Retention in a longitudinal outcome study: Modeling techniques and practical implications

Chair: Robert L. Stephens, Ph.D., M.P.H.
Macro International Inc.

Discussant: Paul E. Greenbaum, Ph.D.
University of South Florida

Symposium at the 21th Annual Research Conference—A System of Care for Children’s Mental Health: Expanding the Research Base
February 25, 2007

Background

- Retention of participants in multi-site, longitudinal studies is a critical concern
  - missing data impacts analyses of change over time
  - approaches to deal with missing data can have varying effects on validity and interpretation of findings

Purpose

- Examine a number of approaches to modeling retention in a longitudinal outcome study
- Provide insight into decisions about allocation of limited data collection resources to intervene when and where efforts will be maximally effective

National Evaluation of the Comprehensive Community Mental Health Services for Children and Their Families Program

<table>
<thead>
<tr>
<th>Core Study Components</th>
<th>Other Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cross-Sectional Descriptive Study</td>
<td>Comparison Studies in 8 pairs of sites. Service Experience Substudy of caregivers and providers</td>
</tr>
<tr>
<td>Child and Family Longitudinal Outcome Study</td>
<td>Treatment Effectiveness Studies in 6 sites with 3 different treatments, Practice-based Evidence Study</td>
</tr>
<tr>
<td>Service Experience Study</td>
<td>Provider Surveys on system of care attitudes and practices, evidence-based treatment, cultural competence, primary care and mental health</td>
</tr>
<tr>
<td>Services and Costs Study</td>
<td>Cultural Competence Studies</td>
</tr>
<tr>
<td>Systematic Care Assessment (tool &amp; Youth Coordinator Assessment added)</td>
<td>Further Ethnographies, Family Group Study, Conflict Resolution Study, etc.</td>
</tr>
<tr>
<td>Sustainability Study</td>
<td>Researcher Secondary Data Analyses</td>
</tr>
</tbody>
</table>

Data Collection Goals for the Longitudinal Outcome Study in Communities Funded 2002-2004

- Enrollment goals
  - Total of 276 children and their families
  - About 92 per year
  - Enrollment begins in Year 2 of grant and could end in Year 4 if annual goals are met

Longitudinal Outcome Study Data Collection Schedule

- Interviews conducted
  - At intake into services and 6, 12, 18, 24, 30 and 36 months following intake
  - Goal of 95% retention at each data collection point (with an overall minimum retention rate of 80% at 18 months)
  - Recommend later enrollment allow for follow up across at least four data collection points
  - Goal met with varying levels of success
Data Collection for the Longitudinal Outcome Study

- Design means some children enter study later than others
  - children recruited into study in Year 2 of grant followed up to 36 months
  - children recruited in Year 3 followed up to 30 months
  - children recruited in Year 4 followed up to 18 months
- So vast majority of children have uncensored follow up data through 18 months
  - but if children are recruited in later years follow up could be censored at 18 months

Two Types of Attrition

- Sites encouraged to continue follow up even if previous data collection waves are missed
- Permanent loss: Participant could not be located, withdrawn from study, deceased, etc.
  - No data from point of loss onward
- Temporary loss: Difficulty contacting, refused at one wave, etc.
  - Intermittent missing data points

Data for These Analyses

- Data collection currently ongoing in these communities
- Based on data submitted to Web-based data management system as of October 11th, 2007 data download
- Fundamental dependent variable for these analyses is a dichotomous representation of retention or attrition at each wave of data collection
- This will be manipulated in a variety of ways across the three papers