Chapter One

Building and Maintaining Systems of Care

System-of-Care Implementation: Lessons Learned from Nine Graduating CMHS Grant Communities

Robert Friedman
Robert Paulson
Dean Fixsen

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Introduction

The Comprehensive Community Mental Health Services Program for Children and their Families was initiated in 1993 by the Center for Mental Health Services (CMHS) to promote the development of community-based systems of care for children with serious emotional disorders and their families. This study specifically focused on a cohort of nine grant communities that received initial funding in 1997, and completed their grant cycle in August 2003. It sought to determine how well each of these "graduating communities" implemented a system-of-care through examining existing data on the nine grant communities.

The study further sought to identify factors that either facilitated or inhibited the implementation of a system-of-care. The cohort of grant communities was examined based on a set of 52 indicators that include many of the same attributes employed in the system-level assessment currently used by ORC Macro in the national evaluation of CMHS sites (Brannan, Baughman, Reed, & Katz-Leavy, 2002), but more explicitly assess implementation factors related to planning, governance, theories of change, management, and the development of specific implementation strategies.

The present study was designed and conducted in the context of the prior findings that indicated rather consistently that although grant communities were all making progress towards implementing system-of-care principles, there was greater difficulty in bringing about system change at the infrastructure level than there was in making change at the service delivery level (Brannan, Baughman, Reed, & Katz-Leavy, 2002; Vinson, Brannan, Baughman, Wilce, & Gawron, 2001). The present study includes a special emphasis on the overall implementation process recognizing that implementation of complex programs is extremely difficult and time consuming.

Methodology

The overall design of the study consists of several components. The project team is comprised of six individuals with experience using qualitative and quantitative evaluation measures. From the project team, each grant community was assigned a review team consisting of one primary coder and a reader. Each review team examined salient documents covering the period from the original application through year 5 of implementation including original applications, continuation applications, ORC Macro site visit reports, and CMHS site visit reports. The coding was done using *Atlas.ti* software (Scolari. 1997) and the reader and coder resolved any discrepancies in the coding.

In addition, each grant community review team wrote a summary report detailing outstanding features, facilitators, barriers, and lessons learned for each of the five domains described below. These summary reports were provided to the site visitors employed by the national evaluation. The site visitors were asked to review the information, confirm the tentative conclusions reached by the project team, and add any further detail that might promote greater understanding of the information.

Framework

The system-of-care implementation assessment developed specifically for this project is guided by a conceptual framework that consists of five domains. The domains are *Planning and Implementation Processes, Governance, Management, Service System Processes and Characteristics, and Service Delivery*

Characteristics and Components. Each of these five domains is comprised of several components that were based on specific system-of-care principles (Stroul & Friedman, 1986) and general planning principles. The *Planning and Implementation Processes* domain is comprised of catchment area, goals and objectives, identification of community needs, services scope defined, strategy, target population, and theory of change. The *Governance* domain includes external community support, governance structure, leadership and advocacy, support from mental health and Medicaid, and value base. The *Management* domain is comprised of financing, financing flexibility, fiscal incentives, focus, leadership and advocacy, management information system, responsiveness to partners, structured interagency functions, structured service delivery, and workforce development. The *Service System Process and Characteristics* domain includes collaboration, evidence-based program built in, integration of services, provider network, service array, and services accessible. The *Service Delivery Characteristics and Components* domain is comprised of case management, comprehensive treatment plans, continuity of care, culturally competent services, early identification and intervention, family choice, family involvement, focus on engaging in care, focus on strengths/needs, individualization, least restrictive, services based on assessment of strengths/needs, services tied to functional outcomes, services to whole family, smooth transition to adult services, team process, and understanding help-seeking behavior.

Findings & Recommendations

The communities within this cohort of nine grantees were very diverse, varying enormously in overall population and population density, racial and ethnic composition, and correspondence with governmental jurisdictions. There are special challenges in establishing community-based systems of care associated with virtually every grant community based simply on the catchment area identified. It was clear, for example, that achieving project goals in a grant that targets 11 counties and four regions, such as North Carolina, is very challenging, as it is in a community of high poverty which is just one neighborhood within a large city, like Detroit.

It is not surprising, in light of this, that the analysis found that while four of the nine grantees appear to have made substantial progress in implementing a system-of-care, site visit reports from later years of implementation indicate that five grants communities made more modest progress. Overall, the analysis indicates that the greatest progress across grant communities was in implementing service delivery processes that are consistent with system-of-care principles. This includes developing individualized services that are consistent with child and family needs and strengths, involving families as partners, providing services to families in a culturally competent way, and providing services within the local community. Although progress also was made in using the grant opportunity to bring about broader system change so that multiple sectors were truly operating in a collaborative manner, the gains appeared to be more limited in these domains.

While there clearly remains a need for further improvement at the service delivery level, the major need appears to be strengthening implementation for sustained system change. This is a complex and difficult undertaking but ultimately the greatest benefit from the grant program is likely to come from achieving sustainable system change to increase access to care, and improve quality and cost-effectiveness of care. Based on the review of the available documents, there are six domains in particular where further work on implementation is needed. The first is project *governance.* Governance across multiple service sectors and with strong family involvement from families is never easy. It is particularly difficult when a project involves multiple counties or regions, like Nebraska, North Carolina, North Dakota, Vermont, and Wisconsin, or a sub-unit of a city or county, such as Detroit, and the review of documents indicated a number of difficulties either in engaging all service sectors in the governance process, or engaging all counties or regions in the process.

The second implementation area that needs more work is developing and applying a *theory of change.* Such a theory is extremely helpful in guiding decisions about such things as interventions to be developed, allocation of resources, accountability procedures, and training to be provided. Explicit theories of change were almost totally lacking in initial grant proposals, and little progress was shown in this area in site visit reports.

The third implementation area of concern is the use of existing data and the systematic collection of new data by grant communities for purposes of *continuous quality improvement.* Most grant communities were not capitalizing on the data collected for the national evaluation or instituting their own data collection procedures for purposes of assessing how well the system was functioning so that improvements could be constantly implemented. The use of data for continuous quality improvement is an important part of an effective management operation, particularly in a complex system change effort such as this.

The fourth implementation area worthy of special note is the development of *strong collaboration between the partners in the project.* Effective and sustainable systems of care require partnership between mental health and other systems, for example child welfare, education, juvenile justice, and substance abuse. They also require close collaboration between parents and professionals. The present cohort of grant communities appears to have been more successful in developing partnerships between parents and professionals than in developing multi-sector partnerships. More attention is clearly needed with respect to the development of such partnerships.

The fifth area of concern is achieving a *culturally competent* system-of-care. The major emphasis within cultural competence has typically been on the delivery of culturally competent services to individual children and families. This is extremely important and grant communities have devoted considerable attention to it. The Native American Communities were particularly successful in this area. Those grant communities in which there were multiple cultures represented in the community of concern, such as North Carolina, San Diego, and Wisconsin, and in which grants were given to agencies of government that were outside of the communities, had especially difficult tasks to apply principles of cultural competence community-wide.

The sixth implementation area meriting further attention is the careful development of *strategies* to achieve the project goals. The written material reviewed as part of this analysis, including both initial grant proposals and subsequent site visit reports, indicated that grant communities had a strong and clear sense of what they wanted to accomplish, and a good understanding of the values and principles of a system-of-care. This was an important strength. Less well developed, however, especially at the beginning of the grant cycle, was a coherent, integrated set of strategies to help move the system from its starting point to the desired end point.

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CONTRIBUTING AUTHORS

Robert Friedman, Ph.D.
Chair, Dept. of Child & Family Studies, Director, Research & Training Center for Children's Mental Health, 813-974-4640, fax: 813-974-7743, e-mail: friedman@fmhi.usf.edu

Robert Paulson, Ph.D.
Visiting Research Professor, 813-974-3117, fax: 813-974-7563, e-mail:rpaulson@fmhi.usf.edu

Dean Fixsen, Ph.D.
Research Professor, 813-974-4446, fax: 813-974-7743, e-mail: dfixsen@fmhi.usf.edu

All authors: Louis de la Parte Florida Mental Health Institute, University of South Florida, 13301 Bruce B. Downs Blvd., Tampa, FL 33612

Topical Discussion

Merging a Systems of Care Approach and a Public Health Framework

Panelists
Larke Huang
Deborah Perry
Joyce Sebian
Nancy Davis
Susan Stromberg

Introduction

The President's New Freedom Commission on Mental Health calls for a public health approach to mental health care. This is a new approach for child and family mental health that focuses on promotion of social and emotional well-being and resiliency, prevention, and early identification and treatment of problems. Much attention in recent years has focused on interventions with children who have serious emotional disturbances and their families. These interventions have been embedded in a systems-of-care approach to service delivery. As these two approaches gain increasing support, what are the implication for states and local communities? How does a public health approach fit within a systems-of-care framework? What is actually meant by a public health approach to mental health? How would this be implemented? Is a public health approach a cross-system strategy? Would systems of care become siloed within different child-serving systems, undermining the principles of this approach? What are the implications for the populations served and the utilization and allocation of fiscal and human resources? What are the challenges and benefits of blending these approaches?

This roundtable provided a forum for participants to discuss these issues. In lieu of formal presentations, a facilitated discussion among participants drew upon diverse stakeholders' perspectives and experiences. The objective of this roundtable was to better clarify these constructs, their intersection and compatibility, the feasibility of implementation in the field, and the factors which will drive states and communities to implement a public health and/or systems-of-care approach. This summary captures some of the key questions, concerns and recommendations resulting from this discussion.

Discussion Highlights

Mental Health Continuum. The IOM Mental Health Interventions Spectrum and Interactions of the Mental Health Status Continuum, and the Mental Health Care Continuum by Scanlon, Sydney, Australia both provide a useful framework for consideration of the complexity of the continuum along the *status* continuum as well as along the *care* continuum. The constructs are both multifaceted and integrally related. The discussions in the field note that we move back and forth along the continuum throughout our lives. This movement is influenced by an array of biological, psychological and social factors. The IOM report focuses on health promotion as an enhancement of well-being—while the Australian Mental Health initiative *includes* prevention in its definition of mental health promotion. Mental health interventions prevent comorbidity, disability and relapse at the treatment end of the spectrum. At the systems level, system-of-care services focus on cross-system development for children with serious emotional disturbances and their families.

In a mental heath care continuum, care incorporates services and supports that enhance health by promoting optimum mental health; primary prevention addresses risk factors for vulnerable groups; and early recognition and intervention services detect a problem or illness at an early stage and increase access to effective treatment. Within this framework, specific treatment and rehabilitation interventions reduce symptoms of an illness, diminish disability and improve the quality of life for children and families with a mental disorder.

In the future, the field will need to address how a broad mental health continuum interfaces with systems of care. Is it a broadening of the system of care, or do we need a different framework? What is the transformation goal?

Public Health Approach. Key elements of a public health approach were identified and discussed, including the central concepts of risk and protection. The CORE Elements of a public health approach were outlined, with the following five steps for application to mental health services:

- Profile population needs, resources, and readiness to address the problems and gaps in service.
- Develop a comprehensive strategic plan.
- Mobilize and/or build capacity to address needs.
- Implement evidence-based, resilience-building prevention/ treatment programs.
- Monitor process, evaluate effectiveness, sustain effective programs, and improve or replace those that fail.

Transforming, Linking and Caring Project (TLC). The TLC Project is a one-year pilot project (Oct. 03-Sept. 04) that aimed to foster linkages across SAMHSA/CMHS grantees in three sub-state regions. Consistent with the "Achieving the Promise for Children's Mental Health" Transformation goals, the TLC project facilitates dialogue across identified grant programs for the purpose of building a more comprehensive, coordinated mental health services delivery system across a continuum of mental health services and supports including: promotion, prevention, early identification/intervention and treatment/ intervention services, and to facilitate sustainability once grant funding ends

In collaboration with the SAMHSA Children and Family Matrix Work Group, the TLC project utilized a feasibility study that included an extensive mapping process to identify three geographic regions with significant levels of SAMHSA/CMHS funded children's programs. Nine SAMHSA/CMHS grant programs were targeted. *(See Appendix A)* TLC Regions selected for the pilot year were: New York, New York (urban), Willmar, Minnesota (rural), and Portland, Oregon (suburban) Systems of Care, along with the Safe Schools/Healthy Students grant programs which are two of the signature grant programs that have been core in the selection of each TLC region. An evaluation of the pilot is underway, with Institutes planned for March and April 2004.

Blending the approaches. Throughout the session, participants addressed the following question: What are the challenges and benefits of blending the system of care approach with a public health approach? A summary of key comments follows.

- Transformation goal #1: Americans understand that mental health is essential to overall health.
- Public Health provides for a broad population based approach vs. a focus on systems or individuals.
- Families, youth, communities see the importance of a focus on the whole child, whole family and whole community. The public health approach addresses mental health, physical, spiritual and emotional health— as a whole.
- Mental health stigma can be reduced if mental health is reframed through a public health approach.
- It will be necessary to develop much broader and more connected view of families and children with SED within the services community.
- Strategies must be developed to incorporate the systems of care for SED children and their families into the fabric of communities and the lives of their members.
- Public health must include effective intervention approaches at all levels of the mental health continuum.
- What is Public Health? There is need for clarification of definitions of public health.
- Across the disciplines including mental health and public health, there is little dialogue.
- There need to be concrete approaches for engaging children, youth and families at all levels of the continuum and in all areas of decision-making.
- Financing for promotion/prevention continues to be a challenge for communities and states. Traditional financing of mental health services focuses on children and families with mental illness. Prevention and treatment should not compete against each other but work in concert.
- There is a clear difference between positive mental health, and prevention.

- A mental health continuum of services may exist at the sub-community level such as in programs, schools, departments etc.
- Public health approaches incorporate strategies that are universal selected and indicated based upon data.
- The public health field is new to mental health also—there is work to do to bring the fields together.

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CONTRIBUTING AUTHORS

Larke Huang Ph.D.
Managing Director/Research Scientist, American Institutes for Research 1000 Thomas Jefferson St., NW Washington, D.C. 20007, 202-403-5180, fax: 202-403-5001, e-mail: Lhuang@air.org

Deborah Perry Ph.D.
Senior Policy Associate, 202-687-2071, e-mail: dfp2@georgetown.edu

Joyce Sebian M.S.Ed.
Senior Policy Associate, 202-687-8245, e-mail: jks29@georgetown.edu

Both authors: Georgetown University, National Technical Assistance Center for Children's Mental Health, 3307 M Street NW, Suite 401, Washington, DC 20009

Nancy Davis Ed.D.
Public Health Advisor, 301-443-2844, e-mail: Ndavis1@samhsa.gov

Susan Stromberg
Public Health Advisor, 301-443-5474, e-mail: Susan.stromberg@samhsa.gov

Both Authors: Center for Mental Health Services, Substance Abuse and Mental Health Services Administration, 5600 Fishers Lane RM 11C-16, Rockville, Maryland 20857

The Influence of System of Care Implementation on Clinical Outcomes

John W. Gilford
Robert L. Stephens
E. Michael Foster

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Introduction

The present study attempts to develop a model of change in clinical symptomatology over time for children with serious emotional disturbance being served in systems of care funded through the Comprehensive Community Mental Health Services for Children and Their Families Program. This program, supported by the Center for Mental Health Services (CMHS) at the Substance Abuse Mental Health Services Administration (SAMHSA), has awarded grants for the establishment of systems of care for mental health services in 85 communities throughout the United States and its territories, and represents the largest federal investment ever to develop community-based mental health services for children and their families (Manteuffel, Stephens, & Santiago, 2002). The system-of-care program theory (Stroul & Friedman, 1986) maintains that mental health service delivery systems for children with serious emotional disturbance need to offer a wide array of accessible, community-based services that focus on children's individual needs, include the family in treatment planning and delivery, and provide services in a culturally competent manner and in the least restrictive setting possible. In addition, because many children with serious emotional disturbance come into contact with several child-serving agencies, these agencies should provide services in a coordinated and collaborative manner. Further, the program theory maintains that, if services are provided in this manner, outcomes for children and families will be better than can be achieved in systems providing services as usual. Prior research indicates that the program establishes delivery systems consistent with the system-of-care principles (Brannan, Baughman, Reed, & Katz-Leavy, 2002), yet research has not established the link between these principles and outcomes at the child level. The present study addresses whether changes in children's symptoms over time are related to child-level characteristics and characteristics of the service delivery system.

Method

Participants. Data were obtained from the longitudinal outcome study component of the National Evaluation of the Comprehensive Community Mental Health Services for Children and Their Families Program. This component of the evaluation seeks to examine the effects of the system-of-care approach on child and family outcomes. The sample included 1,800 children/youth with severe emotional disturbance who were receiving services within 23 CMHS-funded systems of care. The mean age for the sample was 11.8 years (*SD* = 3.3). The sample was predominantly male (67%). The largest racial/ethnic group represented was White, non-Hispanic (57%), followed by African American, non-Hispanic (25%), Hispanic (7%), Other (6%), and American Indian/Alaska Native (5%). In addition, 46% of the sample came from households with family incomes of less than $15,000 per year.

Instruments and procedures. As participants in the National Evaluation, caregivers of children in the sample were administered the Child Behavior Checklist (CBCL: Achenbach, 1991) as part of the data collection protocol at the time their children entered services and then every six months throughout the 24-month timeframe. The CBCL is a standardized clinical measure of behavioral and emotional problems for children 4 to 18 years of age. The CBCL consists of 113 behavior problem items and 17 social competence items. The instrument produces a Total Problems score as well as two broad band scores (i.e., Externalizing and Internalizing Problems), eight narrow band syndrome scores, and three behavioral competencies scores.

In addition to the outcomes portion of the study, a systems-of-care assessment was conducted in each community to assess the system's practices relative to the systems-of-care principles. The systems-of-care assessment protocol was developed to evaluate the implementation and development of systems of care (Vinson, Brannan, Baughman, Wilce, & Gawron 2001; Brannan et al., 2002). Preliminary analyses revealed that the system-of-care principles were generally realized, but there was substantial variability across sites (Brannan et al., 2002). The protocol consisted of a mixed quantitative and qualitative methodology, with data collected via semi-structured interviews conducted with multiple stakeholders during regular site visits to grant-funded communities. The data obtained were scored to measure the level of implementation of the systems-of-care principles (i.e., family-focused, individualized, culturally competent, interagency, collaborative, accessible, community-based, and least restrictive) across the infrastructure and service delivery domains of children's mental health services.

