

Symposium

Using Data to Transform Indiana's Behavioral Health System

Symposium Introduction

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The transformation of Indiana's behavioral health system has focused on the availability of quality data on which to base decisions. Lessons learned from a system of care study based on the state's existing database suggested that multiple tools are needed to improve the quality of mental health and addiction services. Specifically, Indiana has implemented the Child and Adolescent Needs and Strength (CANS) assessment (Lyons, 1999), the Consumer Service Review (CSR; Groves, 2007), and the Wraparound Fidelity Index (WFI-4.0; Bruns, et al., 2006) because of their focus on the needs of children and families and their consistency with system of care values.

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Predictors of Improvement for Children Served in Developing Systems of Care: Lessons for Transformation

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Introduction

Research regarding the effectiveness of systems of care (SOCs) for children with serious emotional disturbances is limited (Burns & Hoagwood, 2002). For example, there have been few studies using comparison groups (Rosenblatt, 1998), and SOC research is limited by issues related to determining the degree of adherence to the system of care framework (i.e., fidelity). The incremental development of local SOC in Indiana provided an opportunity for a quasi-experimental study. This paper focuses on the lessons learned that are relevant to the successful transformation of a behavioral health system.

Method

A state database was used to identify children receiving wraparound services and to identify a sample of similar children receiving usual public mental health services. Improvement in functioning related to psychosocial and contextual factors was measured using the Hoosier Assurance Plan Instrument for Children (HAPI-C; Newman, et al. 2002). Fidelity to the system of care framework was determined based on a developmental assessment (Sprague Efland, Walton & McIntyre, 2005) of emerging SOC's adherence to essential elements. The hypothesis was that children who are served in moderately to highly developed SOC's will have better outcomes than similar children receiving usual services. Logistic regression was used to identify predictors of improved functioning.

Sample

Three hundred eighty six children who were served in Indiana's developing SOC in 2004 were matched with youth served in the public mental health system. The following variables were considered: time between assessments, functioning, age, race, system functioning, living arrangement, gender, and ethnicity.

Fidelity measure: Level of Development. Fidelity to the SOC framework was measured by applying a theory of change (Prochaska, Norcross, & DiClemente, 1994; Rogers, 2003) which identified five stages of change (e.g., precontemplation, contemplation, preparation, action and maintenance) for SOCs. In a qualitative study (Sprague Efland, et al., 2005), the theory of change was combined with SOC values and essential elements (Pires, 2002) to create a coding structure for evaluation of the level of development of the state funded SOCs. A Strength Based Site Assessment (Sprague Efland, 2004) was used to evaluate local SOCs and to classify 25 local SOCs into the five levels of development. Level of development ratings at the service-delivery level were used to measure fidelity to wraparound. All five levels of development, corresponding to the five stages of change (Prochaska et al., 1994; Rogers, 2003) were represented in the study. Since the number of children served by sites in early levels of development was relatively small, the five levels were reduced to three. Precontemplation, contemplation, and preparation were combined as an Early Level of Development. Level four (action) became the Action Level; and level five (maintenance) became the Sustained Level.

Improvement in functioning. Functional assessment data from the state database were examined using nine logistic regression models. The HAPI-C includes scores for individual factors: affect, suicide, abuse, neglect, thinking, family, school, disruptive behavior, substance use, and reliance on mental health care. Psychosocial functional domains (e.g., affect, thinking, family functioning, school behavior, and disruptive behavior) were combined to create an overall wellbeing measure that had been correlated with the GAF (Newman, et al., 2002).

Results

Circumstances in which SOCs are effective are suggested in Table 1. Findings were not significant unless fidelity was considered. Specifically, children with impairments related to affective disorders who are served through child and family teams with high wraparound fidelity are more likely to experience improvements than children served in usual services. However, similar youth served by wraparound teams at the Action Level are predicted to do less well than children served in usual services. Abused children in Action Level SOCs are predicted to experience improvements in community functioning and less subsequent abuse. Most youth with disruptive behaviors, other than Hispanic youth, improve in wraparound teams. Families of children who live with their biological parents are more likely to improve than families whose children live in foster care, with extended family, or in out-of-home placements. Youth who are using substances have poorer outcomes.

