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State of the Science
IMPLEMENTATION OF EFFECTIVE SYSTEMS OF CARE

Conceptualization and Measurement of Systems of Care

Implications for Optimizing the Effectiveness of Systems of Care

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Relationship Between Conceptualization and Measurement:

- What Is It?
- What Should It Be?

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Traditional Research/Evaluation Model

- The "System of Care" is the independent variable;
- Should be static;
- Should be replicable;
- Should be easily measurable;
- Measures should be objective;

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Traditional Research/Evaluation Model
(Continued)

- Researchers/evaluators should be non-participants;
- Researchers/evaluators are the "experts" who determine how to study the system;
- Causal relationships are primarily linear.

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Results

- Should determine if it is "effective;"
- Should identify what it takes to make them work.

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Continuum of Research

From particularistic and specific to holistic and pattern-focused.

— Langhout, 2003

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Alternate Model

- Based on Research/Theory from Fields of Organizational Development, Systems Theory, and Complexity Theory
  - Effective systems are iterative, evolving, changing, dynamic, always emerging;
  - Frequent reflective processes, based on multiple sources of data and multiple perspectives, is essential;
  - Relationships/connections/integrative mechanisms between agents and components are critical;
  - Responsiveness to contextual issues is one key;

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Alternate Model
(Continued)

- Values, principles, culture, and goals are the key foundation;
- Causal relationships are primarily non-linear and complex;
- The "system" exists in the eye of the beholder;
- Key to understanding systems is relationships, recurring patterns, implicit as well as explicit rules.

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Implications for Research/Evaluation

- Longitudinal, holistic with a specific focus on inter-relationships, non-linear effects and "rich" points;
- Contextual and in-depth;
- Multi-method, multi-source;
- Participatory and collaborative;
- Action and change-oriented

A National Study to Assess the Status of System of Care Implementation

Presented by
**Paul E.Greenbaum,
Roger Boothroyd, and
Krista Kutash**

20th Annual Research Conference
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Tampa, Florida

USF UNIVERSITY OF SOUTH FLORIDA

Introduction

- RTC interested in understanding what is the state of systems of care (SOC) nationally

- Multiple factors believed to contribute to development and implementation of systems of care

Study Rationale

- No data available that describe the distribution and implementation of either particular factors or, more broadly, the overall level of integrated systems of care for children and adolescents in the United States.

- To address these issues, RTC has been developing a population-based survey of system-of-care implementation factors in US counties

Study Goals

- Assess the level of SOC implementation nationwide

- Understand the relationships between the various implementation factors

- Understand how various contextual factors (e.g., population size, level of poverty) are related to overall SOC implementation and the individual factors

Steps in Designing the Study

- Theoretical model: Conceptual definitions of the constructs and how they are related

- Operationalizing the constructs into observables and developing indicators to measure the constructs

- Developing a research design to empirically assess the construct

Theoretical Model

- Certain factors that, when put into practice within communities, contribute to establishing well-functioning systems of care for children with serious emotional disturbances and their families and much of the power of these factors comes from the way in which they "come together and are interconnected to fulfill some purpose" (Plsek, 2001, p.309, Institute of Medicine, (Eds.) *Crossing the quality chasm: A new health system for the 21st century*).

Identifying the factors

- Reviewing research and theory on systems of care

- Tapping the experiences of the RTC in conducting research within systems of care

- Incorporating findings from a survey of state children's mental health directors and concept mapping with a panel of experts in systems of care

- Obtaining feedback on the initial model from parent and professional leaders in children's mental health

Enumeration of the Factors

1. Family Choice and Voice
2. Individualized, Comprehensive and Culturally Competent Treatment
3. Outreach and Access to Care
4. Transformational Leadership
5. Theory of Change
6. Implementation Plan
7. Local Population of Concern
8. Interagency and Cross-Sector Collaboration
9. Values and Principles
10. Comprehensive Financing Plan
11. Skilled Provider Network
12. Performance Measurement System
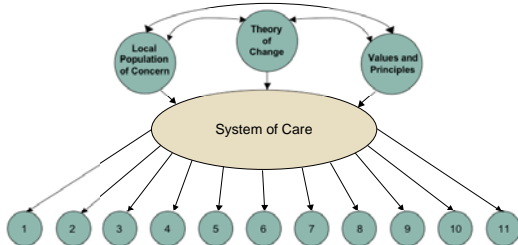13. Provider Accountability
14. Management and Governance