Analysis. A three-level hierarchical linear model (Bryk & Raudenbush, 1992) was performed using HLM 5.0 (Ruadenbush, Bryk, Cheong, & Congdon, 2000). The model included individual change in CBCL Externalizing scores at level 1, child-level variables at level 2, and system-level variability in implementation of system-of-care principles at level 3. Level 1 modeled change in clinical symptoms from intake to 24 months, as measured by the CBCL Externalizing Problems raw score. Level 2 modeled variability in the intercepts and slopes from level 1 and incorporated child-level variables as covariates. Level 2 predictors included age, gender, race and family income. Level 3 modeled variability in Level 2 parameters at the system level and incorporated systems-of-care assessment scores as covariates. Potential Level 3 predictors included the eight systems-of-care principle scores in the service delivery domain.

Results

A preliminary analysis of CBCL Externalizing Problems scores was performed. In order to determine the average rate of change for child symptomatology across five waves of data collection from intake to 24 months, an unconditional three-level model was generated. Results of the unconditional model indicated significant variability in intercepts and slopes from level 1.

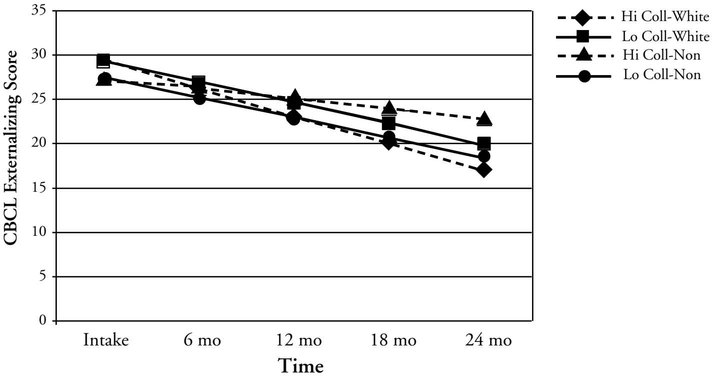
A summary of significant predictor variables is provided in Table 1. The average coefficient for the intercept was 28.52, while the average coefficient for the linear slope was -4.52, indicating that on average, children improved across the 24-month period. Race (ß = 1.88), age (ß = -1.48) and least restrictive care score (ß = -1.62) were found to be significant predictors of children's initial CBCL Externalizing scores. For the slope, race (1 = White, 0 = Non-White, ß = -2.21) and the collaborative/coordinated care score (ß = -6.22) were found to be significant predictors of rate of change. Results of the analysis indicated that the system-level variability in the effect of race on the rate of change was predicted by scores for the collaborative/coordinated principle in the service delivery domain such that greater collaboration and coordination within a grant community was associated with greater rates of improvement for Whites (see Figure 1). White children from highly collaborative and coordinated grant communities improved at the fastest rate (-6.03) followed by White children from grant communities with low collaboration/coordination scores (-4.64), then Non-White children from grant communities with low collaborative/coordinated scores (-4.34) and improving at the slowest rate, Non-White children from grant communities with high collaborative coordinated scores (-2.27).

Table 1
Final Estimation of Model Parameters

Fixed Effect	*Coefficient*	*Standard Error*	*T-ratio*	*Approx. df*	*p-value*
For Intercept1 (π0)					
For Intercept2 (β00)					
Intercept3 (γ000)	28.47	0.54	52.55	21	0.000
For Least Restrictive (β01)					
Intercept3 (γ010)	-1.62	0.77	-2.10	21	0.048
Age (γ011)	-1.48	0.68	-2.21	22	0.038
For Race (β02)					
Intercept3 (γ020)	1.89	0.91	2.07	22	0.05
For Linear Slope (π1)					
For Intercept2 (β10)					
Intercept3 (γ100)	-4.52	0.47	-9.69	22	<0.001
For Race (β11)					
Intercept3 (γ110)	-2.21	0.86	-2.56.	21	0.019
Collaborative/ Coordinated (γ111)	-6.22	2.64	2.36	21	0.03

Figure 1

CBCL Externalizing Raw Scores: Collaboration on Race for Slopes



Discussion

The findings of the present study represent one of the first successful attempts to examine the impact of system-level measures of system-of-care implementation on individual-level clinical outcomes. Although numerous factors both at the system level and the individual level have been hypothesized as having some influence upon outcomes for children with serious emotional disturbance (Burns, 1996), efforts to empirically substantiate these theorized relationships have been unsuccessful (Bickman, Lambert, Andrade, & Penaloza, 2000). The results of the analysis of the influence of child-level characteristics on individual outcomes are similar to previous research focusing on individual changes in symptomatology and the factors that influence change. The present study revealed significant variability among the rates of change for the children in this sample, and race differentiated individuals in terms of their change rates. Further, the extent to which a system had implemented the principle of collaborative/coordinated care differentiated the influence that race had on rates of change in clinical symptoms across systems. These results clearly suggest that the racial disparities present in other areas of the health care delivery system are also present in systems of care.

The primary limitation of this study was that scores from initial systems-of-care assessments were used to predict outcomes. As a result, the scores are only representative of principle implementation at the time of the assessment. In order to address this issue, future analyses will incorporate systems-of-care principle scores as time varying covariates, thereby more accurately reflecting how clinical outcomes change as a result of continuing grant community development.

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CONTRIBUTING AUTHORS

John W. Gilford, Jr., Ph.D.
Senior Scientist, 404-321-3211, fax: 404-321-3688, e-mail: john.w.gilford.jr@orcmacro.com

Robert L. Stephens, Ph.D., M.P.H.
Technical Director, 404-321-3211, fax: 404-321-3688, e-mail: robert.l.stephens@orcmacro.com
Authors Above: ORC Macro, 3 Corporate Square, Suite 370, Atlanta, GA 30329

E. Michael Foster, Ph.D.
Associate Professor, Department of Health Policy and Administration, 116 Henderson Building,
University Park, PA 16802-6500, 814-861-3625, fax: 814-863-2905, e-mail: emfoster@psu.

Using Change Theories to Assess System of Care Development

Vicki Sprague Effland
Betty Walton
Janet McIntyre

Introduction

Systems of care have been developing in Indiana since the early 1990s. In 1997, the Dawn Project began serving children with serious emotional disturbances and their families in Marion County. In 1999, Marion and Lake counties received Comprehensive Community Mental Health Services for Children and their Families Program grants from the Center for Mental Health Services (CMHS). Building on the early successes of these two systems of care, in 2000 the Indiana Division of Mental Health and Addiction (DMHA) provided small (i.e., under $50,000) development grants to communities to implement their own systems of care. Since then, 22 sites and 38 counties have received grants from DMHA for local systems of care development.

All communities currently funded by DMHA receive technical assistance, support, and training from the Technical Assistance Center for Systems of Care and Evidence Based Practices for Children and Families (TA Center). The TA Center, which was formed in 2002 through a contract with DMHA, uses a coaching model to provide assistance to local systems of care in their communities. Specifically, a TA Center site coach is assigned to each of the sites funded by DMHA to implement systems of care. The site coaches travel to each community at least monthly and provide guidance, mentoring, assistance, training, and advice to community leaders from mental health, child welfare, juvenile justice, education, community-based organizations and to family members who are working to implement both the system level and service-delivery level elements of systems of care in their communities.

The Indiana sites are diverse regarding many variables, including urban vs. rural, income levels, population demographics, and size. These communities are equally diverse in the level of systems of care development at the time they were funded and their readiness to change or adopt new innovations (Prochaska, Norcross, & DiClemente, 1984; Rogers, 1995). In order to assess the level of systems-of-care development, essential elements of systems of care need to be identified. Sheila Pires (2002) provides one source of essential elements, and describes elements at both the system level (e.g., system management, service array/provider network, staffing, and evaluation) and service-delivery level (e.g., care authorization, care coordination, screening and assessment, and crisis planning). According to Pires, these aspects of systems of care require structure, and although the actual implementation of these elements in various communities may differ, a clear process or structure must be established for each of these elements (pg. 13). Similar elements for service delivery (e.g., practice model, collaboration and partnerships, capacity building and staffing, acquiring services and supports, and accountability) were identified by Walker, Koroloff, and Schutte (2003) as necessary conditions for implementing individualized service/support teams (i.e., wraparound teams and child and family teams.

Models that conceptualize behavior change at the individual level (Prochaska, et al., 1994) and the adoption of innovations at the system level (Rogers, 1995) were used as a framework to assess systems-of-care development in communities throughout Indiana. Prochaska, Norcross, and DiClemente (1994) have identified five stages of change (i.e., precontemplation, contemplation, preparation, action, and maintenance) that individuals cycle through as they contemplate and prepare for change. According to the authors, some individuals cycle through the stages quickly and sequentially and others move back and forth between the stages and progress much more slowly. The corresponding theoretical stages of the innovation-decision making process (i.e., knowledge, persuasion, decision, implementation, and confirmation) identified by Rogers (1995) for the diffusion of innovations across systems also suggest that the rate at which systems adopt new innovations varies. Specifically, the perceived attributes of the innovation, the type of innovation decision, type of communication channels (e.g., mass media or interpersonal), nature of the social system, and extent of the change agents' promotion efforts all determine the rate of adoption. It is hypothesized that system of care communities will exhibit similar variations in both their initial stage of development and the rate at which they move through the stages of change and adopt systems of care.

Method

Based on information obtained from communities during their regular site visits, the TA Center site coaches complete a strength-based site assessment for each community. This assessment, which was developed by TA Center co-director Vicki Sprague Effland, was based on the essential elements of systems of care by Pires (2002). The assessment was completed for 16 sites, covering 21 counties, in fall 2002. Reassessments of 14 of these sites were completed in January 2004.

A coding template was used to convert the information contained in the strength-based site assessments into stages of systems of care and wraparound development. Specifically, the coding template identified activities necessary for the development and implementation of systems of care and wraparound at the five comparable stages of change proposed by Prochaska, Norcross, and DiClemente (1994) and Rogers (1995; see Table 1). After information from the strength-based site assessments were coded, two raters assigned an overall system of care score (i.e., 1 to 5 consistent with the five stages of change) and overall wraparound score to each site. These scores were used to assess the stages of change sites for Time 1 (fall 2002) and at Time 2 (January 2004). In this way, the rates at which sites progressed through the stages of change and the levels of system of care and wraparound development during the one-year period were assessed.

Table 1
The Five Stages of Change and Adoption of New Innovation by Individuals and Organizations.

	Comparable Stages of Change		
	Innovation-Decision Process (Rogers 1995)		*Stages of Change (Prochaska, Norcross & DiClemente, 1994)*
	Individuals	*Organizations*	
Stage 1	Knowledge	Agenda-Setting	Precontemplation
Stage 2	Persuasion	Matching	Contemplation
Stage 3	Decision	Redefining/ Restructuring	Preparation
Stage 4	Implementation	Clarifying	Action
Stage 5	Confirmation	Routinizing	Maintenance

Results

The results indicate that the majority of sites progressed through at least one stage of development at both the system and service-delivery (e.g., wraparound) levels between Time 1 and Time 2. Specifically, at the system level, no counties moved to a lower stage of development, five counties stayed at the same stage, four counties moved up one stage, three counties moved up two stages, and one county moved up three stages. Figure 1 illustrates the overall change in system-level development from Time 1 to Time 2 across all 14 counties. While the majority of counties were in Stages 1, 2, and 3 at Time 1, the majority of counties were in Stages 3, 4 and 5 at Time 2.

Similar results were found at the service-delivery (e.g., wraparound) level. Specifically, no sites moved to a lower stage of development, three counties remained at the same stage, six counties moved up one stage, and two counties moved up two stages. Figure 2 presents the overall change in development at the service-delivery level across the 14 counties. At Time 1, the majority of counties were in Stages 1, 2, and 3. At Time 2, the majority of counties were in Stages 3, and 4.

Figure 1
Number of Counties at Each Stage of System-Level Development

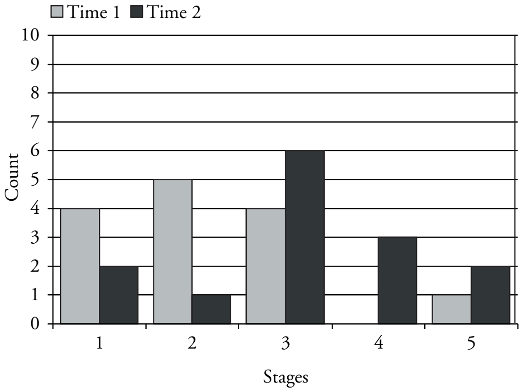
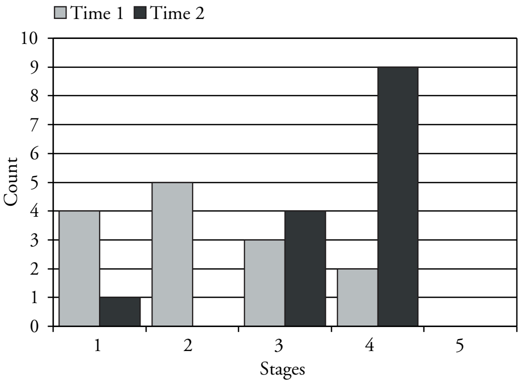


Figure 2
Number of Counties at Each Stage of Service-Delivery Level Development



Discussion

With 92 counties in Indiana, taking systems of care statewide is a challenging endeavor. This endeavor is even more challenging given the diversity that exists across the counties, not only in terms of geographic and demographic characteristics, but in terms of their level of system of care development when they initially received DMHA funding. The current study applied two theories of change: Prochaska, Norcross, and DiClemente (1994) for individual behavior change, and Rogers (1995) for the adoption of innovations in systems, to community-level development at both the system and the service-delivery levels. The results of the study indicate that the system of care communities progressed through the stages of change at different rates. Although a few communities remained at the same stage at Time 1 and Time 2 at both the system level and service-delivery level, the majority of communities advanced through one to three stages during the one-year period.

The application of theories of change to systems of care and wraparound has important implications for the ongoing development of systems of care in Indiana. First, the type and level of assistance provided by the TA Center can be customized to meet the needs of communities in the various stages of change. Second, further understanding of the tasks to be accomplished at each stage of change can help provide communities with a road map for system of care development. Specifically, once a community recognizes that they have progressed through a given stage of change, they can identify the activities that are necessary in the next stage and plan accordingly. Third, knowledge of a community's stage of change at the time they apply for system of care funding could help guide funding decisions and allow scarce resources to be allocated to those communities who are most ready to adopt system of care and wraparound as new innovations. Finally, information about the stages of change of various communities can be used in evaluating the effectiveness of systems of care and wraparound. Therefore, the TA Center, DMHA, and communities throughout Indiana are challenged to effectively apply change theory to meet the needs of the emerging system of care sites based on their level of system of care development.

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CONTRIBUTING AUTHORS

Vicki Sprague Effland, Ph.D.
Director of Outcomes and Evaluation, Choices, Inc., 4701 N. Keystone Ave., Suite 150, Indianapolis, IN 46205, 317-205-8232, fax: 317-726-5795, e-mail: veffland@kidwrap.org

Betty Walton, A.C.S.W., L.C.S.W.
Consultant, Office of Transitional Services, Division of Mental Health and Addiction, 402 W. Washington St., Room W353, Indianapolis, IN 46204-2739, 317-232-7907, fax: 317-233-3472, e-mail: BWalton@fssa.state.in.us

Janet McIntyre, M.P.A.
Director of Technical Assistance and Training, Choices, Inc, 4701 N. Keystone Ave., #150, Indianapolis, IN 46205, 317-205-8266, fax: 317-726-5795, e-mail: jmcintyre@kidwrap.org

A Mixed Methods Study of Collaboration in Systems of Care

Mary E. Evans
Mary I. Armstrong

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Introduction

Since Jane Knitzer's 1982 report entitled *Unclaimed Children*, many states and localities have been developing systems of care to more effectively serve children with serious emotional disturbance. Several policy approaches have been used to foster the development of these systems of care for children with multiple complex needs and their families. These approaches have included unfunded mandates, laws and memoranda of understanding, systems change and other mechanisms.

To date the findings of studies of child and family outcomes associated with systems of care have been disappointing. Two well-designed evaluations (Bickman, Heflinger, Lambert, & Summerfelt, 1996; Bickman, Summerfelt, Firth, & Douglas, 1997) have shown that the functional outcomes of system of care interventions have not been superior to outcomes of non-system of care or traditional approaches to providing care to children requiring services from several organizations. This finding has prompted the reexamination of approaches to studying systems of care, leading to a focus on process and system level outcomes before examining child and family outcomes such as functioning. The logic behind this approach is that if the child serving system does not change to reflect the principles and values of systems of care as articulated by Stroul and Friedman (1986), it is unreasonable to expect that the desired child and family outcomes will be realized. The mechanism or policy instrument used to establish systems of care and the resulting level of collaboration may be important factors influencing the achievement of client level outcomes. The purpose of this current federally funded research project is to examine the relationship between the policy instrument used to foster the development of systems of care and the resulting level of collaboration among the partner agencies.

Methods

Phase 1 of this study was a national survey in which all states were asked if they had established, either at the state or local level, a system of care for children with serious emotional disturbance. States that had established one or more such systems were requested to provide the research team with data and relevant documents regarding their policy instruments. Thirty-nine (78%) states responded to the request for this information. The materials they supplied were coded independently by two team members regarding the policy instrument used, the principles of a system of care that were described, the participating agencies, the target population, and other relevant variables. Policy instruments included mandates, inducements, capacity building and system change as described by Elmore (1987). Coding discrepancies were resolved by the team members through re-review of the state's documents. The data were entered into a computer and a cluster analysis was conducted. Five clusters were identified based on the agencies involved, the principles of systems of care included, and the type of policy instrument used. The clustering program identified an exemplar state in each cluster.

