Chapter One

Implementing Systems of Care

A Model for Implementing Effective Systems of Care

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Introduction

Since the mid 1980s, the main policy response of the mental health field to meeting the needs of children with serious mental health challenges and their families has been through the development of community-based systems of care (Holden, Friedman, & Santiago, 2001; Stroul, 1996; Stroul & Friedman, 1986). Such systems of care are very complex and challenging to develop and implement. There are a number of indications that while there has been considerable progress in the field, there have also been significant problems in implementing effective systems of care (Brannan, Baughman, Reed, & Katz-Leavy, 2002; Center for Mental Health Services, 2003; Friedman, 2004; Friedman, Fixsen, & Paulson, 2004; Rast & Bruns, 2003; Vinson, Brannan, Baughman, Wilce & Gawron, 2001; Walker & Schutte, 2003). Such implementation problems led to the release of a priority statement by the National Institute of Disability and Rehabilitation Research (NIDRR) for the establishment of a Center to study the "development and implementation" of systems of care (NIDRR, 2004, p. 32,797).

In response to this priority statement by NIDRR, and the concern about implementation of effective systems of care, the Research and Training Center for Children's Mental Health of the University of South Florida developed a model of factors to guide its research that it believes contribute to effective systems. The Center's model was developed based on:

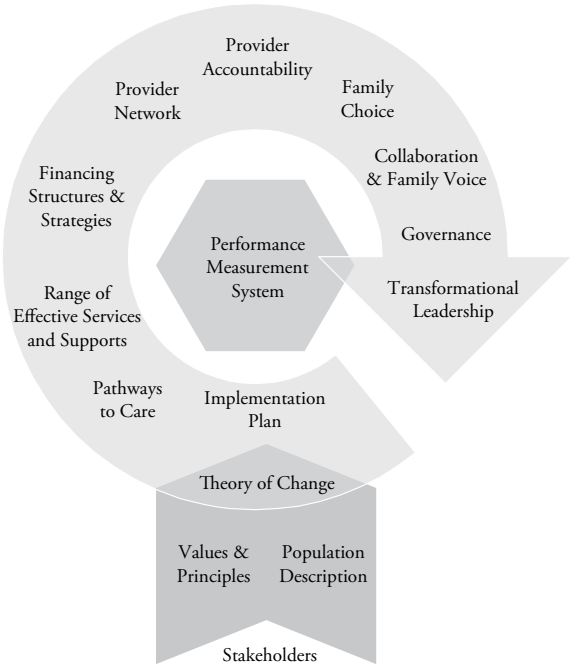
- A review of the research and theory on systems of care for children with serious mental health challenges and their families (e.g., Friedman et al., 2004; Holden, De Carolis, & Huff, 2002; Meridian Consulting Services, Inc., 1999; Pires, 2003; Pumariega, Winters, & Huffine, 2003; Rosenblatt & Woodbridge, 2003; Stroul & Friedman, 1996);
- A review of research and theory in related fields, such as comprehensive community initiatives (Gray, Duran & Segal, 1997; Kubisch, Auspos, Brown, Chaskin, Fulbright-Anderson et al., 2002); prevention (Bond & Hauf, 2004; Nation, Crusto, Wandersman, Kumpfer, Seybolt, et al. 2003; Wandersman & Florin, 2003); substance abuse (Chinman, Imm, Wandersman, 2004; Wandersman, Imm, Chinman, & Kaftarian, 2000), and program and organizational effectiveness (Collins, 2001; Greenberg, 2001);
- The experiences of the Center in conducting research within systems of care, and providing consultation and technical assistance to leaders of systems (e.g., Friedman, Fixsen, & Paulson, 2004; Friedman & Hernandez, 2002; Hernandez, Gomez, Lipien, Greenbaum, Armstrong, et al., 2001; & Hernandez & Hodges, 2003);
- Feedback on a preliminary draft of the model from the Center's Board of Advisors, state directors of children's mental health, and other parent and professional leaders in children's mental health.

Overview of the Model

The Center's model includes 14 implementation factors (see Figure 1). The model builds on, and is consistent with, the original system of care monograph by Stroul and Friedman (1986), but places a greater emphasis on important processes of system development. The model proposes that while none of the 14 factors may be sufficient by itself, and most of them may not be absolutely necessary, each one can and does contribute to the implementation of effective systems of care.

