

Improving Coverage of an Address-Based Sampling Frame for the National Children's Study, Los Angeles County

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Disclosures

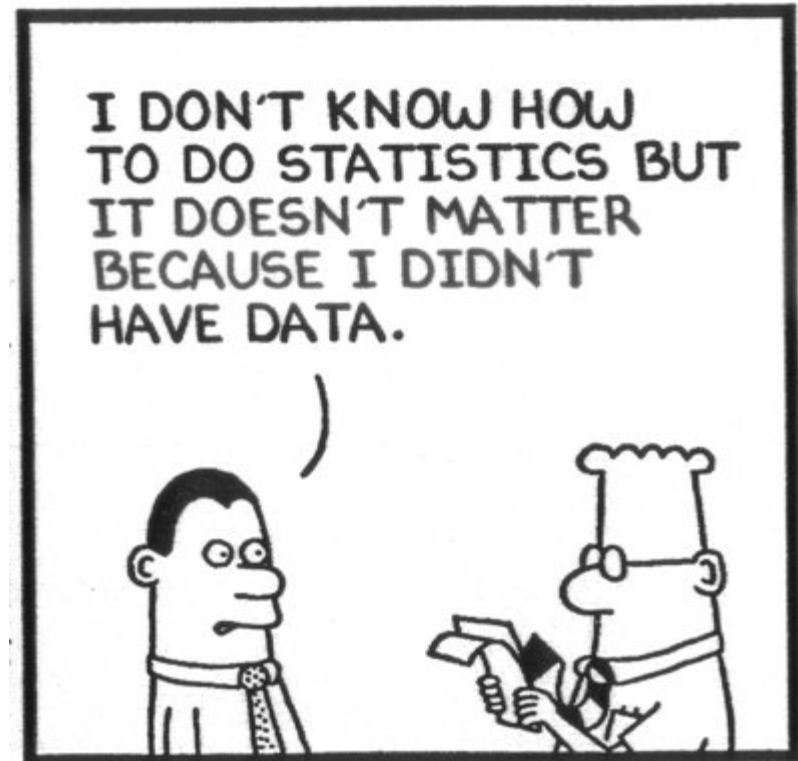
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- The views expressed in this presentation are the responsibility of the authors and do not necessarily represent the position of the National Children's Study, the National Institutes of Health or the Department of Health and Human Services.
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Overview

- National Children's Study, Los Angeles County (NCS-LA)
- Introduction to Address Based Sampling (ABS)
- Coverage
- Check for Housing Units Missed (CHUM)
- Results of CHUM
- Summary

Disclaimer

- I am not a statistician!



National Children's Study, Los Angeles County

- Multi-year research study
- Examine the effects of environmental influences on the health and development of children across the United States, following them from before birth until age 21
- Interviews by phone and in-person, biospecimen and environment sample collection
- LA County — one of 40 total Pilot sites (Vanguard)
- Evaluate the feasibility, acceptability, and cost of recruitment strategies, as well as Study procedures and outcome assessments

Address Based Sampling (ABS)

- The ABS frame originates from the USPS Computerized Delivery Sequence file (CDS)
- Contains all types of USPS delivery points. Street addresses, PO Boxes, simplified addresses, drop points
- ABS is often an alternative to Field Enumeration
- What do we mean by household coverage?
 - How well the address frame represents the household population
- Previous research has shown ABS coverage to be 85% or greater (nationally)
 - Better in urban areas

ABS Coverage

- Possible reasons for undercoverage:
 - PO Boxes and other non-locatable addresses
 - New construction or demolition
 - Geocoding error
- How do we improve coverage?
 - Past methods attempted to “enumerate the frame”; locate dwelling units that may have been excluded from the ABS frame.
 - RTI developed the Check for Housing Units Missed (CHUM) procedure (McMichael et.al., 2008)

Check for Housing Units Missed (CHUM)