In Phase 2 of this study, site visits lasting 3 to 7 days were conducted at the five exemplar sites, using a backward mapping approach, i.e., beginning at the level at which the maximum impact of the policy is desired (local level) and moving to the state level. Data were gathered by observing meetings, reviewing records, interviewing parents and other key informants using semi-structured interviews and administering the *Interagency Collaboration Scale* designed by Greenbaum and Brown (2001). The three subscales in this instrument are: (1) beliefs and attitudes regarding collaboration, (2) items shared among organization (behaviors), and (3) information on personal experience with other organizations in the system of care (knowledge). After examining the results from this round of participant responses to the Interagency Collaboration Scale (N =114), the researchers decided to visit an additional five sites to increase the size of the sample and to examine whether intra cluster differences were greater than inter cluster differences. Accordingly, one state from each cluster was selected randomly for site visitation, bringing the total number of sites to 10 (two in each cluster). An additional 187 respondents completed the collaboration scale. The results of the analysis of the data collected through the collaboration scale were presented in 2003 and archived in the proceedings of the Research and training Center for Children's Mental Health (Evans & Armstrong, 2004). The purpose of the 2004 presentation and proceedings is to examine the extent to which the qualitative data from all 10 states supported our initial hypotheses.

Results

Six hypotheses are listed below and the support for these hypotheses is noted.

Hypothesis 1 states that policies that are consistent with systems-of-care values and principles will result in higher levels of collaboration than those that are not consistent. The qualitative data upheld this hypothesis in 7 of 10 states.

Hypothesis 2 stated that collaboration would be greater when policies are clear in their statement of the population to be served and the goals of the policy. This hypothesis was supported by the qualitative results in 6 of 10 states.

Hypothesis 3 proposed that higher levels of collaboration would occur with capacity building or system change approaches. The qualitative data supported this hypothesis in 6 of 10 states. It was noted that some states with laws or mandates had high levels of collaboration.

Hypothesis 4 stated that a grassroots approach to establishing a system of care would be more successful in fostering collaboration than a top down approach. The data did not support this hypothesis in 9 of 10 states. States that initiated systems of care at the state level, using policy instruments, had collaboration levels equal to these of states beginning their systems of care at the local level.

Hypothesis 5 speculated that policies associated with adequate resources would be more successful in fostering collaboration than those with modest or inadequate resources. The qualitative and quantitative data provided mixed support (50/50) for this hypothesis. Respondents noted that resources could foster competition rather than collaboration.

Hypothesis 6 stated that policies established with fewer organizations involved in the implementation would be more successful than those involving more organizations. A review of policy statements from the 10 states indicated that this hypothesis was supported in only 2 states. States with a greater number of agency partners involved in implementation were often more successful than those with fewer partners.

Discussion

Much of what we have believed regarding the implementation of systems of care was not supported by the data. It should be noted that the Interagency Collaboration Scale and the approaches to data collection that were used in this study failed to include relevant information about organizational structure and climate. In their comments written at the end of the collaboration instrument, some respondents emphasized the importance of these factors. For example, a number of the respondents listed specific structural or organizational factors such as barriers to establishing flexible funding because of agency budget requirements or different catchment areas for each agency that served as barriers to collaboration. Future studies of collaboration in systems of care should include an examination of these structural and organizational factors as well as leadership that may foster collaboration or create barriers to collaboration.

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CONTRIBUTING AUTHORS

Mary E. Evans, R.N., Ph.D., F.A.A.N.
College of Nursing, MDC 22, University of South Florida,
12901 Bruce B. Downs Blvd., Tampa FL 33612,
813-974-9112, fax: 813-974-5418, e-mail mevans@hsc.usf.edu

Mary I. Armstrong, M.S.W., M.B.A., Ph.D.
Louis de la Parte Florida Mental Health Institute University of South Florida, 13301
Bruce B. Downs Blvd,. Tampa, FL 33612 Phone 813-974-4601,
fax 813-974-4406, e-mail armstron@fmhi.usf.edu

Symposium

Working Models of Collaboration: Key Components, Strategies and Results

Chair
Katherine E. Grimes

Authors
Melisa D. Rowland
Joseph L. Woolston
Douglas R. Robbins et al.
Katherine E. Grimes

Symposium Introduction

Katherine E. Grimes

As care delivery systems across states and communities struggle to implement new processes which support the added value of partnerships between parents and professionals, and as recognition of the importance of collaboration between system partners (e.g., schools and juvenile justice), increases, there is an emerging need to better define terms, clarify principles and capture results. This symposium features four distinct efforts, including a nationally replicated model, a statewide effort, and two local efforts, to provide coordinated, home and community based care to children and families. By reviewing key components and terminology, comparing overall clinical and administrative strategies, and interpreting the available results, a shared knowledge base can be developed with the potential to offer efficiencies for future efforts and easier transport of essential elements for success.

Follow-Up of Multisystemic Therapy as an Alternative to Psychiatric Hospitalization

Melisa D. Rowland

Introduction & Method

This summary presents findings from two studies that review long-term follow-up findings from a randomized clinical trial comparing multisystemic therapy (MST) modified for use with youths presenting psychiatric emergencies, with inpatient psychiatric hospitalization.

One hundred and fifty-six children and adolescents approved for emergency psychiatric hospitalization were randomly assigned to home-based MST or inpatient hospitalization followed by usual services. Assessments examining mental health symptomatology, out-of-home placement, school attendance, and family relations were conducted at six times over 16 to 22 months.

Results

In the first study (Henggeler, et al., 2003), based on placement and youth-report measures, MST was initially more effective than emergency hospitalization and usual services in decreasing youth symptoms and out-of-home placements and increasing school attendance and family structure. Yet, these differences dissipated by 12 to 16 months post recruitment. Hospitalization produced a rapid, but short-lived, decrease in externalizing symptoms based on caregiver reports.

In the second study (Halliday-Boykins, Henggeler & Rowland, 2003), using semi-parametric mixture modeling, five trajectories were identified based on symptoms over the 16 months following study intake: high-improved, borderline-improved, borderline-unimproved, and subclinical. Membership in unimproved symptom groups was associated with less suicidality, younger age, more youth hopelessness and more caregiver empowerment. Improved symptom group membership predicted long-term decreases in days in out-of-home placements.

Conclusion

Findings from the first study are consistent with earlier evaluations (Henggeler, et al., 1999, Schoenwald, Ward, Henggeler & Rowland, 2000) and suggest that during treatment, MST youths were more likely to be in regular school settings and to live with family members. Yet, these improvements in functional outcomes were not maintained long-term. Across treatment conditions and respondents, youths' psychopathology symptoms improved to a sub-clinical range by 12 to 16 months despite a significant decline in functional outcomes (i.e., school and community placement).

These outcomes generate an important backdrop for the second study, which provides a closer look at the psychopathology findings by evaluating the clinical trajectories of study youths. Importantly, these findings suggest that a substantive proportion of these youths with serious emotional disturbance sustained a high level of symptomatology despite intensive mental health services. The impact of these findings on future research and dissemination efforts will be discussed as well as modifications made to the MST treatment model to serve youths with significant psychiatric impairment (Henggeler, Schoenwald, Rowland & Cunningham 2002; Rowland, Halliday-Boykins & Schoenwald, 2005.)

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Intensive In-Home, Child and Adolescent Psychiatric Services (IICAPS): Development of a State-Wide Service

Joseph L. Woolston

Introduction

Intensive, In-home, Child and Adolescent Service (IICAPS; Woolston, Berkowitz, Schaefer & Adnopoz, 1998) has joined a family of meta-methodologies such as Multisystematic Therapy (MST; Henggler, Schoenwald, Bordun, Rowland & Cunningham, 1998) that provide intensive, in-home intervention as an alternative to more restrictive, institutional-based services. This family of meta-methodologies have in common several factors including manualized treatment that is guided by adherence to operationalized principles, has defined a developmentally and clinically specific population to be served, uses specific evidenced-based treatments (EBTs) within the superstructure of the intervention, and is informed by principles of developmental psychopathology.

IICAPS is differentiated from other members of the family of meta-methodologies by the population that it treats: children and adolescents with severe psychiatric disturbances who are at risk for requiring institutional-based treatment because of the inability of the family and community to meet the child's psychiatric needs. Consistent with the needs and supports for these highest risk children with SED, IICAPS employs a modified medical model in its treatment approach. The two-person IICAPS clinical team is composed of a masters level, license-eligible clinician and a bachelors level mental health counselor. The IICAPS team is supervised weekly by a child and adolescent psychiatrist both in individual supervision and in rounds. Each IICAPS program has a medical director who is a child and adolescent psychiatrist who co-leads the weekly rounds. Also consistent with employing a modified medical model, IICAPS relies on managed Medicaid as the major funding source for clinical services. As part of the reliance of managed Medicaid funding, each IICAPS program has a working partnership with the managed Medicaid companies. This partnership is supported by the mutual desire to prevent the child's requiring a higher, more restrictive and more expensive level of care. The IICAPS team provides three overarching services: (a) psychiatric assessment and services to any and all people in the home, (b) clinically informed intensive care management to connect the family to any and all services that are needed to reduce the risk of the child's being in a higher level of care, (c) and "24/7" mobile crisis emergency services.

IICAPS is an important component of Kidcare, a state-wide reform of mental health services for children and adolescents in Connecticut. As part of the Kidcare reform, each IICAPS program and IICAPS Services (the training and supervising entity for the 16 IICAPS sites), is committed to ongoing system change at multiple levels including individual family functioning, provider service delivery, and state public policy change informed by outcomes data. IICAPS Services is in partnership with the Department of Social Service, which oversees Medicaid, and the Department of Children and Families, which provides child protective services, children's mental health services and juvenile justice. This is a public/private partnership committed to removing the perverse incentives that occur from the compartmentalization of Medicaid funding oversight, mental heath system planning and support, and the delivery of mental health services to the children and families at highest risk. The objective of this summary is to describe the creation and implementation of this state-wide, manualized IICAPS network that employs strategies for maintaining fidelity to the model at case-specific, clinician-specific, program-specific and network-specific levels.

Method

IICAPS evolved from a single program to a 16 site, state-wide network. IICAPS Services employed an incremental, iterative approach to service development. This process began with the development of a comprehensive intensive, in-home psychiatric service that blends medical model precepts with systems-of-care values. Simultaneously, IICAPS Services developed a treatment manual that is informed by several years of clinical and financial experience and by other similar, evidenced-based interventions. After five years of functioning, with preliminary positive outcomes data, IICAPS Services partnered with state agencies and insurance companies to disseminate the IICAPS program on a state-wide basis. IICAPS Services has now developed a strategy for ongoing program evaluation and refinement via layer strategies for adherence fidelity to the IICAPS model. The core of this strategy is the articulation, training and supervision towards a set of clearly defined Principles, Concepts and Tools.

Each of these constructs provides the basis for training, ongoing supervision and quality assurance that set the stage for ongoing outcomes measurement and continuous program refinement. These three constructs of Principles, Concepts and Tools are interconnected but move from more abstract (Principles) to more concrete (Tools). The four Principles include Transparency, Immediacy, Practicality, and Adherence to the Structure of Concepts and Tools. The four Concepts include the definition of the Main Problem, Domains of Strengths & Vulnerabilities, three Phases of Treatment, and the definition of a Tool. The Main Problem is defined as that behavior that puts the child at risk for requiring a higher, more restrictive level of care. The four Domains of Strengths & Vulnerabilities include Child, Family, School, Environment and Other Systems. The Phases of treatment include Assessment & Engagement, Work & Action, and Ending and Wrap-up. Each Phase is defined both by specific activities as well as specific products and achievements. A Tool is defined as a task for the clinical team and family together that is structured by the goal of creating a specific document for a specific purpose at a specific step in a specific Phase of treatment. The Tool achieves four goals simultaneously: engagement, assessment, intervention, and quality assurance/supervision. The Tools include defining the Main Problem, creating the inventory of Strengths & Vulnerabilities in four Domains, the genogram, the Eco-domain Map, the Treatment Plan with goal attainment rating, and a Discharge Service Plan. These strategies for fidelity using Principles, Concepts and Tools are employed at the case treatment level, clinician level, IICAPS program level and the IICAPS network level.

Results and Implications

IICAPS has grown from an intervention for one child to a manualized, state-wide service that can be tested by randomized trials. IICAPS has been disseminated to 16 sites within Connecticut. Two pilot outcomes studies have been completed and one is currently underway as the preparation for a randomized controlled trial. The strategies for maintaining and measuring fidelity to the IICAPS model are the cornerstone of supervision, quality assurance and scientific outcomes studies.

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Home-Based Psychiatric Treatment of Children and Adolescents

Douglas R. Robbins, L. Tweed, B. Fowler, Jay Yoe, W. L. Cook

Introduction

Outcome date are presented from Anchor, a community- and home-based intensive treatment program for children and adolescents with severe emotional disturbance (SED) who are at high risk for out-of-home treatment or placement, compared with similarly-ill children in case management with usual community services. Both the role of parental mental illness and an intergenerational conceptualization of intervention are examined.

Method

Anchor is an intensive outpatient treatment program that works with children, adolescents and their families, at home, in school, and elsewhere as needed, focusing on symptoms and behaviors likely to require the patient to be hospitalized or placed outside the home. The Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1990) was completed at initiation of treatment for 92 children and adolescents, and repeated at the conclusion of the three- to six-month intervention. CAFAS scores were compared with 249 children and adolescents receiving case management with comparable severity on CAFAS scores at the beginning of treatment and repeated assessment after six months. Changes in CAFAS ratings and days of out-of-home placement of the Anchor group are compared with the children and adolescents' case management and usual community treatment. Clinicians recorded the presence of mental illness in the parents or primary caretakers and impressions regarding categories of interaction of the parental illness and the child's development, symptoms, and function. A subgroup of children in Anchor were assessed with the Child Behavioral Checklist (CBCL; Achenbach, 1991) at the beginning of treatment.

Results and Implications

Anchor patients showed significant decreases in total CAFAS ratings and in 5 of 8 domains of outcome, relative to patients of comparable severity receiving case management and usual community treatment. Key elements necessary for change and approaches to engaging psychiatrically ill parents warrent further study. Intensive home-based treatment appears to be effective at decreasing out-of-home placement, improving function, and decreasing symptoms in SED children and adolescents. This intervention appears to be an important component of a system of care for children and adolescents with severe psychiatric illness.

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Collaboration in Action: Sharing Goals, Risks and Outcomes

Katherine E. Grimes

Introduction

The eight original Robert Wood Johnson Foundation (RWJ) Mental Health Services Program for Youth (MHSPY) grants were awarded to encourage new levels of community infrastructure among child-serving entities and increase flexibility for categorical dollars being spent according to disparate mandates (Cole, 1996). In 1998, researchers at Brandeis University completed a comprehensive independent evaluation of multiple MHSPY sites, assessing both the feasibility of the MHSPY program and its impact on service delivery. The evaluation conducted over a five-year period monitored program implementation in each community and resulted in data which demonstrated that MHSPY organized systems of care brought improvements in satisfaction, community based care and care coordination (Saxe, 1999).

Building on the positive system of care results, Washington Business Group on Health and RWJ chose to offer twelve replication-planning grants for child mental health systems of care to link-up with managed care. The Massachusetts-Mental Health Services Program for Youth (MA-MHSPY) was one of the twelve replication grant sites; however it was, and remains, the only site in the country to include physical health care delivery in the model. This report is undertaken in order to revisit this unique Massachusetts pilot five years after it began and identify lessons learned regarding opportunities and challenges in the combined delivery of medical, mental health/substance abuse and wraparound care (Grimes, 2003). MA-MHSPY is self-sustaining financially, being funded entirely from existing juvenile justice, social service, education, health and mental health dollars blended into a designated program cap (Pires, 2002). MA-MHSPY is one of the few MHSPY-replication pilots of the original twelve to survive, therefore it is also important to look at transportable strategies for sustainability that might benefit other system-of-care efforts (Zimmerman, Schwalberg, Botsko, Gallagher & Borzak, 2001).

Method

MA-MHSPY promotes improvement in care delivery via three concurrent levels: (1) strength-based, individualized, child and family support within an intensive, coordinated care planning process, (2) collaborative, area-level, clinical prioritization and resource management, and, (3) shared, state-level, health policy and administrative advocacy. Closely supervised clinical Care Managers work with designated families in a comprehensive fashion and authorize all mental health and substance abuse services, including inpatient care.

The MA-MHSPY program collects data at baseline and every six-months on measures of cost, clinical functioning, service utilization and family and youth satisfaction. Youth outcome data are collected using the Children's Global Assessment Scale (CGAS; Shaffer, 1983) and the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1990). Statistical analyses of individual and aggregate data drawn from clinical and administrative datasets, standardized functional measures, and consumer surveys performed. The care-as-usual reference population is comprised of members of a managed care organization (MCO) with approximately 120,000 commercial and Medicaid insured members. Medical claims data from the MCO were integrated with mental health and substance abuse claims data from the MCO's carve-out vendor to conduct the analyses comparing MHSPY members with this care-as-usual population. Trends are monitored and reported to all stakeholders on a six month basis.

Results

MA-MHSPY has served 141 families since 1998, with a retention rate of 97%. Males make up the majority of enrollees (69%) and 51% of enrollees are children of color. Almost three-quarters of the children (72%) have involvement with two or more state agencies and Special Education in addition to Medicaid. The leading diagnosis, representing 56% of all children enrolled, is Post-Traumatic Stress

Disorder. The next three most prominent diagnoses are, in descending order, Mood Disorders, ADHD, and Conduct/Oppositional Disorders. Clinical results include: (a) significant improvements overall in all areas of clinical functioning, including suicide risk and substance abuse; (b) CGAS scores at twenty-four months show an average improvement of 20% over baseline, and (c).CAFAS scores from baseline to 18 months show improvement of 39%; (a) improved school performance; (b) reduced level of restrictiveness of care; (c) reduced risky behavior in the community; (d)) better relationships at home; and (e) 87% parent satisfaction following program participation.

Administrative results show that: (a) youth enrolled in MA-MHSPY spend a total of 85% of days at home; (b) overall costs, including medical and emergency room costs, are all substantially lower in MA-MHSPY than in the reference population; (c) detailed analysis measuring degree of integration indicates that integrated care is 70% less expensive than usual care for this population; and (d) traditional service use, such as psychiatric hospitalization, continues to decline while non-traditional services now comprise 60% of all service use. MA-MHSPY remains a non-profit, voluntary integrated clinical program in a state of for-profit carve-outs. It has achieved five-year survival as a policy innovation, in that the categorically distinct agencies have chosen to extend the program into three new communities.