Conceptual Models of How Interconnected

- Single factor model:
  - All factors are of equal importance and indicators of the SOC

- Two-stage MIMIC model:
  - Three factors are emergent, 11 factors are indicators of the SOC
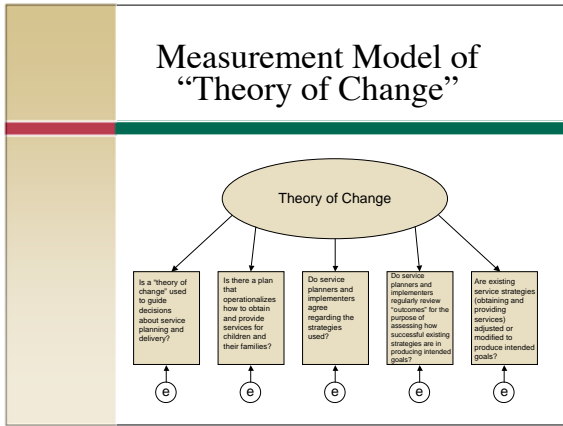
Single Factor Model
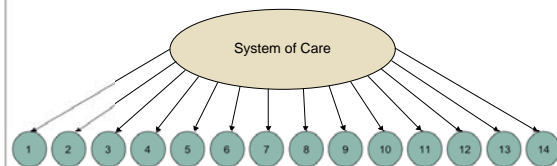
Two-stage MIMIC model

Developing the Measurement Model

- Each factor needs to be operationalized with multiple indicators, so that a latent variable representing the construct can be created

- Latent variables are error-free measures of the construct

Measurement Model of "Theory of Change"

Developing the Measurement Model

- In-house experts select indicators of each factor
  - Reviewed and revised by Director and Study PIs
- Expert panel review
  - Reviewed and revised based on expert panel scores and comments
- Cognitive interviewing
  - Revised
- Pilot testing the Qs.
  - Revised
- Final review by family members
  - Final revision

Table 1: Pilot Interview Cronbach's Alphas for the Implementation Factors (*N* = 38)

Factor	Cronbach _	Number of Items
Transformational Leadership	.837	5
Theory of Change	.840	5
Implementation Plan	.727	5
Family Choice & Voice	.769	5
Local Population of Concern	.620	3
Interagency Collaboration	.876	5
Individualized ,Comp , & Culturally Competent	.866	6
Values & Principals	.605	5
Financing	.862	5
Outreach/Pathways	.777	3
Skilled Provider Network	.692	5
Performance Measurement	.778	5
Provider Accountability	.700	4
Management & Governance	.819	4
General System Performance	.817	6
Total	.769	71

Study Design

- Randomly sample US counties using disproportionate stratified probability sampling
- Multilevel survey of implementation factors
- Within each county, sample multiple informants from different children's service sectors and family organizations

Table 2. Sampling Frame and Projected Sample Cell Sizes for U. S. Counties Stratified by Population Size and Poverty

Population Size	Participants Per County	< Median Poverty		> Median Poverty		Total	
1,000,000+	15	17	[9]	17	[9]	34	[18]
500,000 -999,999	13	46	[15]	24	[14]	70	[29]
250,000 -499,999	12	101	[19]	26	[19]	127	[38]
100,00 0-249,999	8	195	[26]	85	[26]	280	[52]
50,000 -99,999	5	224	[14]	153	[15]	377	[29]
25,000 -49,999	5	308	[15]	216	[15]	524	[3 0]
<25,000	5	696	[14]	1004	[15]	1670	[29]
Total	1959	1547	[112]	1535	[113]	3082	[225]

Note. "Median Poverty" equals 14.15% of individuals living in the county are living below the poverty level. Numbers in square brackets represent the number of counties to be sampled.

