An Evaluation of a Training Protocol Designed to Supplement the Coverage of an Address-Based Sampling Frame

Joe McMichael
Bonnie Shook-Sa
Allison McKamey
Stephanie Stolzenberg
Katherine Morton
Vince Iannacchione

2011 AAPOR Conference
Phoenix, AZ
May 14, 2011
Acknowledgement

This project is funded by the Substance Abuse and Mental Health Services Administration, Center for Behavioral Health Statistics and Quality, under Contract no. 283-2004-00022 and Project no. 0209009.

The views expressed in this presentation do not necessarily reflect the official policies of the Department of Health and Human Services; nor does mention of trade names, commercial practices, or organizations imply endorsement by the U.S. Government.

This presentation is sponsored by RTI International’s Statistics and Epidemiology Division.
Study Background

- The National Survey on Drug Use and Health (NSDUH) provides national, state and substate data on substance use and mental health in the civilian, noninstitutionalized population age 12 and older.
- Conducted by RTI under contract with SAMHSA.
- Data are collected on a quarterly basis each year.
- Approximately 700 Field Interviewers (FIs) staffed.
- Approximately 140,000 household screenings and 67,500 interviews completed annually.
In-person Frame Supplementation

Assumptions:
- National in-person survey
- Clustered design
- Maintaining trends is a priority
- Hybrid Frame (ABS & Field Enumeration)

Why frame supplementation?
- ABS frame undercovers household population
- Allows more segments to be placed into ABS
- Decrease costs without sacrificing coverage*
In-person Frame Supplementation

Frame supplementation is not new

- Check for Missed Units or Half-Open Interval (HOI)
- Check for Housing Units Missed (CHUM) and Waksberg approach

Largest difference between CHUM and HOI

- Responsibility Shift from Lister to Interviewer
Check for Housing Units Missed (CHUM)

- DU on ABS frame
- DU not on ABS frame
- Path of travel
Problems w/ Frame Supplementation

- Procedures not implemented correctly or at all by field staff
  - Lack of understanding, miscommunication
  - Not a priority. Importance not stressed?

- Additional costs…
  - Time in field
  - Training
  - Field support

- Operations Management
  - Hours of operation (time zones, nights and weekends)

- Sample Efficiency
  - Increased Design Effects from sub-sampling
Overcoming Problems

- Effective Training Methods and Materials
- Effective Monitoring
  - Seeding
  - Field visits
- Field Support
- Technology can help
Training Experiment - Goals

- Develop training materials and methods
- Test field staff implementation
- Understand the failures in implementation
- Develop a plan for improving methods
Training

Pre-training:
- Read handbook
- Complete iLearning course
  - Interactive CHUM introduction
  - Pre-training exercises

In-person training:
- 4 hours
- Presentation-style format
- Video examples
- In-class exercises
Training Experiment - Highlights

- Conducted in North Carolina:
- 20 Field Staff
- Scenarios created in the field by teams of statisticians
  - Followed experimental design
  - Scenarios not representative of the population
  - Purposively made difficult to identify weaknesses in implementation
- Field support provided by phone
Experimental Design Factors

- Scenario Difficulty Level
  - Did simple or complex instructions need to be followed?

- Scenario Type
  - Single Family, apartments, group quarters, mobile homes
  - Urban/Rural
  - # missing DUs to be found

- Field staff experience
  - Tenure as interviewer
  - Lister
  - Type of areas typically worked (urban/rural)
## Key Results

<table>
<thead>
<tr>
<th>Scenario Characteristics</th>
<th>Total N</th>
<th>Scenarios Correct N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>280</td>
<td>211</td>
<td>75.4</td>
</tr>
<tr>
<td>Easy</td>
<td>140</td>
<td>127</td>
<td>90.7</td>
</tr>
<tr>
<td>Difficult</td>
<td>140</td>
<td>84</td>
<td>60.0</td>
</tr>
<tr>
<td>Rural</td>
<td>52</td>
<td>38</td>
<td>73.1</td>
</tr>
<tr>
<td>Urban</td>
<td>228</td>
<td>173</td>
<td>75.9</td>
</tr>
<tr>
<td>Apartments</td>
<td>40</td>
<td>24</td>
<td>60.0</td>
</tr>
<tr>
<td>Non-Apartments</td>
<td>240</td>
<td>187</td>
<td>77.9</td>
</tr>
<tr>
<td>Day 1</td>
<td>130</td>
<td>93</td>
<td>71.5</td>
</tr>
<tr>
<td>Day 2</td>
<td>150</td>
<td>118</td>
<td>78.7</td>
</tr>
<tr>
<td>Scenario Characteristics</td>
<td>Total N</td>
<td>Scenarios Correct</td>
<td></td>
</tr>
<tr>
<td>--------------------------</td>
<td>---------</td>
<td>------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Overall %</td>
<td>Day 1 %</td>
</tr>
<tr>
<td>Overall</td>
<td>280</td>
<td>75.4</td>
<td>71.5</td>
</tr>
<tr>
<td>Easy</td>
<td>140</td>
<td>90.7</td>
<td>84.4</td>
</tr>
<tr>
<td>Difficult</td>
<td>140</td>
<td>60.0</td>
<td>59.1</td>
</tr>
<tr>
<td>Rural</td>
<td>52</td>
<td>73.1</td>
<td>65.0</td>
</tr>
<tr>
<td>Urban</td>
<td>228</td>
<td>75.9</td>
<td>72.7</td>
</tr>
<tr>
<td>Apartments</td>
<td>40</td>
<td>60.0</td>
<td>72.2</td>
</tr>
<tr>
<td>Non-Apartments</td>
<td>240</td>
<td>77.9</td>
<td>71.4</td>
</tr>
</tbody>
</table>
# Key Results – Field Staff Characteristics

<table>
<thead>
<tr>
<th>Field Staff Characteristics</th>
<th>Total N</th>
<th>Scenarios Correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>280</td>
<td>211</td>
</tr>
<tr>
<td>Years Experience</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Mo to 3 Yrs</td>
<td>84</td>
<td>68</td>
</tr>
<tr>
<td>3 Yrs to 6 Yrs</td>
<td>98</td>
<td>74</td>
</tr>
<tr>
<td>6 or More Yrs</td>
<td>98</td>
<td>69</td>
</tr>
<tr>
<td>NSDUH Lister</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>98</td>
<td>76</td>
</tr>
<tr>
<td>No</td>
<td>182</td>
<td>135</td>
</tr>
</tbody>
</table>

- Total: 280
- Scenarios Correct: 211
- %: 75.4

- Years Experience:
  - 6 Mo to 3 Yrs: 84, 68, 81.0%
  - 3 Yrs to 6 Yrs: 98, 74, 75.5%
  - 6 or More Yrs: 98, 69, 70.4%

- NSDUH Lister:
  - Yes: 98, 76, 77.6%
  - No: 182, 135, 74.2%
Conclusions

- Rules for apartments unnecessarily complicated.
- The day effect suggests field staff could quickly get better doing the CHUM.
- Experienced field staff had more trouble implementing the CHUM correctly.
Conclusions

- While we cannot directly extrapolate these results to the general population, we know that the “easy” cases are more typical of what is found in the field.
- We expect the Day 2, easy cases to be the norm for the NSDUH sample.
Contact

Joe McMichael
Research Statistician
RTI International
mcmichael@rti.org