The model builds on systems theory, which emphasizes that systems are composed of interrelated components that interact to affect each other in such a way that the whole is greater than the sum of its parts (McBubbin & Cohen, 1999; Phelan, 1999; Plsek, 2001; von Bertalanffy, 1968). This concept of

Figure 1
Factors Contributing to Implementation of Effective Systems of Care



interdependence and interlinking of various components is essential to systems theory. As Plsek indicates, "the real power lies in the way the parts come together and are interconnected to fulfill some purpose" (Plsek, 2001, p. 309).

Systems theory emphasizes not only inputs and outputs but also dynamic processes, feedback loops, stocks and flows, and time delays. From the Center's perspective, systems of care are "complex adaptive systems," which Plsek defines as "a collection of individual agents that have the freedom to act in ways that are not always predictable and whose actions are interconnected such that one agent's actions changes the context for other agents" (Plsek, 2001, p. 313). The challenge therefore, for system of care designers and implementers as it is for designers of other complex systems (Senge, 1990), is to move beyond traditional linear ways of conceptualizing problems and instead to highlight the complexity and inter-relatedness of factors, in which functioning in any one area is affected by and in turn affects functioning in other areas and in which short-term consequences of actions and longer-term consequences may often differ.

The Center model, in addition to emphasizing the importance of a systemic and holistic perspective, also emphasizes the importance of community and cultural context. The most important issues are likely not the implementation of each factor but rather how the pieces of the system fit together, and how they match up with the cultural and community context in which they are to be applied.

Factors in the Center Model

The 14 inter-related factors in the Center model are listed and briefly described in Table 1. Within this description of 14 factors, there are several that are discussed here; they are considered to represent basic foundational pieces to implementing an effective system.

Table 1
Implementation Factors

Pathways to Care	Outreach mechanisms and clear pathways that facilitate access into and flow through effective care for all individuals in the identified population of concern. A system cannot be effective unless it provides access to effective care. This is an especially important issue for children from racial and ethnic minority groups where access to care has historically been less effective than it has for other groups.
Range of Effective Services and Supports	A broad and comprehensive range of effective services and supports, including care coordination, to support the development of individualized, culturally competent, and comprehensive treatment plans that assist the child and the entire family.
Population Description	A population of concern that is clearly defined and well-understood within the local context. For a system to be effective, there must be adequate information on the needs, strengths, and overall characteristics of the population of concern, including their culture and help-seeking patterns, and the organization and functioning of the entire system.
Values and Principles	A statement of values and principles, consistent with system of care values and principles, that has been developed through an inclusive, participatory process, and serves as a foundation for system development and evaluation efforts.
Theory of Change	A clear and widely held local theory of change that is developed through a participatory process and describes the population of concern, goals of the system, and mechanisms through which the community expects to be able to achieve the goals. Such a theory of change, often presented visually in the form of a logic model, becomes a guiding document for system development efforts.
Implementation Plan	An implementation plan describes the steps that will be taken to achieve the desired goals and includes timelines and a listing of individuals responsible for the actions to be taken. Such a plan is regularly updated and recognizes the complexity and challenge of taking statements of intended action, and actually implementing them as intended.
Performance Measurement	A performance measurement system that includes both process and outcome measures, is based on the theory of change, and provides ongoing information about the performance of the system which can be used to improve the system.
Financing Structures and Strategies	A comprehensive financing plan that is consistent with the goals of the system, the system values and principles, and the needs of the population of concern. Such a plan should identify expenditures across major child serving systems, utilize varied sources of funding, promote fiscal flexibility and incentives, maximize federal entitlements, and re-direct spending from restrictive placements to home and community-based services.
Provider Network	A provider network that is diverse in background, culturally competent, skilled in providing services and supports consistent with the values and principles promoted by the system, and of sufficient capacity to provide family choice.
Provider Accountability	An accountability system at the provider level in which the use of particular providers and the provision of funding to them is clearly tied to their performance so that incentives are created for high quality and family-responsive performance.
Family Choice	Mechanisms to ensure that families are provided with choice of services and providers in collaboration with their treatment team.
Collaboration and Family Voice	Mechanisms to promote collaboration between key service sectors and between families and professionals at all levels of the system.
Governance	Governance mechanisms that maintain the focus on the system values, goals, and theory of change, and the use of systematic data and stakeholder inputs to continuously strengthen the system, and that provide for clear and efficient decision-making about the system.
Transformational Leadership	Leadership that appreciates the inter-relatedness of each of implementation factors and their functions within a system and recognizes the importance of community-specific contextual factors. To be transformational, such leadership must be able to tie together all of the processes and functions into an integrated system and must be able to create and carry partnerships and collaborations to a high level.