Discussion

Consensus-driven collaboration among child-serving agencies, consumers and providers, where shared goals and shared risks yield shared clinical outcomes, can provide a strong foundation for sustainable systems of care. The hypothesized effect modifier in this model is the alignment of mission and purpose across participants, systems and services, or *continuity of intent*. The MHSPY model relies on a three-tier approach to facilitating service delivery improvements for MHSPY enrollees. The model seeks to align the mission and goals across the three levels of shared governance through a state-level steering committee, local community selection and referral teams, and the member level care planning teams.

While the overall program results have been encouraging thus far, opportunities for transport and extension of lessons learned to new settings prompt the need for greater specification of the model in order to maintain fidelity. Added value will be derived from an expanded referral base to gain deeper understanding of which program elements work best, which children benefit the most from what, and where the areas for improvement lie.

CONTRIBUTING AUTHORS

W. L., Cook, Ph.D.
Maine Medical Center, 216 Vaughan Street, Portland, ME 04102-3204

B. Fowler, L.C.S.W.
Maine Medical Center, 216 Vaughan Street, Portland, ME 04102-3204

Katherine E. Grimes, M.D., M.P.H.
Psychiatric Research and Academic Center, Cambridge Health Alliance, 1493 Cambridge St., Cambridge, MA 02139, 617-204-1402, fax: 617-772-5515, e-mail: katherine_grimes@hms.harvard.edu

Melisa D. Rowland, M.D.
Medical University of South Carolina-Charleston, PO Box 250861, Charleston, SC 29425, 843-876-1800, fax: 843-876-1808, e-mail: rowlandm@musc.edu

Douglas R., Robbins, M.D.
207-871-2160, fax: 207-871-6348, e-mail: robbid@mmc.org

L. Tweed, M.D.
Maine Medical Center, 216 Vaughan Street, Portland, ME 04102-3204

Joseph L. Woolston, M.D.
Yale School of Medicine, Child Study Center, 230 South Frontage Road, New Haven, CT 06520-7900, 203-785-7071, fax: 203-785-7402, e-mail: joseph.woolston@yale.edu

Jay Yoe, Ph.D.
Maine Medical Center, 216 Vaughan Street, Portland, ME 04102-3204

Symposium: Examination of Relationships among Service Use, Demographic and Clinical Characteristics, and Outcomes for Children and Families Enrolled in Systems of Care

Chair
Qinghong Liao

Authors
Bhuvana Sukumar et al.
Ann Price et al.
Qinghong Liao et al.

Symposium Introduction

Qinghong Liao

The Center for Mental Health Services' (CMHS) Comprehensive Community Mental Health Services for Children and Their Families Program was designed to serve children with a serious emotional disturbance and their families. Children and families enrolled in the program face numerous challenges and have multiple needs. To meet the diverse needs of the child and family, the systems-of-care programs are required to provide a set of 13 core services identified by Stroul and Friedman (1986) as essential to meet the varying and complex needs of children and their families. In addition, a core value of the program's theory is that a "system of care must be child-centered and family-focused, with the needs of the child and family dictating the types and mix of services provided" (Stroul & Friedman, 1986, p. xxii). Therefore, understanding the functional and clinical characteristics of these children and their families upon their entry into systems of care is one of the critical steps in the assessment of the service needs and planning of the most appropriate services for these children.

This symposium first examined the service delivery at the community level as well as service use at the individual child and family level. In the second paper, the focus was on exploring baseline child and family factors that may impact the type, duration, and amount of services received. The last paper examined the impact of service use on changes in outcomes and how child and family outcomes were related to caregiver satisfaction with services received.

The primary goal of this symposium is to provide a more comprehensive examination of the relationship among demographic and clinical characteristics, service use, and outcomes for children enrolled in systems of care. Findings presented in this symposium can be used to conduct more in-depth analyses in a particular area in the future.

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Service Use Among Children and Families Participating in Systems of Care

Bhuvana Sukumar & Gina Sgro

Introduction

Children and families enrolled in the Comprehensive Community Mental Health Services for Children and Their Families Program face numerous challenges and have multiple needs. To meet the diverse needs of the child and family, the systems of care programs are required to provide a set of 13 core services identified by Stroul and Friedman (1986) as essential to meet the varying and complex needs of children and families. In addition, services are to be provided in the least restrictive and normative environment as is clinically appropriate. It is essential to examine service array, accessibility and service use to understand how the systems-of-care communities are functioning and how well these communities are adhering to the systems-of-care principles. For example, if children in systems of care use more restrictive services and have a lengthy stay in restrictive settings, and if community-based services are underutilized, this may indicate that systems of care may not be functioning at the core-principle level. Such information can be used to improve service delivery and outreach efforts. The purposes of this study were twofold: (a) to assess the service array provided by grant communities and the extent to which these services are accessible to children and families, and (b) to examine the type, amount, duration and location of services received by children and families.

Methods

Sample

Service array and service accessibility data were collected from a group of 23 systems-of-care communities for which complete service array data were available. In addition, data from 84 care coordinators across the 23 systems-of-care communities were analyzed to determine the accessibility of services. Data for service use patterns included a sample of 2,419 children and families who are enrolled in the longitudinal outcome study of the Center for Mental Health Services (CMHS) national evaluation, and for whom six-month service use data were available.

Instruments and Procedures

Information on service array and accessibility were obtained from the systems-of-care assessment component of the CMHS national evaluation through interviews conducted with care coordinators from 23 grant communities. The care coordinator's responses to questions based on service-related topics such as accessibility of services were rated by the interviewers on a 5-point scale, producing a score that describes the grant community's level of accessibility for each item. A score of 5 indicates that *sufficient efforts have been made in that area and the efforts have been effective toward accomplishing the intended goal*. A score of 1 indicates that *little or no effort has been made in the area addressed by the item*. The following analysis examines service array development at each grant community's first and second systems-of-care assessments to determine change over time.

Service use data were obtained from the caregivers using the Multi-Sector Service Contacts (MSSC) Questionnaire. The MSSC captures the types of services children and families received across service locations, the frequency of service contacts, and the caregivers' perception of how well services had met the needs of the child or family. The questionnaire is first administered to caregivers after six months of enrollment in systems-of-care. Subsequent interviews with caregivers on service use are conducted every six months up to 36 months.

Analysis. For assessing service array, the presence or absence of each required service was determined for each assessment of each community, and the percentage of communities providing each service was calculated. For assessing service accessibility, the mean score was calculated for six factors including the time and location of service planning and provision, capacity and length of wait time for non-emergency services, whether services are available in the community, the availability of transportation assistance, and the cost of services.

To explore service use patterns among children and families, four dimensions of service use were examined:

1. The types of service received by children and families such as outpatient (e.g., individual therapy), support (e.g. respite and flexible funds) and inpatient services (e.g. inpatient hospitalization);
2. The location where services were received. The different locations were grouped into two categories: community settings (e.g., mental health clinic) and restrictive settings (e.g., jail);
3. The unit of service received over the six-month period for each service. Units of services were grouped into three categories: (a) low dosage (units of services below the 33rd percentile); (b) moderate dosage (units of service between 33rd and 66th percentile); (c) high dosage (units of service between 67th and 99th percentile); and
4. The duration of services received in the first six months. Duration is divided into three categories: (a) one part (services received only for two of the six months; (b) two parts (services received for four of the six months); and (c) three parts (services received throughout the entire six-month period).

Results

Results indicated that at the time of the first assessment (usually during the second year of grant funding), only 4 of the 13 services were provided by 100% of grant communities. Those services included emergency/crisis, and individual, group, and family counseling. However, by assessment two, seven of the 13 core services were being provided by 100% of communities. These included services listed above plus diagnostic and evaluation, case management, and respite. Further, in almost every case, the percent of grant communities providing a service increased from assessment one to assessment two. Grant communities, on average, scored highest on the measures of cost, location, transportation assistance, and community-based services. However, they scored lower on the convenience of service provision hours to families and the capacity of services to provide for all who need them. The lowest score, overall, was on the length of wait to receive services (see Table 1).

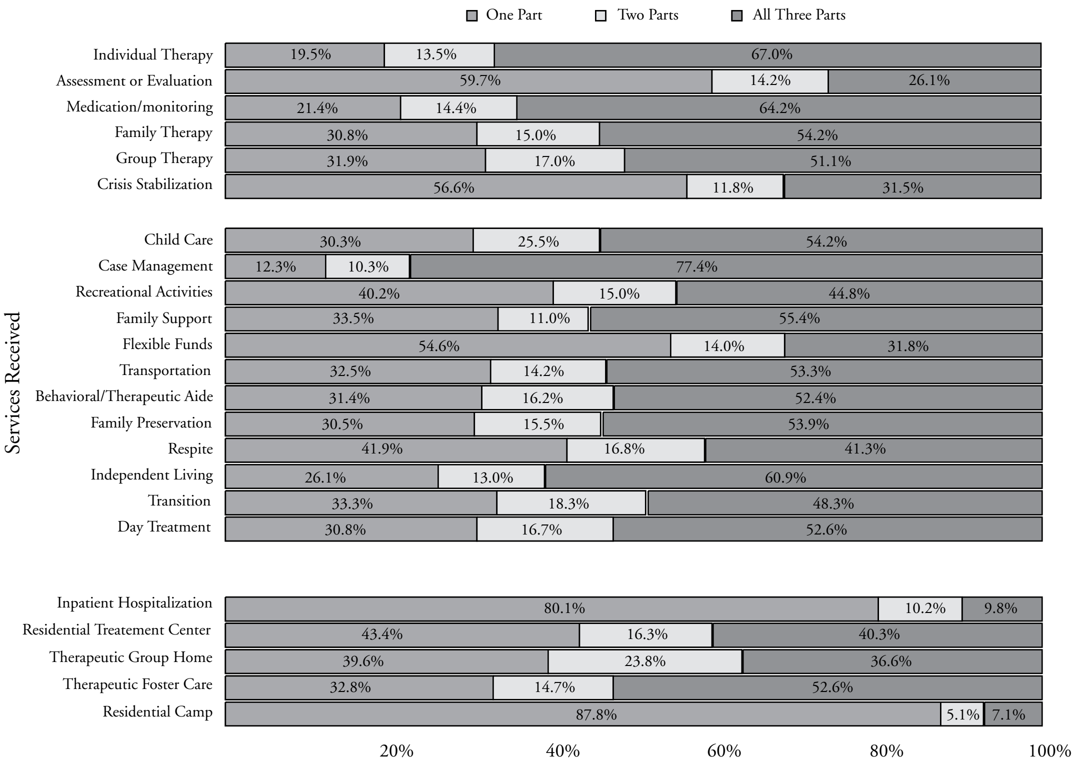
Analysis of service use among children and families indicated that the majority of the children and families ($n = 2{,}442$) received outpatient services such as individual therapy and medication monitoring (62.3%), followed by support services such as case management (76.7%), family support (34.3%), and recreational activities (34.3%).

Table 1
Measures of Accessibility

Measure	*Mean Score*	*Definition*
Cost of Services	4.74	Circumstances under which children and families could not access services due to cost were rare
Location of Services	4.71	Services were provided in a broad range of locations and there was flexibility in terms of arranging service locations
Transportation Assistance	4.49	Transportation assistance was widely available with few problems; it had met the needs of nearly all families
Community-based	4.37	Most services (75 to 95 percent) were provided within the community
Hours of Service Provision	3.71	Services were provided at a wide range of times including evenings and/or weekends with broad flexibility in scheduling
Capacity of Services	3.71	Many services had sufficient capacity such that all children and families who needed them could access them, but more efforts were needed
Length of Wait	2.44	More than half of services had wait times of greater than 1 week; additional services had wait times of 2 weeks or more

Location, duration and dosage of services varied depending upon the types of services received. Data on service use indicated that a large number of children in systems of care received services in the community than in restrictive settings. Mental health clinics and schools were the two most frequently reported locations where services were received, with 81.6% of children ($n = 2{,}060$) receiving services in mental health clinics and 50.5% receiving services at schools. For duration of services, the majority of the outpatient services were received for the entire six months, except crisis stabilization and assessment or evaluations, which were received for shorter periods of time (see Figure 1). The majority of the children received all support services for longer periods (e.g., four to six months), except recreational activities, flexible funds, and respite services. The majority of the inpatient services were received only for a period of two months, except therapeutic foster care, which was received by 52.6% of those receiving the service the entire six months.

Figure 1
Duration of Services Received



Note: Number of children varied from 60 to 1,827.

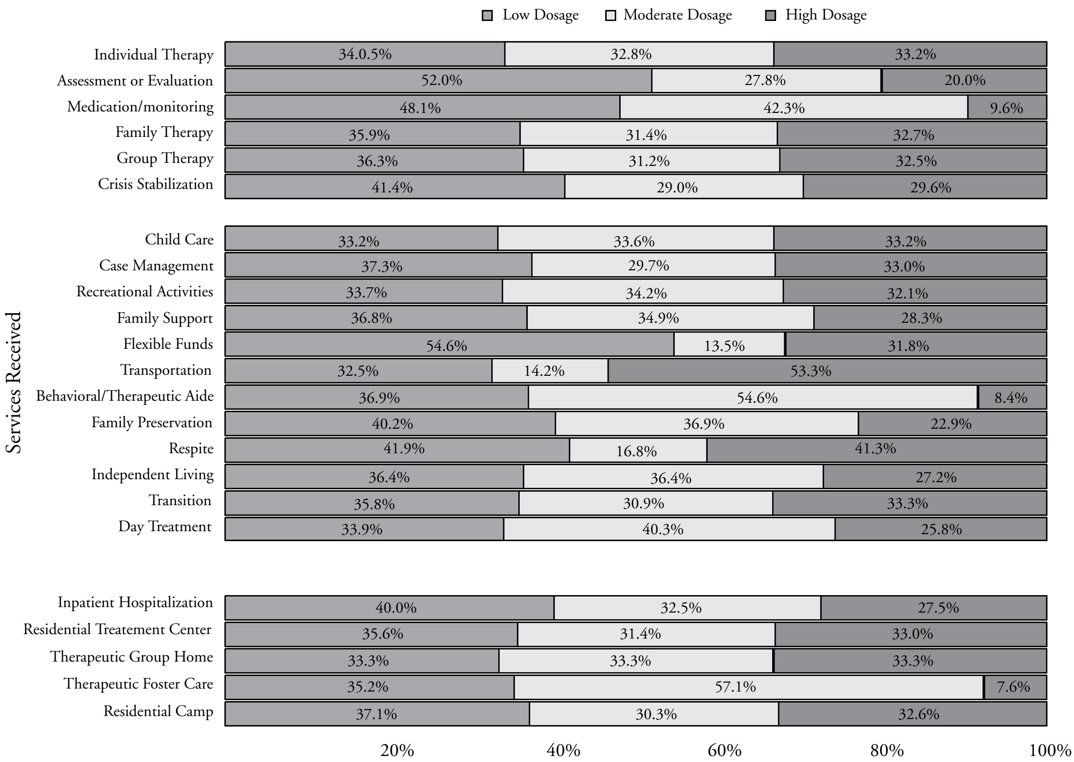
Data analysis on the dosage of services showed that very few children received medication monitoring, behavioral therapeutic aide services and therapeutic foster care services in high dosages, while 53.3% of the children received transportation in high dosages (see Figure 2).

Discussion

An overview of service provision and utilization in systems-of-care communities was presented and the findings from this study provided some glimpses into how systems-of-care communities are functioning with regard to the principles of individualized, community-based, and least restrictive services. The increase in number of services provided from assessment one to assessment two indicates that as systems develop over time and become more mature, a more comprehensive array of services becomes available. Overall accessibility of services was rated as high in all dimensions except the length of wait and capacity of services. Low rating of these two dimensions of accessibility indicates that some of the 23 communities may not have the capacity to provide certain services, and hence may have long waiting lists. This needs to be further explored in order to understand the factors that impact a community's capacity to provide certain services.

To summarize service use patterns, the majority of the services were received for the entire six months, and in low to moderate dosages in community settings such as schools and mental health centers by a large number of children. These findings suggest that systems-of-care communities are functioning at the core principle level by providing a comprehensive array of services and providing them in least restrictive settings. However, these results are based on data from 23 sites, and clearly, a larger sample size is required for future research of this nature.

Figure 2
Dosage of Services Received



Note: Number of children varied from 62 to 1,749.

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Predictors of Service Use Among Children and Families Participating in Systems of Care

Ann Price & Phyllis Gyamfi

Introduction

Children and families in systems of care receive wide arrays of services in different amounts, with varying durations and at multiple locations. In order to understand the differences and similarities in service use patterns, it is important to explore factors that influence the types of services received. Previous studies have shown that demographic factors such as children's age, gender, ethnicity, socioeconomic status, and family risk factors (e.g., the parent having a mental illness, receiving psychiatric treatment), and caregiver strain were related to service utilization (Burns, Angold & Costello, 1992; Farmer, Burns, Angold, & Costello, 1997). However, many studies have not approached this issue from a multidimensional perspective. Some studies looked at demographic and child characteristics, and others examined only family factors. Lambert, Brannan, Breda, Heflinger, & Bickman (1998) concluded from their study that family and child factors were strongly associated with service use and recommended looking at predictors of service use in order to have a comprehensive understanding of the characteristics that influence service use.

This paper will focus on exploring the relative importance of various factors such as demographic, family functioning, child functioning, and clinical factors in predicting service use among children served in systems-of-care programs. The two main research questions are (a): Is there an association between child clinical factors and family characteristics and types of service utilization?, and (b) Are the number of different types of services received, or amount of specific services received, associated with child clinical factors and family characteristics?

Methods

Sample. Participants in this study were drawn from evaluation data from grant communities funded by the Comprehensive Community Mental Health Services for Children and Their Families Program in 1997, 1998, 1999, and 2000 (the sample size for each analysis is different, due to missing data). The mean age of children was 12.5 years. Sixty-seven percent were boys, 45% were White, and more than 64% of families represented incomes at or below the national poverty threshold (DHHS, 2002).

