Methods to Answer Research Questions

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Introduction

Why are data and research important?
Help accomplish the ultimate goal:
ENDING HOMELESSNESS

What do we mean by research methods?
The use of scientific methods to investigate individuals, society, and social processes
Research Cycle

Data Analyses/Reporting  
Research Questions  
Sample/Data Collection
This Presentation includes

- Issues around data quality
- Different data collection methods
- Coverage estimations
- Data analyses and reporting
Garbage In – Garbage Out

Important issues around data quality

- Data collection
- Data entry
- Data checking
- Validating data
Data Collection Methods

HMIS is one method of collecting information on homeless people

Point in time data collection methods
- Surveys: on either all or a sample
- Census: counts, tries to get all

HMIS: longitudinal data
Difference between **Point in Time** and **Longitudinal Data**

**Example: Guests in a 10 bed program over 10 days**

- **Bed 1**: 10 people (Day 1)
- **Bed 2**: 5 people (Day 2, Day 3)
- **Bed 3**: 5 people (Day 4, Day 5, Day 6, Day 7, Day 8, Day 9, Day 10)
- **Bed 4**: 30% short term, 50% long term
- **Bed 5**: 20% short term, 30% long term, 50% long term
- **Bed 6**: 25% short term, 25% long term
- **Bed 7**: 25% short term, 25% long term
- **Bed 8**: 25% short term, 25% long term
- **Bed 9**: 25% short term, 25% long term
- **Bed 10**: 25% short term, 25% long term

*National HMIS Conference*
*Sponsored by U.S. Department of Housing & Urban Development*
Representativeness

What is the universe:

- All residential homeless assistance programs in your CoC?
- All homeless assistance programs, residential or not, in your CoC?
- All agencies with at least one homeless assistance program in your CoC?
- All homeless people within your CoC
- Same options but statewide

What is included in your HMIS data, and what is left out?

- People who don’t use shelters could be missing
- People who use particular types of shelters (e.g. DV; 12-hour; missions) could be missing
Coverage/Extrapolation

When there isn’t 100% coverage …

- What proportions of beds/units/people are missing?
- How does the missing information impact bias?
  - Is what you have similar to what you don’t have?
- How can the coverage level be estimated?
  - Using turnover rates
  - Using number of beds
Coverage Calculation Example based on turnover rates

<table>
<thead>
<tr>
<th>Total CoC Beds</th>
<th>Turnover Rate</th>
<th>Total Persons Served in CoC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total HMIS Records</td>
<td>Total CoC Persons Served</td>
<td>Coverage Rate</td>
</tr>
</tbody>
</table>

For example, if the individual shelter system has 4,000 beds across all emergency shelter programs, using a turnover rate of 5 (that is, on average, 5 people are served by each shelter bed over the course of a year), the shelter system would serve 20,000 people over the year. If there were 12,500 records on individual shelter users for that year, coverage would be 12,500/20,000 = 63%.
Coverage Calculation Example based on number of beds

# Beds in HMIS / Total # CoC Beds = Coverage Rate

For example, if the individual shelter system has 4,000 beds across all programs in your CoC, and your HMIS is being used for 2,600 of those beds, then coverage would be 2,600/4,000 or 65 percent.
To Increase Representativeness

- Focus on adding more programs to the HMIS
- Merging of different HMIS data bases
- Random sampling in large programs to obtain a representative sample
Example of Random Sampling in Large Programs

- For programs of 100+ guests: Nightly census and more detailed question of a random sample
- For reporting, the random sample needs to be weighted according to what it represents, e.g. nightly count data amount to 1000 served in a year, random sampling records amount to 200, so every random sampling record needs to be weighted by 5 (1000/200=5).
Data Analyses/Reporting

- **Descriptive presentations**
  - Demographic and other characteristics,
  - Income, service needs, use of services, service outcomes

- **Subgroup comparisons**
  - Comparison of the same information for women and men, younger and older, rural vs. city, time spent in shelter, etc.

- **Trends over time when data are available for several years**
  - Analyze any changes
Data Analyses/Reporting cont.

- Limitations of HMIS data
  - Data elements included in database
  - Representativeness

- Linkage with other state data sets to add further information

- Provider/consumer feedback to enhance validity of findings
Data Analysis Tools

- Statistical software packages
- Data analysts – see researcher/provider session
- Web tool
  http://www.csp.umb.edu/Massshelter
Conclusion and Implications

- HMIS data have great potential to inform policy and planning at program, CoC, or statewide levels
- Requires full participation of programs, and consistent data collection across programs
- It takes time to gather sufficient data for analyses and comparisons across different groups