The first part of the foundation is a statement of values and principles, developed in a participatory manner with parents and professionals and youth working together, and with representatives from various service sectors. Such a statement of values and principles need not be identical to those presented in the original monograph in which the framework is presented for systems of care (Stroul & Friedman, 1986), but they must be consistent with those presented in the monograph. Each community may wish to define cultural competence or individualized care slightly differently, for example, but to have a system of care a community must demonstrate initially through its statement of values and principles and subsequently through its actions that it is committed to cultural competence and individualized care.

The next foundational piece is a clear statement of the population of concern for the system of care—what is the group of children and families that the system seeks to serve and support? The statement should be accompanied by descriptive information on the needs and strengths of the population, and on the organization and functioning of the existing system. The description of the population must have a special emphasis on the racial, ethnic, and socio-economic make-up of the population of concern, while also looking at developmental stages and gender specific issues.

The next important process is the development of a clear local theory of change (Hernandez, 2000; Hernandez & Hodges, 2003) that includes the description of the population of concern, the short-term and long-term goals of the system, and the mechanisms by which the community expects to be able to achieve the goals. Such a theory of change, often presented visually in the form of a logic model, helps community stakeholders be explicit about what they are trying to accomplish and what they think it will take to accomplish their goals, and becomes a guiding document for system development efforts.

Next is the development of an implementation plan. Increasingly there is recognition that good ideas and good intentions are not sufficient by themselves, but rather require careful attention to implementation (Fixsen, Naaom, Blase, Friedman, & Wallace, 2005). Fixsen et al., present a general conceptual model of implementation that emphasizes a number of components that operate in an integrated and compensatory manner in relation to each other. An implementation plan has to recognize that implementation goes through multiple stages, requires service and resource development, and includes critical processes such as careful staff selection, training, coaching, and performance feedback.

Another very central process is the development of a performance measurement system. Such a system should be based on the theory of change and implementation plan, and must provide ongoing information about the performance of the system that is practical and can be used to continuously improve the system (Bickman & Noser, 1999; Friedman, 2003; Kubisch et al., 2002; Leff & Woocher, 1998; & Wandersman & Florin, 2003). In talking about effective organizations, Collins (2001) talks about the necessity of having information systems that "confront the brutal facts" (p. 13) of present performance, and do this in such a way as to promote continuous improvement. Wandersman and colleagues (2000) refer to this as a results-based accountability system. Such a decision-support system is part of a data-based culture in a community and essential to efforts to implement and then continually improve a system.

Present Status of the Model

The Center's model of implementation of an effective system of care is currently being tested in a series of research projects being conducted by the Center. It is anticipated that as results from these projects, and results from other research around the country, come in, the model will be re-visited and modified where needed. At the same time as the model is being tested through research, the Center is disseminating it and welcomes input on its helpfulness from stakeholders around the country.

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Case Studies of System Implementation

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Introduction

This paper describes a newly funded study of system of care implementation that is part of the research agenda of the University of South Florida's Research and Training Center on Children's Mental Health. The systems of care concept has been described as an explicit organizational philosophy that is intended to create and provide access to an expanded and coordinated array of community-based services and supports for children with serious emotional disturbance and their families (Stroul, 1993; Stroul & Friedman, 1986). Although systems of care have been found to positively affect the structure, organization and availability of services (Hoagwood, Burns, Kiser, Ringeisen, & Schoenwald, 2001; Rosenblatt, 1998; Stroul, 1993), the implementation of systems of care is significantly challenged by a lack of understanding regarding the factors that contribute to system development and how these factors interact to establish well-functioning systems (Hernandez & Hodges, 2003a). The purpose of this study is to identify strategies that local communities undertake in implementing community-based systems of care and to understand how factors affecting system implementation contribute to the development of local systems of care.

The research questions guiding this study are: (1) What structures and processes produce systems of care? (2) Are there certain conditions that trigger successful system implementation? (3) Are there fundamental mechanisms for change? (4) What is the relationship among factors that affect system implementation?