Instruments and procedures. Service data were obtained from the caregivers using the Multi-Sector Service Contacts (MSSC) Questionnaire. Baseline information on child and family characteristics was obtained using the following instruments: the Descriptive Information Questionnaire (DIQ); the Child Behavior Checklist (CBCL; Achenbach, 1991); the Delinquency Survey; the Child and Adolescent Functional Assessment Scale (CAFAS; Hodges, 1990the Caregiver Strain Questionnaire (CGSQ; Brannan Heflinger, & Bickman, 1998), for which higher scores indicate more stress; the Family Resources Scale (FRS; Dunst & Leet, 1987); and the Family Assessment Device (FAD; Epstein, Baldwin, & Bishop, 1983).

The association between child and family characteristics and service types was assessed with separate logistic regression models. Linear regression was used to analyze the effect of child and family characteristics on the number of different types of services and the amount of services (dosage). All models controlled for demographic variables (e.g., age, gender, race/ethnicity, child and family risk factors, and poverty level). Services were grouped into three broad categories: outpatient services, support services, and inpatient services.

Outpatient services included assessment or evaluation, individual, family or group therapy, crisis stabilization, and medication management. Support services included case management, behavioral aide, family support, transportation, and respite care. Inpatient services included residential centers, inpatient hospitalization, therapeutic group home and residential camp.

Results and Discussion

The first research question examined whether there was an association between child clinical factors and family characteristics and types of service utilization. The results are presented in Table 1. Children with higher CAFAS scores (i.e., indicating more severe impairment in functioning) were almost two times more likely to receive outpatient services and inpatient services. Children whose parents reported that they had high externalizing problems on the CBCL were more likely to receive inpatient services. Children with fewer delinquent behaviors were more likely to receive outpatient and support services. Of all family predictors examined (family functioning, caregiver strain, and family resources), family functioning was the only predictor of service types. Specifically, those with poor communication ($OR = .28$) but better affective responsiveness ($OR = 2.78$) were more likely to receive outpatient services. Examining those families who were below the mean on family functioning, the majority received primarily outpatient (95%) and support services (99%) and few (27%) received inpatient services.

The second research question assessed the association between the number of different types of services received and dosage (i.e., the amount of specific services received), and child clinical factors and family characteristics. There were several demographic predictors of the number of different types of services and dosage. The findings are presented in Table 2. Younger children and those with more child and family risk factors were more likely to receive a higher number of different types of services. Children whose families had higher incomes and children with more risk factors were more likely to receive higher dosages of individual therapy. Children with more child risk factors had higher dosages of case management. Children from families with higher incomes were more likely to receive higher dosages of inpatient hospitalization (ß = .18; $p < .05$).

Several child factors were associated with the number of different types of services. Impairment on the CAFAS Community Role scale and the Self-harm scale was associated with a higher number of different types of services. Children with less functional impairment related to Substance Abuse were more likely to have a higher number of different types of services. Children with more internalizing (ß = .14; $p < .001$), externalizing (ß = .09; $p < .05$), and Total problems (ß = .47; $p < .001$) were more likely to receive a greater number of different types of services.

Table 1
Child and Family Predictors of Service Type

	Outpatient Services	*Supportive Services*	*Inpatient Services*
Child Variables			
CAFAS	(*n* = 1,575)	(*n* = 1,430)	(*n* = 1,563)
Total	.39* [1.47]		.43*** [1.53]
CBCL	(*n* = 1,608)	(*n* = 1,460)	(*n* = 1,597)
Internalizing	ns	ns	ns
Externalizing	ns	ns	ns
Total Problems	ns	ns	ns
Delinquency	(*n* = 1,037)	(*n* = 943)	(*n* = 1,031)
	-.10* [.91]	-.15* [.86]	ns
Family Variables			
Family Functioning	(*n* = 1,075)	(*n* =950)	(*n* = 1,066)
Communication	-1.28*[.28]	ns	ns
Affective Responsiveness	1.02*[2.78]	ns	ns
Caregiver Strain	(*n* = 1,588)	(*n* = 1,460)	(*n* = 1,576)
Global Strain	ns	ns	ns
Family Resources	(*n* = 1, 193)	(*n* = 1,098)	(*n* = 1,182)
	ns	ns	ns

Note. Betas are reported with odds ratio in brackets. Sig.= *$p < .05$; ***$p < .001$

Table 2
Demographic Predictors of Number of Different Types of Services and Dosage

Variable	*Number of Different Types of Services (n = 1657)*	*Individual Therapy (n = 1217)*	*Case Management (n = 1213)*	*Inpatient Hospitalization (n = 168)*
Age	β = -.09***	ns	ns	ns
Child risk factors	β = .25***	β = .16***	β = .06*	ns
Family risk factors	β = .07***	ns	ns	ns
Poverty level	ns	β = .07*	ns	β = .18*

Note. Unstandardized coefficients reported. Sig.= *p < .05; ***p < .001

Several family factors were also associated with the number of different types of services received by children and their families. Children whose families had higher objective strain and children from families whose caregivers reported lower functioning were more likely to report a higher number of different types of services.

Child functional impairment and internalizing and externalizing problems were used to predict three specific types of services: individual therapy, case management, and inpatient hospitalization. The findings are presented in Table 3. Higher functional impairment on the Self-harm scale was associated with more individual therapy, and lower functional impairment related to Substance Abuse was associated with more individual therapy. Impairment on the Thinking scale was associated with more inpatient hospitalization. Internalizing behavior problems were associated with more individual therapy and externalizing behavior problems were associated with more inpatient hospitalization. There were no significant predictors for case management.

Caregiver strain and family functioning were also used to predict these three specific types of services. Children from families whose caregivers reported lower family functioning were more likely to report higher dosages of case management. Caregiver strain did not predict any of the three specific types of services examined.

Table 3
Child and Family Predictors of Dosage

Child Variables	*Individual Therapy*	*Case Management*	*Inpatient Hospitalization*
CAFAS	(*n* = 1,149)	(*n* = 1,141)	(*n* = 155)
Self-harm	**.07* (*F*= 4.8)**	ns	ns
Substance abuse	**-.07* (*F*= 5.6)**	ns	ns
Thinking	ns	ns	**.18* (*F*= 4.2)**
CBCL	(*n* = 1,180)	(*n* = 1,174)	(*n* = 1,597)
Internalizing	**.07* (*F* = 4.6)**	.06* (*F* = 4.6)	ns
Externalizing	ns	ns	**.20* (*F* = 5.5)**
Total Problems	ns	ns	ns
CGSQ	(*n* = 1,170)	(*n* = 1,161)	(*n* = 159)
(Four Subscales)	ns	ns	ns
Family Functioning	(*n* = 1,144)	(*n* =1,135)	(*n* = 1,56)
FAD Average	ns	**-.08* (F = 7.0)**	ns

Note. Unstandardized coefficients reported. Sig.= *p < .05; ***p < .001

Conclusion

The findings suggest that the types and amount of services that children in systems of care use are associated with child clinical factors, family functioning and strain, and demographic characteristics. Specifically, children with poorer functioning were nearly two times more likely to receive outpatient and inpatient services. Younger children and those with more child and family risk factors tended to receive a greater number of different types of services. Higher functional impairment and internalizing problems were associated with more individual therapy and externalizing problems were associated with more inpatient hospitalization.

One of the key goals of systems of care is to deliver services that address the unique needs of each individual child and family. It is important that we understand how these unique characteristics influence the types of services that children and families receive. For example, because having more risk factors tended to influence the number of different services received, efforts should focus on reducing the number of risk factors by providing support to families. Understanding how child and family characteristics influence service utilization can help develop care plans and help sites target scarce resources.

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Relationship among Service Use, Outcomes, and Caregiver Satisfaction

Qinghong Liao & Bhuvana Sukumar

Introduction

The primary purpose of the longitudinal outcome study of the national evaluation is to assess changes over time among children and families participating in the Comprehensive Community Mental Health Services for Children and Their Families Program. This paper explores the relationship between service use patterns and change in child and family outcome to gain a better understanding of the impact of service use on these outcomes. Defining effectiveness of service use is a complex issue, and it is important to examine effectiveness of service use at the individual child and family level (Farmer, 2000). Answers to the following questions were explored: (a) What were the impacts of service use on outcome changes, (b) What was the relationship between services received and caregiver satisfaction, and (c) What were the relationships among service use, outcomes, and caregiver satisfaction?

Methods

Participants. Participants included in the analysis were children 5 to 18 years old enrolled in the longitudinal outcome study of the national evaluation of the Comprehensive Community Mental Health Services for Children and Their Families Program. These children were served in the 45 grant communities funded in 1997, 1998, 1999, and 2000. While 2,419 children had information on service use in the first six months of their enrollment, the number of children included in analyses varied because of missing data.

Measures. Service use data were obtained from the caregivers using the Multi-Sector Service Contacts (MSSC) Questionnaire. Outcome measures included in the analyses were school performance based on caregiver report information collected on the Educational Questionnaire (EQ), delinquent behaviors based on youth self-report information collected on the Delinquent Survey (DS), child behavioral and emotional problems based on caregiver report information collected on the Child Behavior Checklist (CBCL; Achenbach, 1991), caregiver strain based on caregiver report information collected on the Caregiver Strain Questionnaire (CGSQ; Brannan Heflinger, & Bickman, 1998), and caregiver satisfaction based on information collected on the Family Satisfaction Questionnaire–Abbreviated (FSQ-A).

Analysis strategies. To examine the impact of service use on child and family outcomes, the following dimensions of service use were included in the analyses:

- Types of services (e.g. individual therapy, family support, and inpatient hospitalization),
- Dosage of services, i.e., the unit of service received over the six-month period for each service. Units of services were grouped into three categories: (a) Low dosage (units of services below the 33rd percentile); (b) moderate dosage (units of service between 33rd and 66th percentile); (c) high dosage (units of service between 67th and 99th percentile), and
- Duration of services received in the first six months. Duration is divided into three categories: (a) one part (services received only for two of the six months, (b) two parts (services received for four of the six months), and (c) three parts (services received throughout the entire six-month period).

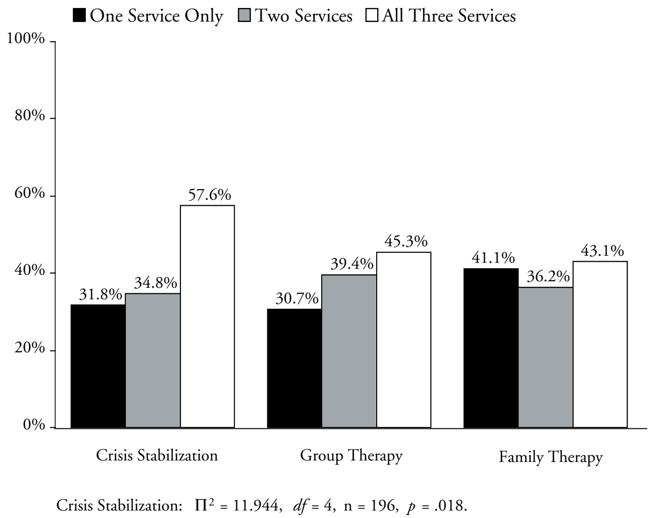
For the purposes of the analysis, the Reliable Change Index (RCI; Jacobson & Truax, 1991) was used to measure changes over time in both the child's behavioral and emotional problems (as measured by the CBCL, with higher scores indicating more severe problems) and the caregiver's strain (as measured by the CGSQ, with higher scores indicating a higher level of stress). The RCI measures whether the magnitude of the improvement is clinically meaningful and can be used to categorize each individual's change into three groups: *improvement, no change,* or *deterioration*[1]. Chi-square analyses were conducted to explore the relationship between service use and outcome changes, as well as between outcome changes and caregiver satisfaction. All analyses focused on the first six months of enrollment in systems of care.

Results

Analyses of the relationship between service use and child and family outcomes indicated that the impact of service use on outcomes varied by the receipt, duration, and dosage of services, depending on which services a child or family received. For some services, what made a difference in the rate of change was the actual receipt of the service, while for others it was the duration or amount (dosage) of service received. For example, children who received case management between intake and six months were more likely to have a decrease in the number of delinquent acts committed during the same period of time (42.6% vs. 30.9% of those not receiving the service; $\Pi^2 = 9.878$, $df = 2$, $n = 915$, $p = .007$), yet neither the dosage nor the duration of case management service had an impact on the changes in delinquent behaviors. However, for crisis stabilization, group therapy and family therapy, the duration of these services made a difference in the rate of change in delinquent acts (see Figure 1). For all three services, children receiving these services throughout the entire six-month period (all three parts) were the most likely to experience a decrease in delinquent acts (although the differences in decrease for family therapy were not significant).

Many children were facing multiple challenges in different areas upon entry into systems-of-care programs. They were not doing well in school, and they had experienced school suspensions, detention, and expulsions. Further, they had been involved with or were at risk for involvement with the juvenile justice system and had used substances such as cigarettes, alcohol, and marijuana. Therefore, it is important to assess how many of these children made improvements across these multiple domains at the same time, and the impact of service use on such improvement. On the one hand, analysis of improvement in school performance, decrease in delinquent acts, and decrease in marijuana use revealed that of the 284 children with complete data at both intake and six months, 67.3% showed improvement in at least one area, with 37.3% improving in one area, 23.6% improving in two areas, and 7.4% improving in all three areas. Furthermore, when examining service use between intake and six months for these children, it was found that children who received case management were almost twice as likely to improve in two or more areas than those who did not receive the service.

Figure 1
Percentage of Children with a Decrease in Number of Delinquent Acts from Intake to 6 Months: Differences by Service Durations of Crisis Stabilization, Group Therapy, and Family Therapy



Crisis Stabilization: $\Pi^2 = 11.944$, $df = 4$, n = 196, $p = .018$.
Group Therapy : $\Pi^2 = 20.405$, $df = 4$, n = 361, $p = .000$.
Family Therapy: $\Pi^2 = 12.991$, $df = 4$, n = 373, $p = .011$.

On the other hand, compared to children who received case management, children who did not receive this service were much more likely to show no improvement in any one of the three areas (29% vs. 47%, respectively; see Figure 2). Duration for medication treatment monitoring had an impact on these changes. Thirty-six percent of the children receiving this service throughout the entire six-month period showed improvement in two or more areas, in contrast to 20% of those receiving the service in only one part of the six-month period ($\Pi^2 = 14.262$, $df = 4$, $n = 131$, $p = .007$).

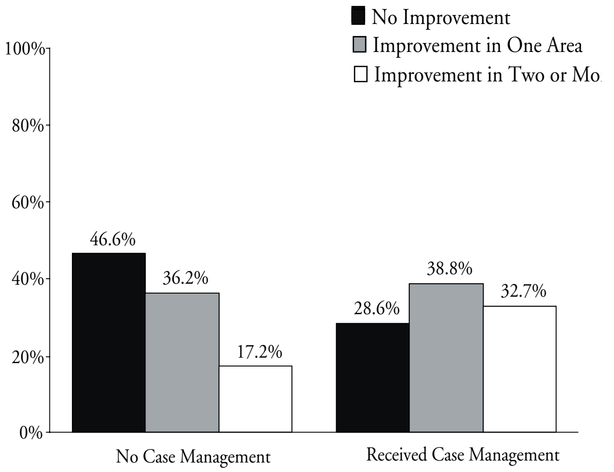
In addition to the relationship between service use and outcome changes over time, it was found that outcome changes had an impact on caregivers' overall satisfaction with their children's progress. Godley, Fiedler, and Funk (1998) recommended looking at satisfaction in conjunction with outcome data to understand how satisfaction is related to improvements in emotional and behavioral problems. Given that systems of care are designed to address family needs as well as child needs, it is expected that improvement in both child and family outcomes is associated with caregiver satisfaction. Results indicated that caregivers of children whose emotional and behavioral problems improved[‡] from intake to six months reported greater satisfaction (77%) than those whose children maintained the same level of emotional and behavioral problems (58%) or actually worsened (48%; $\Pi^2 = 57.116.479$, $df = 4$, $n = 1{,}473$, $p = .000$). Furthermore, when improvement in child outcomes was accompanied by a decrease in caregiver strain, the level of satisfaction with child's progress was even higher (83%), while the group of children and families experiencing no change or deterioration in both emotional and behavioral problems and caregiver strain reported the lowest level of satisfaction (53% see Figure 3).

Discussion

The above results indicated that type, duration, and dosage of services had an impact on child and family outcomes. In some cases, dosage and duration made more significant impacts on changes in outcomes than type of services received. Therefore, service needs should be addressed not just by whether children received services, but also by whether they were receiving the sufficient amount of services over an appropriate period of time. Additionally, measuring the effectiveness of a service delivery approach needs to take into consideration the dosage and duration of services, rather than limiting analysis to the type of services received. Results also suggest that service coordination is important for simultaneous improvement in multiple child outcomes.

Satisfaction with services was related to child and family outcomes. While the findings on the relationship between satisfaction and changes in child and family outcomes were not surprising, they did emphasize the importance of interpreting satisfaction with services within the context of child and family outcomes as meaningful. Some important differences in level of satisfaction may be hidden when not linked to child and family outcomes. These findings can be used to aid future service planning and identify reasons for satisfaction or dissatisfaction and specific areas of improvement for different groups.

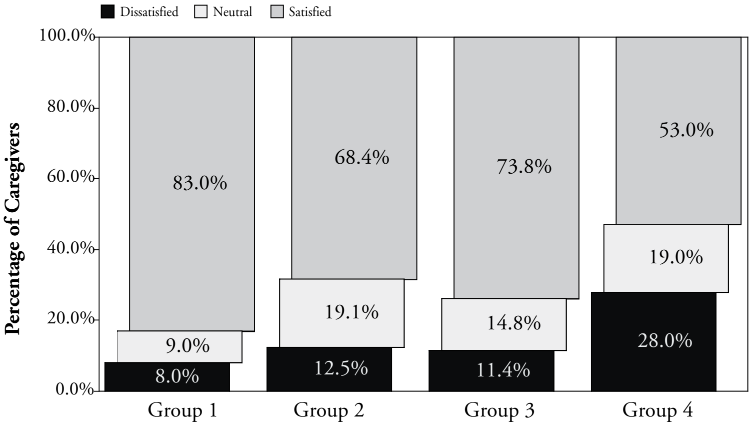
Figure 2
Improvement in Multiple Areas* from Intake to 6 Months by Receipt of Case Management



[a] Improvement in multiple areas included improvement in school performance, decrease in the number of delinquent acts, and improvement in marijuana use. $\Pi^2 = 8.154$, $df = 2$, $n = 254$, $p = .017$.