Conclusions

In addition to the study's findings, practical lessons were learned by analyzing data from the state mental health database. The study moved from collecting data for external reports to using data to make decisions at the practice, program, and system levels. The complexity involved in analyzing the state's existing functional assessment data was beyond the capacity for routine reporting. Although rich outcome-based data existed, they were not accessible for use by providers or the state agency. The functional assessment had become a required "form" to determine eligibility for funding. After the assessment data were reported, they were only used for actuarial analysis to determine risk adjusted categories. The system was not helpful in making direct care decisions, improving quality, or monitoring outcomes.

Overall, the study highlights the relationship of fidelity to outcomes. However, the Level of Development "fidelity measure" for service delivery, although based on SOC values and principles, was complex to administer and was limited to one state's experience. During the study, these limitations were recognized, and the state's technical assistance center piloted the Wraparound Fidelity Index (WFI-3; Suter, et al., 2003); the state plans for wider use of the WFI-4 (Bruns, Suter, Force, Sather, & Leverentz-Brady, 2006) in 2007.

Table 1
Significant Predictors of Improvement Across Logistic Regression Analyses (Odds Ratios)

<i>IVs</i>	<i>A</i>	<i>F</i>	<i>H</i>	<i>I</i>	<i>AFGHI</i>	<i>C</i>	<i>D</i>	<i>G</i>	<i>L</i>
Male	1.997			.646					
African American	1.488								
Not Hispanic			.504	.379					.321
Extended Family							.043	.499	
Foster Family								.310	
Family Improvement	4.301	5.173	2.833	2.800	12.465	9.750	8.237		3.324
Baseline A	.358								
Baseline F		.720	1.192						1.285
Baseline G	1.409	1.367					1.813	.509	1.316
Baseline H			.406		.728			1.207	.792
Baseline I				.369	.755				
Baseline J						11.376			
Baseline L	1.077		1.327						.601
Baseline C		.606			.719	.011			.845
Baseline D					1.281		.034		
LOD1									
LOD2	.587				.644				
LOD3	1.658								
Interactions	ZjSOC	ZcLOD2		ZethnSOC	ZaLOD2	ZcLOD2		ZfSOC	ZhLOD2
	.767	2.111		1.490	.447	5.994		1.468	1.627
Interactions		ZgLOD3			ZefxSOC	ZjLOD2		ZhSOC	ZiLOD2
		.512			.358	.142		.667	.429
Interactions					ZjSOC				ZiLOD3
					.721				.357
χ^2	265.003	209.452	239.274	234.861	274.404	363.151	366.483	161.22	265.640
R^2	.398	.322	.362	.354	.408	.839	.806	.260	.394

Definitions: *A* = Affective Symptoms, *C* = Abuse, *D* = Neglect, *F* = Thinking, *G* = Family, *H* = School, *I* = Disruptive Behavior, *J* = Substance Use/Abuse, *L* = Reliance on Mental Health Services, *AFGHI* = Overall Wellbeing
LOD = Level of Development of System of Care Wraparound Services, *LOD1* = Early Development, *LOD2* = Action Level, *LOD3* = Sustained Development, *SOC* = wraparound services, *ZjSOC* = interaction between z score of substance abuse and receiving wraparound services

As Indiana adopts a state level SOC perspective, it is building the capacity to use multiple information based tools to improve the quality of mental health and addiction services, including the Child and Adolescent Needs and Strength (CANS; Lyons, 2004), the Consumer Service Review (CSR; Human Systems and Outcomes, 2006), and the Wraparound Fidelity Index (WFI-4.0; Bruns, et al., 2006). Each tool keeps the focus on the needs of children and families. Each is consistent with SOC values and principles. The following papers describe the application of these tools. Integrating these tools into an outcome quality management system will be an ongoing process.

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