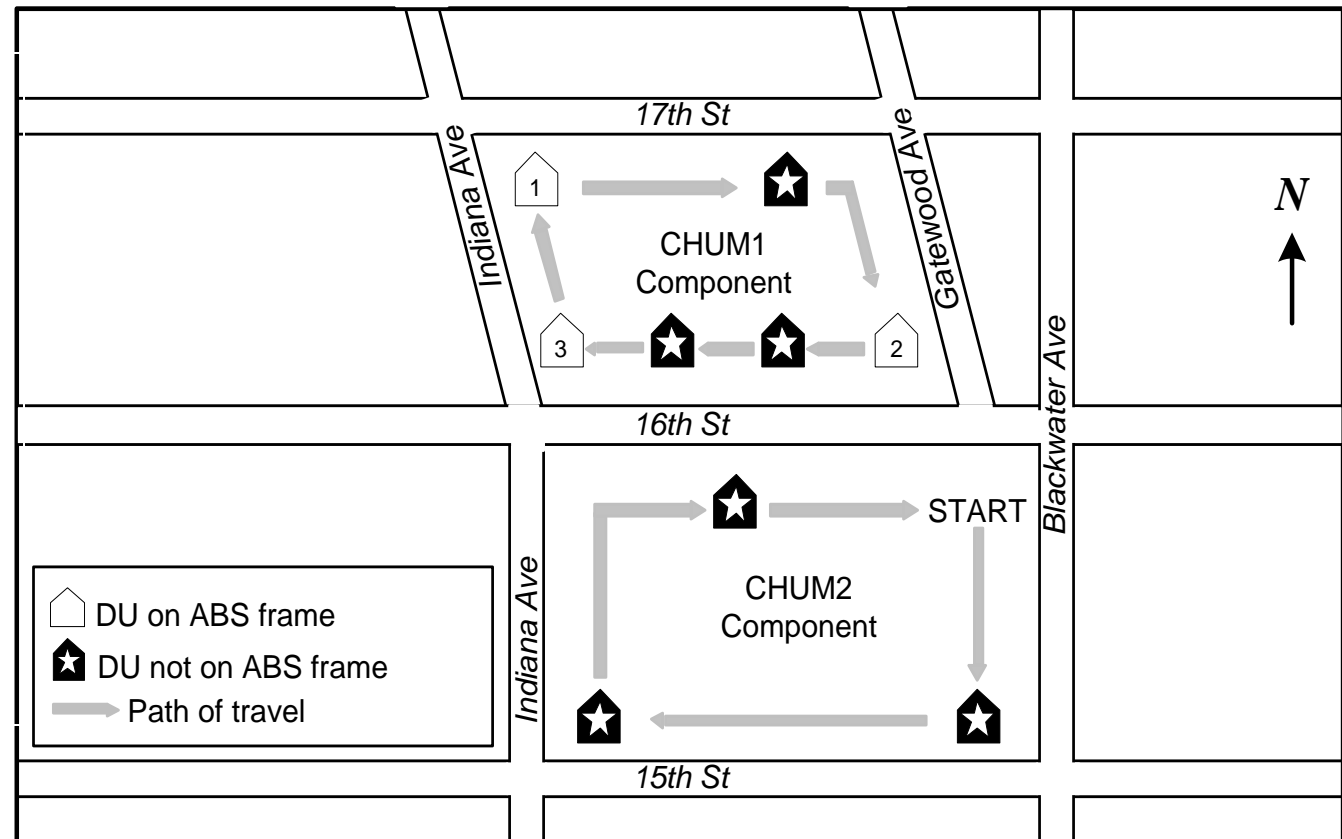
- CHUM procedure is a series of field protocols used to systematically identify dwelling units missing from the ABS frame with known probability
- Similar to past methods used in field enumeration
 - Relies on consistent protocol
 - Establish a Path of Travel

Check for Housing Units Missed (CHUM)

Two components:

1. Check for missed units

2. Check for missed blocks



Check for Housing Units Missed (CHUM)

Consists of two components:

1. Check for missed units

- Is the primary step for identifying missed units
- Does most of the work

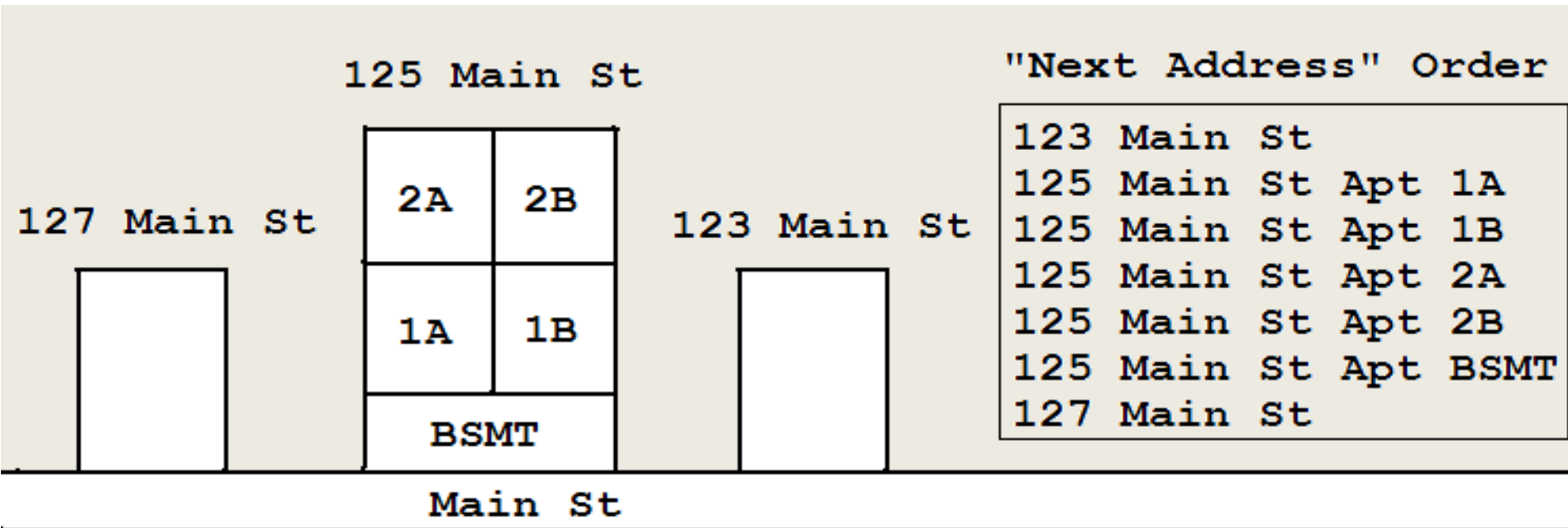
2. Check for missed blocks

- Randomly selected block within segment
- Safety measure to ensure coverage within segment

Check for Housing Units Missed (CHUM)

Special Situations

- Apartments (CHUM can ensure no units have been missed)
- Other less common situations



Building in Quality Control

Component 1 – Check for missed units

- Randomly chose selected segments for use in component 1 of the CHUM procedure: checking for missed housing units
- Assigned segments to staff
- **Included seeded address as a quality control measure**

Component 2 – Check for missed blocks

- Selected segments for use in component 2: checking for missed blocks
- Assigned segments to staff

Results of CHUM

CHUM Quality Checks

	CHUM Address Sample	Added Addresses	Seeded Addresses	Seeds Found	
				#	%
Total	998	175	53	-	-
CHUM 1	939	173	53	50	94.3
CHUM 2	59	2	0	-	-

- Additional addresses found may be due to geocoding error

Summary

- CHUM requires proper staff, thorough training, adequate support, and monitoring
- Cost, time, staffing, geographic location are all factors to be considered
- In combination, CHUM 1 and CHUM 2 gives every address missing from the ABS frame a chance of coming into the sample
- If CHUM procedures are executed correctly, every missed address in population will have a known probability of selection

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