Author notes: [1]For the purpose of this analysis, the Reliable Change Index (RCI) was used to indicate improvement, no change, or deterioration in child outcome as well as family outcome from intake to six months.

Figure 3
Caregiver Overall Satisfaction by Changes in Outcomes



Group 1: Improvement in child outcome, decrease in caregiver strain
Group 2: Improvement in child outcome, no change/increase in caregiver strain
Group 3: No change/deterioration in child outcome, decrease in caregiver strain
Group 4: No change/deterioration in child outcome, no change/increase in caregiver strain

$\Pi^2 = 95.081$, $df = 6$, $n = 1{,}437$, $p = .000$.

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CONTRIBUTING AUTHORS

CONTRIBUTING AUTHORS

Phyllis Gyamfi, Ph.D.
Senior Scientist; phyllis.gyamfi@orcmacro.com

Qinghong Liao, M.S.
Technical Director, qinghong.liao@orcmacro.com

Ann Price, Ph.D.
Senior Data Analyst; ann.w.price@orcmacro.com

Gina Sgro, B.S.
Research Associate; gina.m.sgro@orcmacro.com

Bhuvana Sukumar, Ph.D.
Senior Data Analyst; bhuvana.sukumar@orcmacro.com

All Authors: ORC Macro, 3 Corporate Square, Suite 370, Atlanta, GA 30329,
404-321-3211 fax: 404-321-3688

A Latent Class Analysis of Presenting Problems for Children Enrolled in Systems of Care

Qinghong Liao
Robert L. Stephens

Introduction

The Comprehensive Community Mental Health Services for Children and Their Families Program was designed to serve children with a serious emotional disturbance and their families. Children to be enrolled in this Program must meet one or more target population criteria specified in the Grant for Application (GFA), including age, diagnosis, at risk of out-of-home placements, disability, need for multi-agency involvement, and severity of clinical status. The Program uses a set of systems-of-care principles as the guidance for implementation of service delivery to children and families. A core value of the program's theory is that a "system of care must be child-centered and family-focused, with the needs of the child and family dictating the types and mix of services provided" (p. xxii, Stroul and Friedman, 1986). Therefore, understanding the functional and clinical characteristics of these children is one of the critical steps in the assessment of their service needs. There are multiple indicators of the functional and clinical status of these children at baseline, one of which is the problems and challenges these children were facing when they enrolled in the Program. The information on children's presenting problems at baseline is a key indicator of their service needs because these are the problems that led to their referral to services. Identification of differences in the patterns of these presenting problems and examination of factors impacting these differences will help in the effort to provide individualized services to meet the needs of children and their families.

To examine different patterns of presenting problems, a Latent Class Analysis (LCA) was conducted, and presenting problems were used as indicators to derive class membership. LCA is a statistical method for finding subtypes of related cases (latent classes) from multivariate categorical data. For example, it can be used to find distinct diagnostic categories given presence/absence of several symptoms, types of attitude structures from survey responses, consumer segments from demographic and preference variables, or examine subpopulations from their answers to test items. The results of LCA can also be used to classify cases to their most likely latent class.

The primary purpose of this study is to examine the different patterns of presenting problems among children referred for system-of-care services. The secondary purpose of the study is to explore the impact of age and gender on these presenting problem patterns.

Methods

Participants. Participants included in the analysis were children birth to 21 years old ($N = 8{,}943$) enrolled in the cross-sectional descriptive study of the national evaluation of the Comprehensive Community Mental Health Services for Children and Their Families Program. These children were served in the 45 grant communities funded in 1997, 1998, 1999, and 2000. Sixty-eight percent of the children were male, 52% were White, non-Hispanic, 24% were Black, non-Hispanic, and 55% had an annual family income below $15,000 per year. Average age of the children was 12.4 years, with 27.8% of the children between the ages of 7 and 11 years, 33.4% between 12 and 14 years, and 31.5% between 15 and 18 years.

Measures. The measure used in the analysis was the caregiver report of children's presenting problems leading to referral to the program. Caregivers can report up to 33 different types of presenting problems, covering a wide spectrum of domain areas, such as being sad, being physically aggressive, having attention difficulties, having substance abuse problems, being a runaway, having academic problems, being truant, and having poor self-esteem. This piece of information was collected as part of the Descriptive Information Questionnaire (DIQ) administered to the caregivers at baseline.

Analysis strategy. Latent Class Analysis (LCA) was conducted to identify groups of children with different patterns of presenting problems. LCA was conducted using the Mplus software (version 2.12; Muthén & Muthén, 1998; 2002). The LCA approach used in this study is exploratory in nature; that is, the analysis started with fitting a 1-class model (independence) to the data, followed by a two-class model, a three-class model, and continuing until a model was found to present the best fit to the data, relative to the other models examined (McCutcheon, 1987). This approach is analogous to the traditional cluster analysis; however, the LCA approach does not assume linearity and normal distribution of data or homogeneity of variances, which is an advantage given that data collected in real world setting often do not meet the above assumptions. Model-data fit based on the analysis was examined and the best model was identified using the combination of the following goodness-of-fit measures: Akaike Information Criterion (AIC), the Bayesian Information Criterion (BIC), and Sample Size Adjusted Bayesian Information Criterion (SSABIC). In addition, the entropy value, which measures classification accuracy, was examined as a secondary consideration in the final selection of the best-fit model.

Once the best-fit model was selected and the class membership determined, the differential probabilities of having a particular problem within each class were examined. This probability is referred to as *conditional probability* (i.e., the probability of having a particular problem conditioned on the class membership). For the purpose of interpreting the LCA results, the probability of 0.5 (50%) was used as the cut-off for indicating whether children in a particular class had a high probability of having a particular problem, and the probability of 0.3 (30%) was used to indicate a moderate probability.

For preliminary analysis of the impact of age and gender on presenting problem class membership, a separate LCA with covariates was conducted. Analytic procedures were similar to those described above in the LCA without covariates.

Results

Results from the LCA indicated that the 10-class solution had the best model fit for the data (see Figure 1 for the selected statistics of the BIC, SSABIC, and Entropy for 2-class model to 12-class model). For the 10-class model, the values of AIC, BIC, and SSABIC were all lower than those in the previous models. The values of the above statistics started to deteriorate with the 11-class model, although the BIC value for the 12-class model was lower than that for the 10-class model. However, considering all statistics examined and under the principle of parsimony, we concluded that the 10-class model was the best fit for the data. These ten classes of presenting problems suggested that children entered systems of care with a wide variety of presenting problem patterns (see Figure 2 for a brief description of each class's characteristics).

Preliminary results of the LCA with covariates yielded the following findings: (1) adding age and gender as separate covariates to the LCA improved model fit (as indicated in values for AIC, BIC, and SSABIC, see Table 1) and classification (as indicated in the Entropy value); (2) adding age and gender together as covariates improved model fit, but not classification; and (3) age as a covariate had a bigger impact on model fit and classification than gender. Furthermore, when gender was used as a covariate, it was found that boys were more likely to be in Classes 3, 5, 6, relative to Class 10; girls were more likely to be in Classes 2, 8, 9, relative to Class 10. When age was used as a covariate, older children were more likely to be in Classes 2 to 5 and Classes 7 to 9, relative to Class 10.

Discussion

The high number of classes (10) indicated the complexity of presenting problem patterns. Some children had both internalizing and externalizing problems, while others had problems in either internalizing or externalizing domains, and still others had co-occurring problems with academic problems, police contacts and substance abuse. Differences in presenting problem patterns indicated that children served in systems of care were facing a wide range of problems when they enrolled in

Figure 1
Selected Latent Class Statistics Comparison

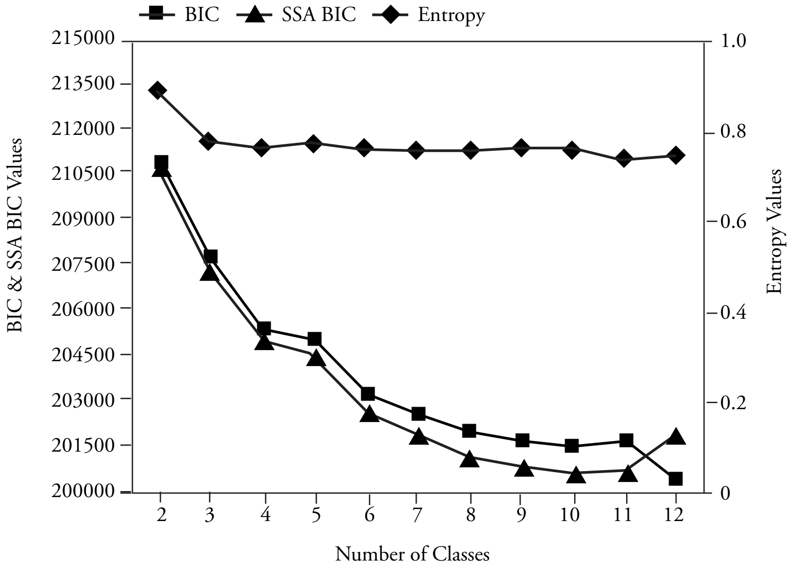

Figure 2
Brief Description of the Ten Classes of Presenting Problems

Class 10	**Low level of problems** in most areas Indication of some non-specified areas of problems
Class 9	**Depressed, no ADHD, non-agressive** Academic problems, poor peer interaction and self-esteem
Class 8	**Suicidal** Highest probablility in suicide ideation & suicide attempts of all classes, sadness & physical aggresssion
Class 7	**Police contacts and non-compliant, no ADHD** Second most likely to have substance abuse problems
Class 6	**ADHD** Moderate probabilities of non-compliance, academic problems, poor peer interaction
Class 5	**Aggressive** Non-compliant
Class 4	**Poor self-esteem and depressed, with ADHD &academic problems**
Class 3	**Aggressive and ADHD** Non-compliant
Class 2	**Academic problems, non-compliant** Highest probability of police contact and substance abuse of all classes
Class 1	**Severe problems** in most areas, **Internalizing** as well as **Externalizing** Low probability of substance abuse and truancy

Table 1
Latent Class Analysis with Covariates

	BIC	*SSABIC*	*Entropy*
10-class without covariate	**201625.04**	**200547.76**	**0.738**
10-class with gender as a covariate	201420.38 ↓	200314.49 ↓	0.739 ↑
10-class with age as a covariate	200772.79 ↓	199666.91 ↓	0.743 ↑
10-class with gender and age as covariates	200176.87 ↓	199042.40 ↓	0.734 ↑

the services. This finding emphasizes the importance and relevance of the system-of-care principle of providing individualized services to children with serious emotional disturbance to meet their unique needs and challenges. In addition, service planning should take into consideration factors associated with presenting problem patterns, such as age or gender. Differences in presenting problem patterns for children upon their entry into systems of care also suggest that trends in change across time should be examined according to the patterns of problems for which children were referred to systems of care. It may be that certain services provided under systems of care meet the needs of some children better than other services, depending on the types and mix of the problems children were facing.

Future research can build on findings in the current study to further explore the following related areas: (a) more in-depth examination and better understanding of the impact of age and other types of covariates on latent class membership, (b) analysis of the relationship between baseline clinical status (e.g. symptomatology) and these presenting problem classes, (c) exploration of the differences and similarities in service use patterns across these presenting problem classes, and (d) examination of the differences and similarities in outcome change over time across presenting problem classes.

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CONTRIBUTING AUTHORS

Qinghong Liao, M.S.
Technical Director, 404-321-3211 fax: 404-321-3688,
e-mail: qinghong.liao@orcmacro.com

Robert L. Stephens, Ph.D., M.P.H.
Technical Director, 404-321-3211 fax: 404-321-3688,
e-mail: robert.l.stephens@orcmacro.com

Both authors: ORC Macro, 3 Corporate Square, Suite 370, Atlanta, GA 30329

Variations in Experiences of Systems of Care: An Exploratory Analysis of Respondent Types

Natalie Henrich
Phyllis Gyamfi
Gina Sgro

Introduction

Two of the guiding principles of systems of care are that "children with emotional disturbances should receive services that are integrated, with linkages between child-serving agencies and programs" (Stroul & Friedman 1986; pp. xxiv), and that families of children with emotional disturbances should be fully involved in the planning and delivery of services (Stroul & Friedman, 1986). Consequently, all systems of care should be a collaboration of the efforts and opinions of people from a broad spectrum of backgrounds. Within systems-of-care communities, collaboration should occur, at the very least, among core child-serving agencies (i.e., mental health, juvenile justice, education, child welfare and public health), grant-funded staff, service providers, family representatives, and caregivers. Since all of these participants must work together as an integrated entity, they are more easily represented as a homogenous system rather than as a mosaic in which diverse individuals and agencies function together yet retain distinct identities, perspectives and experiences. Whether systems are well functioning or not is often determined by the integrated network of participants. However, rarely is it specified from whose perspective systems integration claims are made. The system-of-care assessment of the Comprehensive Community Mental Health Services for Children and their Families Program (CMHS) provides an opportunity to explore whether different respondent types perceive and experience systems of care differently.

This exploratory analysis considers whether participants' experiences in systems of care vary according to their role in the system. Examining role-specific variation is important for interpreting results about the functioning and success of systems of care and provides a tool for making adjustments within systems that target the needs of specific subgroups of participants. When examining results on the aggregate level, variations may cancel each other out, thus obscuring elements of a system that are experienced positively and negatively by different respondent types. More broadly, considering this variability may improve our understanding of what is happening within systems of care and discrepancies in experiences among system-of-care participants.

The interviews described here were conducted with seven respondent types. The questions gauged respondents' experiences with, and perceptions of, different aspects of systems of care from both the infrastructure and service delivery levels. The findings revealed that for certain aspects of systems of care, perceptions varied by respondent type. However, most aspects of systems of care were perceived similarly by all types of system participants.

Methods

System-of-care assessment (SOCA) interviews conducted in 41 communities funded by the Comprehensive Community Mental Health Services for the Children and their Families Program during fiscal year 2003 as part of the national evaluation of the program were examined. This exploratory analysis was based on semi-structured interviews conducted by site-visitors with the following respondent types: (1) representatives from core agencies, (2) project directors, (3) representatives from family organizations, (4) intake workers, (5) case managers, (6) direct service delivery staff, and (7) caregivers. At each site, the number of respondents of a particular type varied from 1 to 4.

Eight system-of-care principles were assessed within the SOCA. These principles are: family focus, individualized services, cultural competence, degree of interagency collaboration, coordination and collaboration, accessibility, community based services, and least restrictive services. Restricting questions to those that were answered by three respondent types, responses were analyzed for similarities and differences by respondent type. Fifteen questions representing eight system-of-care principles satisfied the selection criterion. For each question, the number of respondents of a particular type ranged from 38 to 135.

Interview responses were rated by site visitors from 1 (*lowest*) to 5 (*highest*), reflecting the extent to which the principle addressed by the question was implemented in the system of care. Scores for each question were aggregated across all communities by respondent type. Using the aggregated data, the following were calculated by respondent type: (1) mean score, (2) standard deviation, and (3) percent of respondents who scored a principle's implementation as *high* (4 - 5), *average* ($3 < x < 4$) or *low* (1 - 3). Higher scores corresponded to more positive experiences with, or perceptions of, the system of care. Analysis of Variance (ANOVA) was conducted to compare scores for each question across respondent types, and Tukey post-hoc tests were calculated to determine which respondent types were most likely to vary from each other.

Results

Mean scores for all questions fell in the average to high range (i.e., 3 - 5), across all respondent types, with the exception of family representatives' rating of communities' efforts to target outreach to specific cultural groups (see Table 1). Overall, scores tended to be homogeneous across respondent types (Table 1; Note: scores in Table 1 are not Bonferroni adjusted). Using Bonferroni adjusted *p*-values, 11 out of 15 questions (73%) had no significant variation across respondent types, whereas the remaining four questions (27%) had at least one respondent type that differed from at least one other type. The three principles reflected in the questions that have respondent type variability were family focus, collaboration and coordination, and accessibility.

For the family focused question pertaining to treatment of family members by other governing body participants, family representatives rated family member's treatment significantly lower than agency representatives $F(2, 188)$, = 13.49; $p < .001$, Bonferroni adjusted.

With regard to collaboration and coordination within systems of care, respondent types disagreed on the extent to which efforts to coordinate service planning and service provision are effective. Care coordinators rated the effectiveness of efforts to coordinate service planning significantly lower than caregivers, $F(2, 261) = 6.34$, $p < .05$, Bonferroni adjusted, and service providers rated the effectiveness of efforts to coordinate service provision significantly lower than either caregivers or care coordinators $F(2, 348) = 11.86$, $p < .001$, Bonferroni adjusted.

Lastly, agency staff perceived services as less accessible than caregivers, with respect to length of time between referral and first service contact, $F(2, 194) = 11.95$, $p < .05$, Bonferroni adjusted.

Conclusions

The findings indicate that while there are some differences across respondent types in perceptions of how well some system-of-care principles are implemented in system-of-care communities, overall, all respondent types view the principles as being implemented moderately to highly effectively. This suggests that, for the most part, participants in systems of care perceive systems similarly. Based on the questions examined in this analysis, when there is a difference in perception across respondent types, family members (i.e., family representatives and caregivers) are more likely to be the outlier than other respondent types. However, family members' perspectives are not consistently more positive or negative than those in other roles. Given that there are variations in perceptions of some aspects of systems of care by respondent type, considering the perspectives of all types of system-of-care participants may be necessary in order to fully understand how the system is experienced.