Study Design

The design for this study is based on the Center framework for systems-of-care implementation, which hypothesizes that when certain systems-of-care implementation factors are active within a community, then children with serious emotional disturbance and their families will have improved access to and availability of mental health and related services and supports. This study takes a holistic approach to understanding how systems of care are implemented in local communities. Rather than conceptualizing qualitative and quantitative methods as dichotomous, this study blends methods from both traditions in order to carry out a holistic and pattern-focused investigation (Langhout, 2003). This investigation will use a multiple-case embedded case study design (Yin, 2003) to compare how communities with established systems of care operationalize and implement the system implementation factors with those communities that demonstrate commitment to systems-of-care values and principles but have not yet developed a system of care.

Case study approaches. For the purpose of this investigation, a case study is an exploration of a bounded system over time through detailed and in-depth data collection efforts that make use of multiple sources of information (Cresswell, 1998, 2003; Stake, 1995; Yin, 2003). Case studies are particularly useful when phenomena are investigated within their real-life context and when the boundaries between phenomena and context are not clearly evident (Yin, 2003). They can be used to investigate phenomena that are greatly influenced by the overall socio-cultural-geographical context, and in studies that seek to provide information about important processes as they evolve over time, in addition to describing structures and outcomes. Further, case studies are useful for studying the effectiveness of social policies that are not under control of the researcher and do not lend themselves to experimental study.

Site Selection

Replication logic. The design of this explanatory case study is based on replication logic for which the goal is analytic generalization to a theory, rather than statistical generalization to a population (see Table 1). Replication logic is analogous to designs used in multiple experiments, in that effort is made to replicate findings by investigating additional cases (Yin, 2003). Conclusions are based on whether the findings support the theoretical propositions set forth in the study: in this case, that system implementation factors facilitate the establishment of a system of care for a specific population of children with serious emotional disturbance and their families. In order to test the theoretical framework of the Center using replication logic, participating sites will be selected for their perceived ability to predict both similar and contrasted results across sites. Participating sites must be carefully selected on the expectation that they predict either similar results across cases, known as literal replication, or results that are contrasting for predictable reasons, known as theoretical replication (Yin, 2003). In this study, similar findings regarding system implementation factors will be sought by comparing sites with an active theory of change for their local system of care with one another and sites that do not have an active theory of change with one another; this will be considered evidence of literal replication. Contrasting findings regarding system implementation factors will be sought by comparing sites with an active theory of change for their local systems-of-care sites with sites identified as not yet having an active theory of change; this will be evidence of theoretical replication. Findings will only be considered robust and generalizable with evidence of replication.

Table 1
Replication Logic for Testing Theoretical Framework

Pilot for Explanatory Case Studies	PSOC Site	ESOC Site
	Case 1	Case 2
Phase I: Initial Replication Strategy for Explanatory Case Studies	PSOC Site	ESOC Site
	↓ Literal Replication in which similar results are expected ↓ **within** PSOC and **within** ESOC sites	
Theoretical Replication → in which contrasting results are expected between ESOC and PSOC sites	Case 3	Case 4
	Case 5	Case 6
Phase II: Extended Replication Strategy for Explanatory Case Studies	PSOC Sites	ESOC Sites
	↓ Literal Replication in which similar results are expected ↓ **within** PSOC and **within** ESOC sites	
Theoretical Replication → in which contrasting results are expected between ESOC and PSOC sites	Case 7	Case 8
	Case 9	Case 10

A total of 10 cases will be selected for this study: five communities identified as having established systems of care (ESOCs) and five communities identified as potential systems-of-care sites (PSOCs). The initial pool of potential sites for Phase I and Phase II will be identified through the results of the Center Study 1, the National Survey, and document review and telephone interviews will be conducted to confirm their qualifications for participation. ESOCs are sites that can be identified as having an active theory of change for their system of care and PSOCs are sites that, although they have an expressed commitment to systems-of-care values and principles, do not have an active theory of change. For this purpose, an active theory of change will be defined as one that is: (1) Grounded in systems-of-care values and principles and addresses the three key elements of a systems-of-care theory of change: an identified local population of children or youth, desired system-level outcomes for that population, and

the implementation of strategies intended to achieve those outcomes; (2) Clearly articulated and widely held across multiple stakeholders; and (3) Can be documented through interviews and document reviews related to service planning and delivery activities.

Data Collection and Analyses

Data collection and analysis for the explanatory case study (outlined in Table 2) will include a combination of qualitative and quantitative methods which have been selected in order to provide four kinds of evidence: (a) personal qualitative data for the purpose of providing evidence regarding perceptions, attitudes, and beliefs; (b) aggregate qualitative data for the purpose of providing organizational-level evidence; (c) personal quantitative data for the purpose of quantifying personal beliefs and attitudes; and (d) aggregate quantitative data for the purpose of general evidence not subject to the bias of group or self interest (Upshur, 2001).