Conceptualizing and Measuring Systems of Care

Case Studies of System Implementation
Sharon Hodges, PhD
State of the Science
March 6, 2007

Research Team
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Research Issues in Children's Mental Health

- Research in a diffused service setting and around implementation of complex reform initiatives
  - How do we understand the whole of a system that is made of so many individual components parts?
  - How do we understand the individual components of the system when we cannot isolate them from their multiple influences and interconnections?

Research Challenge

- To do rigorous research in the absence of the framework that is provided by well-defined linear relationships

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Case Studies of System Implementation

- To identify strategies that local communities undertake in implementing community-based systems of care

- To understand how factors affecting system implementation contribute to the development of local systems of care

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Research Questions

- What structures and processes produce systems of care?

- Are there certain conditions that trigger successful system implementation?

- Are there fundamental mechanisms for change?

- What is the relationship among factors that affect system implementation?

Assumptions of this Study

- Meaning is situated in context

- Context influences how people think, act, and interact

- Meaning is created through shared understanding & negotiation

- Meaning is created as individuals interact with one another and participate in shared activities

- What people know & believe to be true about the world around them develops as people interact

Case Study Design

- Multi-case embedded case study design
  - ◆ Phenomena in real-life context
  - ◆ Processes that evolve over time
  - ◆ Not under control of researcher

- Compare how communities conceptualize, operationalize, implement systems of care

Site Selection

Criteria for Participating Sites:
- Expressed commitment to systems-of-care values and principles
- Identified need for local population of children with serious emotional disturbance
- Goals for identified population of children with serious emotional disturbance that are consistent with systems-of-care values and principles
- Outcome information that demonstrates progress toward these goals
- Ability to reflect on key transitions in system development
- Sustainability over time

Data Collection

- Document Review
- Local Factor Identification and Definition
- Direct Observation
- Semi-Structured Key Informant Interviews
- Documented Aggregate Outcome Data

Research Approach: "Rapid Ethnographic" Methods

- Data collection lasting 1 week – several months
- Limited time on site
- Multi-method inquiry
- Strong reliance on qualitative methods such as group and individual interviews, observation, document review
- Emphasis on qualitative, but does not preclude quantitative data collection and analysis
- Team-based data collection & analysis in which intensive team approach substitutes for longer term site-based data collection & analysis by single individual

When to Use "Rapid" Ethnography

Rapid ethnographic approaches are most appropriate when:
- The research setting is complex and requires detailed understanding of local context
- There is a need to understand group behavior, practice, belief
- There is a need to understand multiple local perspectives
- The extended presence of researchers would be burdensome to participating sites
- Resource constraints prevent long-term field-based data collection
- A "rapid" process is necessary for real-time application and utility of results

Iterative Data Collection & Analysis

- Data collection and analysis are ongoing rather than discrete events, each process continuously informing the other

- Additional data collection (e.g. observations, interviews, document reviews) results from questions that arise as research progresses

- Iterative process allows "quick" transition from preliminary insight to detailed understanding

Triangulation of Researchers, Data, Methods

- Multiple data sources are necessary to produce comprehensive assessment
- Purposive sampling is used to access multiple perspectives
- Repetition of questions, discussions, observations is a strategy used to seek information from multiple perspectives
- Meaningful patterns and/or awareness of their absence can be identified
- Multi-disciplinary team composition supports diversity of perception and understanding in data collection & analysis

Intensive Team Interaction

- Rapid assessment involves at least two researchers
- Intensive teamwork is key to triangulating data
- Intensive advance teamwork prepares researchers for field-based data collection
- Intensive field-based teamwork ensures opportunities for on-site data collection are used to greatest advantage

Iterative Process

Ensuring Meaningful Results

- Rapid does not mean rushed or sloppy.
- Methodological rigor is required even if timeframe is compressed.
- Collaboration with people in field ensures that research questions are relevant, data collection strategies are appropriate and reasonable, and provides an ongoing validity check.

Strategies to Meet the Challenge

- Explore and advance methods that integrate scientific rigor with real world experience
- Develop partnerships that will help us understand and intervene in the multi-layered behavioral health system
- Bring multiple perspectives into our knowledge base