Table 1
Mean Scores and Distribution of Responses by System-of-Care Principle and Respondent Role

				*Percent^*		*Unadjusted*
Principle	*Respondent Role (n)*	*Mean* (SD)*	*High*	*Avg*	*Low*	*p-Value*
Family Focused						
Family members are involved in the governing body.	Project director (38)	4.64 *(1.09)*	92.7	0.0	7.3	0.63
	Agency rep (97)	4.60 *(1.04)*	90.8	0.9	8.3	
	Family rep (50)	4.44 *(1.25)*	87.9	3.0	9.1	
Family members are treated well by governing body participants.	Project director (38)	4.54 *(0.65)*	90.2	9.8	0.0	0.00
	Agency rep (101)	4.86 *(0.39)*	98.2	1.8	0.0	
	Family rep (50)	4.22 *(1.16)*	84.8	4.5	10.6	
Family members regularly attend governing body meetings.	Project director (38)	5.00 *(0.00)*	100.0	0.0	0.0	0.06
	Agency rep (101)	4.72 *(0.78)*	91.7	4.6	3.7	
	Family rep (50)	4.88 *(0.59)*	98.5	0.0	1.5	
Service planning process emphasizes family involvement.	Care coordinator (114)	4.55 *(0.54)*	96.5	3.5	0.0	0.02
	Service provider (49)	4.23 *(1.08)*	81.1	11.3	7.5	
	Caregiver (108)	4.21 *(1.25)*	78.9	7.3	13.8	
Individualized						
Service planning process involves children/youth.	Care coordinator (111)	4.09 *(1.16)*	81.6	6.1	12.3	0.23
	Caregiver (84)	3.90 *(1.40)*	75.2	11.9	12.8	
	Service provider (46)	3.73 *(1.22)*	62.3	26.4	11.3	
Culturally Competent						
Outreach efforts are targeted at specific cultural groups.	Project director (38)	3.03 *(1.05)*	36.6	34.1	29.3	0.19
	Family rep (59)	2.64 *(1.40)*	36.4	22.7	40.9	
Interagency						
Public child-serving agencies routinely participate in service planning.	Care coordinator (113)	3.95 *(0.94)*	70.2	21.1	8.8	0.33
	Caregiver (98)	4.06 *(1.47)*	79.8	3.7	16.5	
	Service provider (48)	4.25 *(0.93)*	81.1	13.2	5.7	
Collaborative and Coordinated						
Efforts to coordinate service planning have been effective.	Care coordinator (114)	3.63 *(0.99)*	50.9	38.6	10.5	0.00
	Caregiver (98)	4.14 *(1.15)*	78.9	8.3	12.8	
	Service provider (50)	3.92 *(0.94)*	67.9	20.8	11.3	
Efforts to coordinate service provision have been effective.	Care coordinator (112)	4.24 *(0.78)*	80.7	17.5	1.8	0.00
	Caregiver (102)	4.25 *(1.05)*	79.8	11.9	8.3	
	Service provider (135)	3.70 *(1.03)*	63.1	24.8	12.1	
The program has kept supervisors and line staff well informed of program operations.	Core agency rep (104)	4.10 *(1.20)*	73.4	16.5	10.1	0.40
	Project director (40)	3.90 *(0.91)*	63.4	31.7	4.9	
	Service provider (52)	4.23 *(1.24)*	77.4	11.3	11.3	
Accessible						
Efforts to ensure that services in the array have sufficient capacity are effective.	Agency rep (97)	3.48 *(1.02)*	54.1	33.9	11.9	0.10
	Project director (41)	3.70 *(0.71)*	53.7	39.0	7.3	
	Family rep (56)	3.23 *(1.29)*	51.5	25.8	22.7	
The enrollment process is not cumbersome for the family.	Caregiver (108)	4.63 *(0.77)*	90.8	6.4	2.8	0.33
	Service provider (50)	4.43 *(0.99)*	86.8	5.7	7.5	
	Intake worker (42)	4.48 *(0.78)*	83.3	14.3	2.4	
The time between referral and first service contact is minimal.	Caregiver (108)	4.27 *(1.10)*	77.1	14.7	8.3	0.00
	Intake worker (42)	3.86 *(1.39)*	71.4	9.5	19.0	
	Service provider (45)	3.42 *(1.51)*	62.3	13.2	24.5	
Community based						
Efforts to minimize the need for children and families to leave the community for services are effective.	Project director (41)	4.10 *(0.73)*	70.7	26.8	2.4	0.06
	Family rep (59)	3.70 *(1.06)*	60.6	28.8	10.6	
	Agency staff (100)	3.68 *(0.99)*	58.7	32.1	9.2	
Least restrictive						
Efforts to reduce the number of children in settings more restrictive than necessary are effective.	Project director (40)	3.79 *(0.81)*	58.5	31.7	9.8	0.46
	Family rep (55)	3.55 *(1.03)*	59.1	28.8	12.1	
	Agency rep (100)	3.72 *(0.98)*	58.7	31.2	10.1	

Note:s *Scores are on a scale of 1 (*low*) to 5 (*high*).
^ Range of scores: 4.0 - 5.0 = High; 3.0 < *M* < 4.0 = Average; 1.0 - 3.0 = Low

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CONTRIBUTING AUTHORS

Natalie Henrich, Ph.D., M.P.H.
e-mail: Natalie.J.Henrich@orcmacro.com

Phyllis Gyamfi, Ph.D.
e-mail: Phyllis.Gyamfi@orcmacro.com

Gina Sgro
e-mail: Gina.M.Sgro@orcmacro.com

All authors:
ORC Macro, 3 Corporate Square, NE, Suite 370, Atlanta, GA 30329,
404-321-3211, fax: 404-321-3688

Provider Attitudes and Practices in System-of-Care and Non-System-of-Care Communities

Brigitte Manteuffel
Liz S. Grossman
Bob Stephens

Introduction

In a review of the systems-of-care reform movement over two decades, Stroul (2002), notes that it remains unclear how improvements in infrastructure and service delivery at the system level are implemented by providers at the practice level, and in what way those practices impact clinical outcomes for children and families with serious emotional disturbance. Similarly, Rosenblatt (1998) observed that individual provider practices that may most directly impact child and family outcomes have received little attention.

The attitudes and practices of providers who interact with children with serious emotional disturbance and their families can considerably impact ways in which families engage with services, support treatment regimens, and experience satisfaction with services. The extent to which providers involve families, respect their knowledge about service decisions, and are culturally competent are important factors in family service experiences, and potentially child outcomes (Friesen & Kruzich, 2000; Walker, 2001). Engaging with families and utilizing information that families contribute to treatment planning can influence how services are delivered, and attitudes toward families can influence caregivers' decisions to access mental health services (Pumariega & Glover, 1998), and to continue service involvement for their children and families (Orrell-Valente, Pinderhughes, Valente, & Laird, 1999).

Adherence to systems-of-care principles that promote individualized services, focus on the family, accessibility of services, and cultural sensitivity and competence varies by setting and by provider. Although many professionals understand that the paradigm has changed from one that is predominantly child-focused to one in which the family is considered as a whole, implementation of these principles varies (Singh, Wechsler, & Curtis, 2000), and there is a clear disconnect between ideals and practices (Mohr, 2000).

The Comprehensive Community Mental Health Services for Children and Their Families Program of the Center for Mental Health Services (CMHS) is intended to implement system change that reflects the principles of systems of care at the infrastructure and service delivery levels. The extent to which individual providers practice in manners consistent with these principles may be impacted by their own attitudes, their training, institutional constraints on their practices, and other factors. The comparison study conducted in two CMHS-funded communities in Nebraska and Alabama and two matched communities in the same states provided the opportunity to assess provider practices in funded and non-funded settings.

Methods

A Provider Attitudes and Practices Survey (PAPS) was developed to assess the extent to which the attitudes and practices of child-serving providers (e.g., mental health service providers, juvenile justice employees, special education teachers, and child welfare case workers) in systems of care and matched comparison communities were consistent with system-of-care principles. The PAPS contains 10 Likert-scaled items to assess attitudes, 10 scaled items to assess practices, and demographic and training questions. The survey was initially mailed to 738 providers across the four communities identified through a snowball sampling approach in November 2002. Of these, 28 were undeliverable and were not replaced, yielding a total of 710 providers who received the survey. The Dillman (2000) method for administering surveys by mail was implemented, and included prenotification, subsequent survey mailing, a reminder postcard, follow-up mailing to non respondents, and a final letter and survey sent by priority mail to non-respondents. A $5 gift card was included with the survey mailing and was attached to the enclosed letter. In total, 435 providers returned completed surveys (an overall 61% response rate). Response rates varied somewhat by community (44 - 78%) and provider type (53 - 66%). Internal consistency reliability of the attitude scale was Cronbach's alpha = .85, and that of the practice scale was alpha = .86.

Results

Nebraska. Providers in the system of care and the comparison community (each community is a service region spanning 22 counties) who completed the survey included 64 child mental health service providers, 18 juvenile justice staff, 72 child welfare direct service staff, and 82 special education teachers, with a similar percentage of each type of provider completing the survey in each community. Providers in the two communities were similar in gender (83% female) and most were White (system of care: 98% and comparison: 96%); however, providers in the comparison community were better educated as a group with 37.1% completing a master's degree or higher as compared to 26.7% in the system of care, $\chi^2 = 19.88$, $df = 6$, $p < .001$. Special education teachers had been employed in their current service system longer ($M = 9.8$ years in both communities) than child welfare workers ($M = 5.5$ years) or mental health providers ($M = 5.2$ years) in the system of care, and had been employed longer than mental health providers ($M = 5.2$ years) in the comparison community. In the system of care, providers who had been employed for less time had attitudes ($r = -.22$, p = .009) and practices ($r = -.24$, p = .005) that were more consistent with systems-of-care principles.

Providers' ratings of attitudes and practices consistent with system-of-care principles did not differ between the two Nebraska communities, with mental health providers and child welfare workers in both rating their attitudes and practices as more consistent with systems-of-care principles than special education teachers. Attitudes and practices were more highly correlated among mental health staff ($r = .84$) and child welfare ($r = .59$) in the system of care than in the comparison community ($r = .52$; $r = .43$), and educators in the comparison community showed higher correlation of attitudes and practices ($r = .60$) than in the system of care ($r = .48$).

Juvenile justice staff in the comparison community were more likely to endorse the assessment and incorporation of culture in both their attitudes and practices than those in the system of care; mental health providers were more likely to assess culture in the comparison community; and child welfare staff in the system of care were more likely to plan meetings with children and families at times that did not interfere with other activities. The greater incorporation of culture into services in the comparison community may, in part, reflect the greater population of American Indians in the service region comprising the comparison community. Special education teachers, employed longest within the systems, were much less likely to describe their attitudes or practices as collaborative, family focused, drawing on child or family strengths, considering culture, or making services accessible, than mental health and child welfare staff.

Alabama. Providers in the system of care and the comparison community who completed the survey included 45 child mental health, 47 juvenile justice, and 45 child welfare direct service staff and 62 special education teachers, with a significantly higher percentage of juvenile justice staff completing the survey in the system of care, $\chi^2 = 8.44$, $df = 3$, $p = .04$. Providers in the two regions were similar in their gender (system of care: 82% female; comparison community: 84% female) and their educational level (Master's degree or higher in the system of care: 47.7%; in the comparison community: 58.8%), with about 40% African American, and about 57% White in each community. Special education teachers ($M = 11.3$ years employed) and juvenile justice staff ($M = 13.3$ years) had been employed in their current service system longer than child welfare workers ($M = 4.3$ years) or mental health providers ($M = 4.5$ years) in the system of care, and juvenile justice staff ($M = 16.3$ years) had been employed longer in their current system than mental health staff ($M = 4.4$ years), special education teachers ($M = 8.7$ years), and child welfare staff ($M = 8.8$ years) in the comparison community. In the system of care, providers who had been employed for less time had attitudes ($r = -.35$, $p < .001$) and practices ($r = -.40$, $p < .001$) more consistent with system-of-care principles.

Provider ratings of attitudes and practices as consistent with system-of-care principles did not differ between the two Alabama communities. In both communities, child welfare staff scored highest in attitudes and practices that were consistent with system-of-care principles. In the system of care, mental health providers and child welfare staff rated their attitudes as more consistent with system-of-care principles than juvenile justice staff or special education teachers, and gave higher ratings to their practices than juvenile justice staff. In the comparison community, only child welfare staff differed significantly from special educators in attitudes, and from juvenile justice staff in their practices. Attitudes and practices were more highly correlated among mental health staff ($r = .79$) in the comparison community than in the system of care ($r = .37$), and among child welfare staff in the system of care ($r = .42$) than in the comparison community ($r = .18$).

Providers in the comparison community were slightly more likely to report that they considered child strengths when developing service plans, with juvenile justice staff slightly more likely to consider child strengths in developing plans and special education teachers more likely to consult with staff from other agencies; however, mental health providers in the system of care were more likely to believe that they should assess culture and incorporate child and family needs in service provision.

Discussion

In total, 435 providers completed the survey, representing providers across child-serving sectors in each community. Although providers did not differ in their attitudes and practices between paired communities, providers did differ in both attitudes and practices by provider type, and years worked within a service system was negatively correlated with attitudes and practices.

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CONTRIBUTING AUTHORS

Brigitte Manteuffel, Ph.D.
Principal Investigator, 404-321-3211, fax: 404-321-3688;
e-mail: Brigitte.A.Manteuffel@orcmacro.com

Liz S. Grossman, M.P.H.
Project Manager, 404-321-3211, fax: 404-321-3688,
e-mail: Elizabeth.S.Grossman@orcmacro.com

Bob Stephens, Ph.D.
Senior Project Manager, 404-321-3211, fax: 404-321-3688,
e-mail: Robert.L.Stephens@orcmacro.com

All authors: ORC Macro, 3 Corporate Square, Suite 370,
Atlanta, GA 30329

Characteristics of Children Referred to Systems-of-Care vs. Usual Care

Katherine E. Grimes
Brian Mullin
Jacquelyn Subberra
Patricia Kapunan

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Introduction

One of the underlying principles behind systems-of-care development is that there will be an accompanying cultural shift among providers and consumers, with highly coordinated care and wraparound supports becoming the "new normal" as a way to support high-risk children to remain in their homes and communities (Saxe & Cross, 1999; Cole, 1996). Transitions to systems-of-care processes have been done in relatively controlled settings (i.e. Fort Bragg, Westchester county) with overall population characteristics reported as synonymous with the study population (Bickman, 1996; Meridian Consulting, 1999). In contrast, a unique, integrated children's mental health system of care, the Mental Health Services Program for Youth (MHSPY), was piloted in two Massachusetts cities, each of which continued to operate their usual care delivery systems (Pires, 2002; Zimmerman, Schwalberg, Botsko, Gallagher, & Borzsak, 2001). This report summarizes specific demographic and clinical profile information, based on chart reviews, for both the systems-of-care MHSPY study cohort and a reference *usual care* cohort. Similarities and differences between the two cohorts are analyzed to determine characteristics that appear predictive for referral to a system of care.

Methods

After obtaining IRB approval, two cohorts were selected. MHSPY (Site 2) includes all MHSPY enrollees between March 1998 and March 2002. MHSPY enrollees must be covered by Medicaid, in the age range of 3-18 years, reside within Cambridge or Somerville, and be assessed as at-risk for out-of-home placement, including a CAFAS score greater than 40 (Grimes, 2003). Usual Care (UC; site 1) was a reference cohort from a large health care delivery setting in the same community, with children matched with MHSPY enrollees for Medicaid status, age and residence, and who had at least one outpatient or inpatient mental health encounter between March 1998 and March 2002. Data requests yielded charts for 107 usual care clients, and 73 MHSPY enrollees. A Chart Review Tool (CRT) was developed by a team of MHSPY and community based clinical research collaborators through a series of meetings over a period of nine months. It was constructed to capture information regarding clinical status, diagnosis, medications, service utilization, basic demographic data, and details of past medical, family, and social history, including Massachusetts state agency involvement. The CRT was installed on laptops, so the reviewers could enter the information directly into an electronic format; to preserve confidentiality, a unique numerical study ID was created for each cohort member.

Results

Initial comparison of chart review summary data indicates that the usual care population—theoretically encompassing the breadth of child mental health symptomatology in the community, with no eligibility criteria necessary to access services—was unexpectedly equivalent to the group identified as needing referral to a special systems of care in terms of age, gender, and ethnicity. Some clinical features, such as Violence Toward Others, Witness to Violence, and History of Head Trauma were also reported in comparable numbers between the two cohorts. Family history of mental illness was slightly higher in the usual care cohort, while rates of family members with substance abuse were slightly higher in the system of care cohort (see Figure 1).

Other aspects of the record, however, showed wide divergence between the two groups: those referred to the system of care with intensive wraparound services were more likely to be male and more likely to be children of color. Though the systems-of-care youth were more likely to be over 16 years old, none were enrolled in school past the 10th grade. They were 30% more likely to have family members on psychotropic medication and twice as likely to have family members who had committed suicide or homicide compared to the usual care cohort. The systems-of-care youth were twice as likely to report sexual abuse, nearly twice as likely to use substances, and more likely to report suicidal and homicidal ideation (see Figure 2). These youth were three times as likely to be involved with the courts or juvenile

Figure 1
Reported Family History

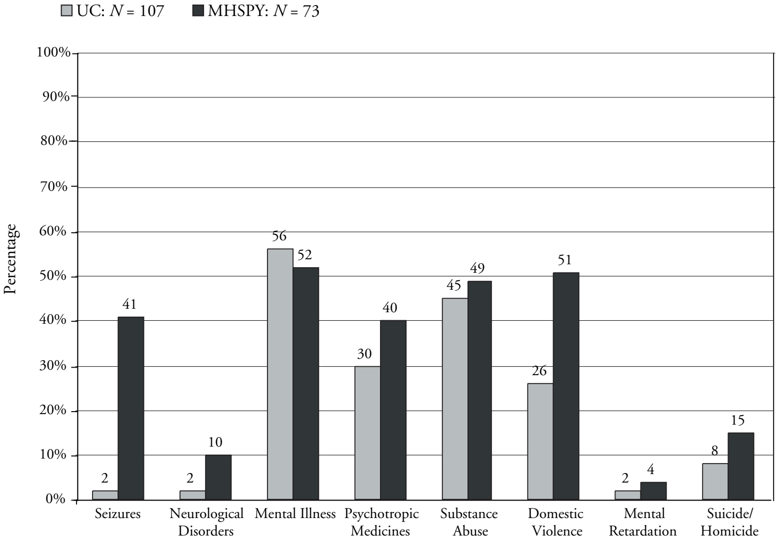
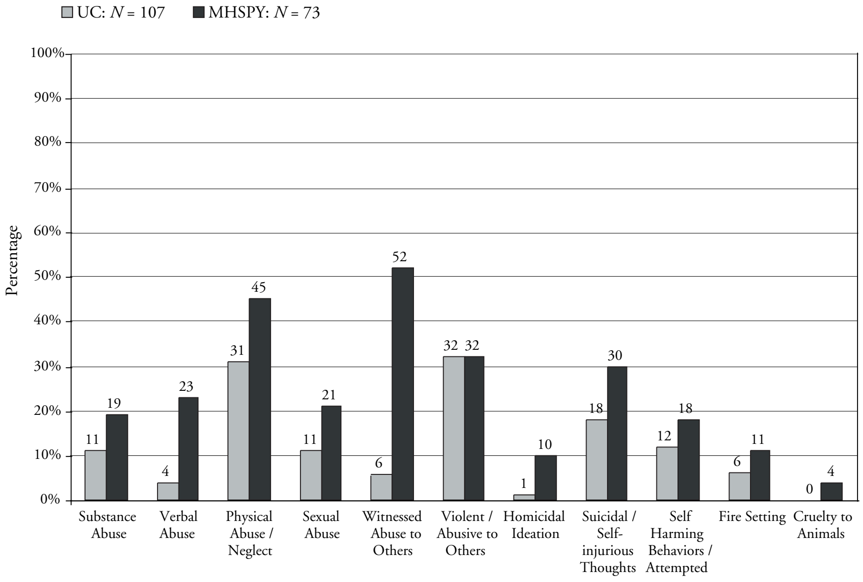
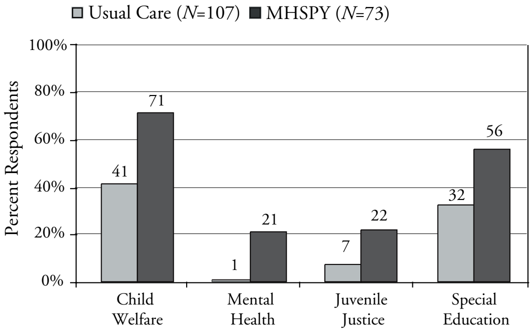


Figure 2
Reported Past Psychiatric History



justice and over twenty times more likely to be involved with the Department of Mental Health than the usual care cohort (see Figure 3). Further, these systems-of-care youth were two times as likely to have PTSD, more likely to be psychotic, and had been placed two or more times out of the home, over three times more often than the youth in usual care.

