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

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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

Core Study Components	Other Studies
Cross-Sectional Descriptive Study	Comparison Studies in 5 pairs of sites, Service Experience Substudy of caregivers and providers
Child and Family Longitudinal Outcome Study	Treatment Effectiveness Studies in 6 sites with 3 different treatments, Practice-based Evidence Study
Service Experience Study	Provider Surveys on system of care attitudes and practices, evidence-based treatment, cultural competence, primary care and mental health
Services and Costs Study	Cultural Competence Studies
System-of-Care Assessment (Youth & Youth Coordinator Assessment added)	Partner Ethnographies, Family Driven Study, Conflict Resolution Study, etc.
Sustainability Study	Researcher Secondary Data Analyses

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 censured 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