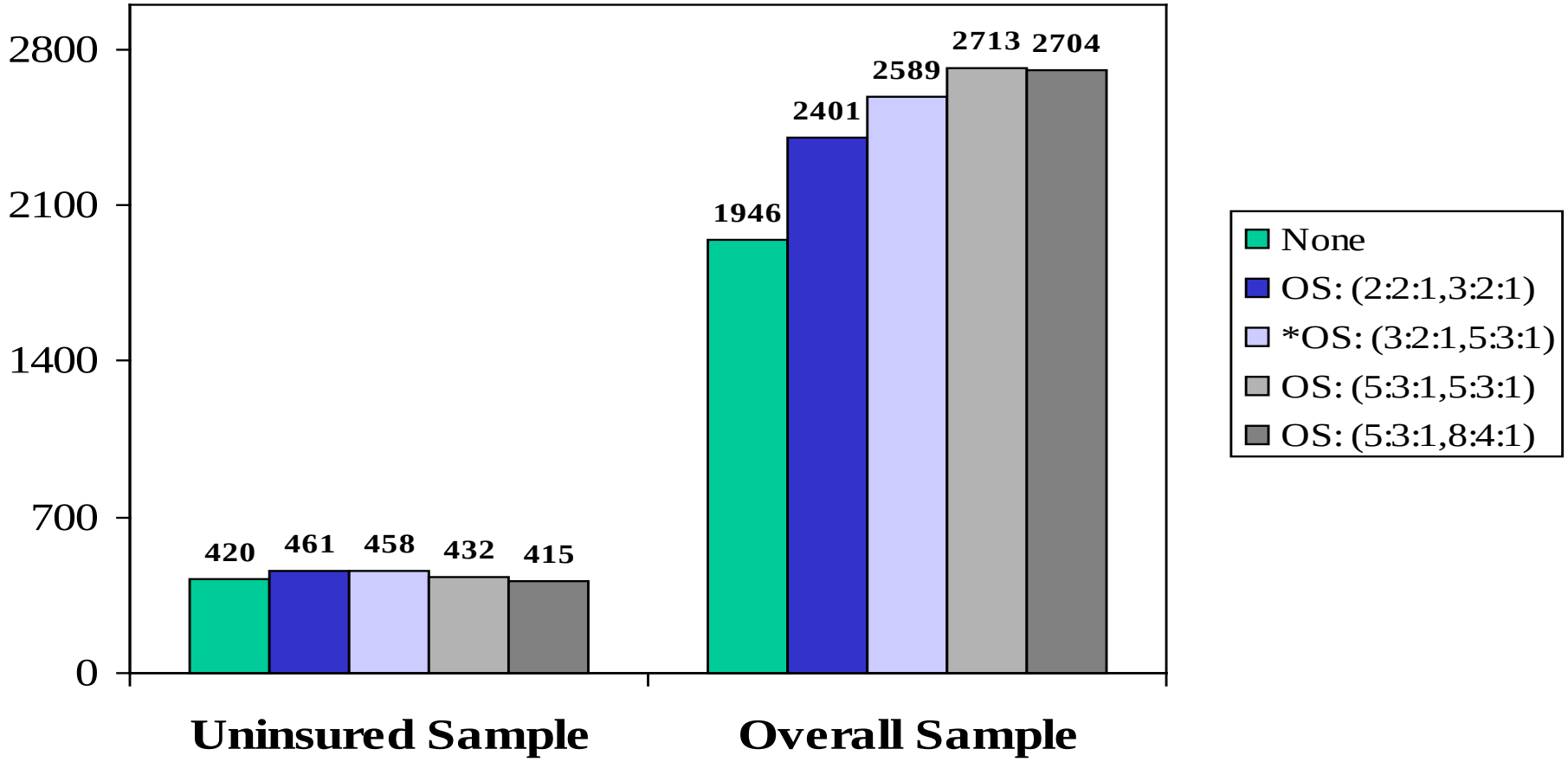
ICR

Urban Institute

Average Design Effects



Simulation of effective sample sizes under various oversampling rules taking into consideration design effects



ICR

Urban Institute

Conclusions and Next Steps

- Oversampling using exchange level information worked well; however, using a higher oversampling rate for the screener sample may not have been the best strategy
- Exchanges still cluster enough to use auxiliary information
- Caveat: Lots of assumptions in these estimates
- Guidance for the next round of this survey: Consider increasing (slightly) the oversampling rate for the main sample and decreasing (slightly) the rate for the screener sample

ICR

Urban Institute

Thank You

The survey was funded by the Blue Cross Blue Shield Foundation of Massachusetts, The Commonwealth Fund, and the Robert Wood Johnson Foundation.

The analysis of the survey design was funded by the Urban Institute's Statistical Methods Group.

ICR

Urban Institute