Table 2
Explanatory Case Study Data Collection and Analysis

Personal Qualitative Methods **Semi-Structured Key Informant Interviews –** for the purpose of providing individual accounts of ways in which specific factors have or have not contributed to system development. **Direct Observation** of Service Delivery Structures and Processes – for the purpose of confirming or disconfirming the presence of system implementation factors and the reported levels of access and availability.	**Data Analysis** Narrative data generated through direct observation and interviews and will be analyzed for emergent themes using Atlas.ti qualitative analysis software.
Aggregate Qualitative Methods **Document Review** – for the purpose of establishing a chain of evidence regarding the implementation of specific factors that can be triangulated with individual and observational accounts.	**Data Analysis** Documents will be analyzed for emergent themes using Atlas.ti qualitative analysis software.
Personal Quantitative Methods **Key Informant Pattern Matching** for the purpose of understanding differences among key informant ratings of the importance and effectiveness of system implementation factors in relation to their contribution to the development of local systems of care.	**Data Analysis** Average ratings of importance and effectiveness across informants will be analyzed using SPSS statistical analysis software. Results will be compared and contrasted across respondents and across sites.
Aggregate Quantitative Methods **Documented Aggregate Outcome Data** for the purpose of substantiating that established sites having a theory-of-change are achieving outcomes related to the stated goals of their system.	**Data Analysis** Aggregate outcome data will vary across sites, but will be specifically linked to the identified target population and strategies. Analysis will include an assessment of whether the reported results reflect the achievement of stated goals for the identified population of children and youth.

Narrative data, including interviews and direct observation, will be analyzed for emergent themes using Atlas.ti qualitative software (Scientific Software Development, 1997). The analysis will involve independent review and coding of the data by multiple investigators and the identification of themes that are common across sites and specific to individual sites. Atlas.ti software allows for multiple levels of analysis that can be conducted in an iterative fashion and includes breaking down primary documents into passages, (a) coding according to identified categories, and (b) adding comments that are linked to specific passages, codes or families of codes. Initial coding schemes will be developed on the basis of the research questions. In addition, the use of Atlas.ti will facilitate the development of additional codes as the analyses are conducted. Themes and patterns emerging from the data will be identified.

The analysis of informant ratings of the importance and effectiveness of the systems-of-care implementation factors will be completed using SPSS statistical analysis software (SPSS, Inc., 2001) and will produce both consensus and outcome pattern matches. Consensus pattern matches, represented by ladder graphs, will be used to analyze the ratings of subgroups within a site by comparing subsets of participant responses on the importance or effectiveness of a specific factor. For example, this analysis will allow investigators to compare and contrast how interagency partners from education rate the importance and effectiveness of collaboration in comparison to how interagency partners from the mental health agency rate that same factor, thus providing insight into multiple perspectives on specific aspects of systems-of-care development. Similarly, subgroup responses can be compared across sites, providing information about how subgroups of key informants at different sites rate the importance or effectiveness of the same factor. Outcome pattern matches, also represented on the ladder graphs, is a cross-rating analysis that compares average participant ratings of importance for each factor to average participant ratings of effectiveness. This analysis can be done both within and across sites to better understand how key informant ratings of the importance of systems-of-care implementation factors compares to their ratings of effectiveness, allowing investigators to better understand the importance and effectiveness of the factors in relation to one another. Finally, established systems-of-care sites will be asked to provide outcome data related to their stated goals for the identified population of concern. The format and content of these data will vary depending upon the outcomes being reported.

Conclusion

It is hoped that these case studies will result in knowledge development of practical and applied significance in five broad areas: (1) New knowledge and better understanding related to how system implementation factors are operationalized and their role in creating systems of care. (2) New knowledge and better understanding of how system implementation factors relate to one another to achieve systems-of-care goals and what unique combination of factors may contribute to systems-of-care development. (3) New knowledge and better understanding of how factors are organized to carry out theories of change for systems of care across different local contexts. (4) New knowledge and better understanding of a value and principle-based foundation for the development of local theories of change for systems of care. (5) Finally, it is hoped that this study will build understanding of and give credence to the strategies local communities undertake in developing systems of care and will provide greater understanding of how communities develop systems of care that meet the unique needs of their children with serious emotional disturbance and their families.

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