Figure 3
Reported Past Agency Involvement



Conclusion

This preliminary analysis indicates that the presumed "healthier" population of children, those who are not selected for referral to the intensive system-of-care intervention, still have remarkably high rates of mental illness (56%) and substance abuse (45%) in family members (Figure 1). The chart review findings indicate 32% of usual care youth demonstrated violent behavior toward others and 31% were reportedly physically abused and/or neglected (Figure 2). However, despite this adversity, these youth present with much milder clinical symptoms, are more likely to have been living at home and remain at home, and have little or no state agency involvement. In contrast, the MHSPY systems-of-care youth had experienced significantly higher rates of domestic violence or trauma and had been unable to be maintained at home or in the community prior to referral.

While further analysis is underway to better refine our understanding of these patterns, it appears that a combination of higher levels of trauma, as well as other possible factors which may reduce resilience, are associated with a level of symptomatology that stands out in the schools and community and leads to referral to the highest level of intensive services available outside of a residential placement or hospital. As access to systems of care, such as MHSPY, becomes more widespread, it will be important to track what determines who is referred for these services, and how the enrolled subpopulation compares or contrasts with the general child mental health population. Such information will support increasing precision in the types of interventions offered and the measurement processes used for reporting results.

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CONTRIBUTING AUTHORS

Katherine E. Grimes, M.D., M.P.H.
Principal Investigator, 617-204-1402, fax: 617-772-5515,
e-mail: katherine_grimes@hms.harvard.edu

Brian Mullin, B.S.
617-772-5682, fax: 617-772-5515, e-mail: brian_mullin@nhp.org

Jacquelyn Subberra, L.I.C.S.W.
781-321-6608, fax: 617-772-5515, e-mail: jacquelyn_subberra@nhp.org

Patricia Kapunan, M.D./M.P.H. candidate
e-mail: patricia.kapunan@tufts.edu

All authors: Psychiatric Research & Academic Center, Cambridge Health Alliance,
1493 Cambridge Street, Cambridge, MA 02139

Symposium

The Link Between Process and Outcomes: The Dawn Project Experience

Chair
Eric R. Wright

Authors
Knute I. Rotto
Eric R. Wright et al.
Jeffrey A. Anderson et al.
Eric R. Wright et al.

Symposium Introduction

Systems of care are expected to produce positive outcomes for the children and families that participate; however, few studies have examined the link between program processes and outcomes in a system of care. This symposium presents three studies that, as a whole, empirically link the processes of an established care system called the Dawn Project to child and family and system-level outcomes. Results from the first study suggest that both child and family factors and the structure of the service system are related to successful completion of child and family team treatment goals. Findings from the second study indicate that having a system of care influences children social services, leading to the emergence of core systems-of-care principles within the community. The third study supports an association between service utilization and costs and the probability of successful completion within the framework of a managed care environment, suggesting that clinical outcomes are not necessarily compromised by the constraints of a managed care environment.

Predicting Success in a System of Care

Eric R. Wright, Harold Kooreman & Jeffrey A. Anderson

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Introduction

By design, systems of care draw youth and families from traditional youth and family-social service agencies into a single, integrated system of care (Stroul & Friedman, 1986). Because of the focus on the integration of services for youth and their families, the population served in many systems of care is diverse and heterogeneous. Service coordination teams often are used as the principal mechanism to ensure the care that youth and families receive is tailored to their individual needs (Stroul, 1996; Glisson, 2000). While some research has suggested that this approach is generally effective (e.g., Anderson, Wright, Kooreman, Mohr & Russell, 2003), bringing together youth and families with such heterogeneous clinical needs and backgrounds presents numerous challenges to systems of care functioning. Moreover, the impact of this complex case mix on system of care operation is not well understood. Thus, in an effort to better understand the conditions under which this approach is particularly effective, we examine the influence of demographic, diagnostic, and clinical characteristics on the likelihood that youth enrolled in a system of care are discharged having successfully met their treatment goals.

Background

Initiated in 1997 by a grassroots consortium of state and local agencies and service providers, the Dawn Project in Indianapolis, Indiana provides a system of care dedicated to integrating and coordinating services for youth and families served in two or more children's social service systems (i.e., special education, mental health, juvenile probation, child welfare; Anderson et al., 2003). As in many systems of care, the Dawn Project utilizes service coordination or *child and family teams* (CFTs) to develop individualized treatment plans and ensure that needed services are obtained, coordinated, and directed toward common goals for enrolled youth and their families. Youth can be referred to the Dawn Project from multiple systems, including child welfare, juvenile justice, education, and mental health.

Since its inception, a key question for local policymakers has been whether this system of care is appropriate and effective with all groups of youth and families. Local stakeholders maintain that significant differences exist in the needs and issues prominent in their respective clienteles and suggest these differences may impact the Dawn staff's ability to facilitate positive change. As part of an ongoing longitudinal evaluation of the Dawn Project, the research team examined demographic, clinical, and referral source characteristics of a sample of youth who have completed the project in order to better understand the influence that these background characteristics have on the likelihood of successful completion. For the purposes of this study, *success* was defined as graduation from the program when all members of the CFT agreed that the treatment plan goals had been met. Leaving the program for any other reason—because one or more CFT members feel the program is not working, the family moves away, or the child "ages out" (or is otherwise administratively removed)—was considered to be non-successful completion.

Method

The data for this study come from the Dawn Project Evaluation Study (DPES). The DPES is an ongoing study that includes both in-depth, longitudinal interviews with families and youth enrolled in the project and analyses of clinical and service-related information available through the Dawn Project's electronic charting system, The Clinical Manager (TCM). This analysis examined correlates of success by focusing on the first 140 youth for whom both interview and outcome data were available. Using these data, evaluation personnel coded the demographic characteristics, the referral source, presenting symptoms, diagnoses, and the final program outcome disposition of participating youth (i.e., successful or non-successful completion).

Demographic and Referral Characteristics. The majority of the sample was either African-American/bi-racial (35.7%) or Caucasian males (31.4%). African-American/biracial females comprised 19.3% of the study sample, while Caucasian females made up the remaining 13.6%. The average age in the sample was 12.56 years (*SD* = 2.74). As noted, most young people are referred to the program from four primary systems. The largest percentage of young people in the current sample entered the Dawn Project through the Marion County child welfare system (40.7%). The juvenile justice system provided the next largest group of referrals (38.6%), followed by the mental health system (10.7%) and the school system (10.0%) (see Table 1).

Presenting Symptoms and Diagnoses. Symptom data at enrollment (i.e., the presenting challenges that led to a youth's referral to the Dawn Project) were obtained from two sources: interviews with youth caregivers, and TCM. Combined, these two sources provided 57 possible presenting symptoms, which were collapsed into seven broader categories: behavioral/psychological concerns; violence/abuse-toward others, suicide/self-injury, conduct problems, school problems, family problems, and victim of abuse. This variable, (i.e., presenting symptoms), was coded as the presence or absence of symptoms in each of the seven categories for each child in the sample. The most commonly reported symptoms included conduct-related problems (92.9%), school-related problems (71.4%) and family-related problems (65.0%).

In addition, DSM-IV diagnosis at intake was obtained from the TCM. In order to aid analysis, diagnoses were collapsed into six categories: affective/psychotic disorders, attention-deficit disorders, conduct-based disorders, mental retardation/developmental disorders/learning disabilities, reactive stress disorders, and other disorders. The presence or absence of diagnosis in each category was recorded for the youth in the sample. The most commonly reported diagnoses were conduct-based disorders (46.4%), affective/psychotic disorders (45.0%), and attention-deficit disorders (41.4%).

Table 1
Study Sample Demographics and Referral Characteristics Care (*N* = 140)

		Child Welfare		*Juvenile Justice*		*Education*		*Mental Health*	
		(n = 57)		*(n = 54)*		*(n = 14)*		*(n = 15)*	
		n	(%)	*n*	(%)	*n*	(%)	*n*	(%)
Males	Minority	20	(35.10)	20	(37.00)	9	(64.3)	1	(6.70)
	Caucasian	14	(24.60)	17	(31.50)	4	(28.6)	9	(60.00)
Females	Minority	14	(24.60)	9	(16.70)	1	(7.10)	3	(20.00)
	Caucasian	9	(15.80)	8	(14.80)	0	(0.00)	2	(13.30)
		M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Age		12.06	3.11	13.38	2.13	11.62	2.11	12.41	3.16
Symptom Category		*n*	(%)	*n*	(%)	*n*	(%)	*n*	(%)
	Beh/Psych	36	(63.20)	21	(38.90)	10	(71.40)	12	(80.00)
	Violence/Abuse to Others	23	(40.40)	35	(64.80)	9	(64.30)	10	(66.70)
	Suicide/Self-injury	14	(24.60)	15	(27.80)	6	(42.90	9	(60.00)
	Conduct Problems	49	(86.00)	53	(98.10)	13	(92.90	15	(100.00)
	School Prob	35	(61.40)	37	(68.50)	14	(100.00	14	(93.30)
	Family Prob	46	(80.70)	32	(59.30)	4	(28.60)	9	(60.00)
	Victim of Abuse	35	(61.40)	28	(51.90)	3	(21.40)	9	(60.00)
Diagnostic Category		*n*	(%)	*n*	(%)	*n*	(%)	*n*	(%)
	Affective/Psych	26	(45.60)	20	(37.00)	9	(64.30)	8	(53.30)
	Attention-Deficit	25	(43.90)	22	(40.70)	5	(35.70)	6	(40.00)
	Conduct-Based	24	(42.10)	30	(55.60)	3	(21.40)	8	(53.30)
	MR/DD/LD	11	(19.30)	8	(14.80)	2	(14.30)	4	(26.70)
	Reactive Stress Disorders	15	(26.30)	8	(14.80)	0	(0.00)	1	(6.70)
	Other Diagnoses	6	(10.50)	7	(13.00)	0	(0.00)	1	(6.70)

Program Disposition. The outcome for each young person's disenrollment was obtained from TCM. The outcomes for the present analysis were collapsed into two categories: discharge due to meeting treatment goals and discharge due to all other reasons.

Analysis. Logistic regression analysis was used to examine whether any of these variables, demographic characteristics, symptom categories, diagnostic categories, or referral source, predicted successful or unsuccessful program disposition.

Results

Overall, the majority of youth (68.6%) leave the Dawn Project having successfully completed the CFTs' treatment goals. Three variables, age, referral source, and diagnosis were found to significantly predict program disposition (see Table 2). Specifically, youth who are younger at enrollment in the Dawn Project are more likely to disenroll from the Dawn Project having completed their treatment goals. Additionally, when compared with the child welfare referral source, young people referred from either juvenile justice or education are less likely to exit the Dawn Project having successfully met their treatment goals. Diagnosis at enrollment also predicts program outcome. Young people with a diagnosis in the Mental Retardation/Developmental Disability/Learning Disability (MR/DD/LD) category were more likely to be discharged as having successfully completed their treatment goals. On the other hand, young people with either an attention-deficit disorder or a disorder in the "other" category were less likely to complete their treatment goals (see Table 2).

Table 2
Logistic Regression Analysis of Successful Completion of the Dawn Project

	OR	*OR*	*OR*	*OR*
Demographics				
Race (non-White)	0.62	0.62	0.47	0.43
Gender (Female)	0.86	0.73	0.88	0.88
Age at Enrollment	0.86	0.84*	0.77*	0.74**
Referral Sources[a]				
Juvenile Justice	0.38*	0.30*	0.31*	0.20**
Education	0.15**	0.12**	0.80**	0.04***
Mental Health	0.86	0.69	0.45	0.38
Symptom Categories				
Behavioral/Psychological		0.43		0.41
Violence/Abuse Toward Others		1.11		1.10
Suicide/Self-Injury		1.98		1.42
Conduct Problems		0.63		1.17
School Problems		1.69		2.63
Family Problems		1.21		0.82
Victim of Abuse		1.11		0.79
Diagnostic Categories				
Affective/Psychotic Disorders			1.02	0.92
Attention Deficit Disorders			0.32*	0.28*
Conduct Disorders			1.66	1.55
MR/DD/LD			5.24*	5.59*
Reactive Stress Disorders			0.61	0.59
Other Diagnoses			0.12***	0.09**
Log Likelihood	-78.65	-75.83	-67.00	-64.00
Overall χ2	17.00*	22.64	40.29***	46.29***
Nagelkerke R^2	0.10	0.13	0.23	0.27

* $p \le .05$; ** $p \le .01$; *** $p \le .001$

[a] Comparison category is "Child Welfare" referrals.

Discussion and Conclusion

The clinical goal of the Dawn Project is to develop individualized service plans for all participating youth that accommodate their individual needs and these analyses suggest that a number of important factors predict success in the program (see Table 2). First and most important, younger children are more likely to successfully complete the treatment goals set by the CFTs. Indeed, the predicted probability of successful completion for a youth entering the Dawn Project at 8 years of age is 92%, but drops to 52% for a 16 year old. This has important implications for early intervention.

Clinically, youth with MR/DD/LD appear to be more likely to be successful, while youth with attention deficit challenges and less common psychiatric disorders are less likely to leave the program having achieved CFT treatment goals. The absence of any specific clinical issue predictors is important, as it may suggest that the CFTs are successful in individualizing treatment plans to more effectively respond to individual youth's strengths and clinical needs.

Finally, our finding that there is variation in outcomes by referral sources lends some credence to some of the Dawn Project stakeholders' perceptions that some differences exist in the types of youth served by different systems. However, our inclusion of clinical and diagnostic controls would suggest that these differences are not the result of individual level differences in clinical or demographic characteristics. Rather, we argue that the importance of referral source is more indicative of differences in the issues youth bring with them from the systems that referred them that may influence youth's success in the Dawn Project.

Our study also has important limitations. The array of demographic, clinical, and referral sources available is limited, and our measures may not adequately capture the individual or system-level forces that are influencing program outcomes. Nevertheless, these preliminary analyses seem to suggest that CFTs and the structure of this system of care may not be optimal for all youth (e.g., older youth). At a more general level, it suggests that systems of care researchers should focus more attention on the impact of case mix and system structure on program outcomes.

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Exploring How Systems of Care Influence a Community's Children's Social Services

Jeffrey A. Anderson & Eric R. Wright

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Introduction

Systems of care engender changes in attitude and basic philosophy that have the potential to change the ways in which service stakeholders from different organizations interact, approach their missions, and implement service delivery. Accordingly, this study focused on stakeholder perceptions of the impact that implementing a system of care had on the children's social service systems in a local community. Exploring the perceptions of stakeholders revealed both common and divergent understandings of implementation.

Method

The data for this study were collected primarily through semi-structured interviews designed to understand how key stakeholders in children's services within the community viewed the impact that the care system had on the community. Consistent with a grounded theory approach (Glaser & Strauss, 1967), we made use of (a) analytic induction, defined as finding commonalities in qualitative data, seeking their explanation, and finding other situations in which to test the generality of emerging explanations and (b) constant comparison in which field notes are coded as the study progresses, and new instances of a concept of interest are sought until no more is learned about it.

Study participants. The setting for this study was the Dawn Project system of care, serving the greater Indianapolis area (see Anderson, 2000 for a complete description). Purposive sampling techniques were used to generate a list of names of potential interviewees. An initial list of potential respondents generated by the research team was checked with the Dawn Project Consortium. This process was then repeated. Twenty possible respondents were sent letters of invitation and all but one were interviewed (the exception provided a substitute). Interviewees were typically high-level administrators involved with children's social services in Marion County and the Dawn Project.

Data collection processes. Interviews were audiotape recorded, transcribed, and sent to the interviewee for approval. After consent, transcripts were cleaned to eliminate proper names and as much identifying information as possible. Two members of the evaluation team had primary responsibility for coding data using *Atlas.ti* software (Scientific Software Development, 1997). Throughout the coding process, inter-rater reliability checks indicated that reliability ranged from .78 in early comparisons to .94 in later comparisons.

Findings

The majority of the data could be characterized as being related to positive community-level influences of the Dawn Project, with a secondary focus on negative perceptions. Findings that relate to positive impact fell into the following themes: increased collaboration and service coordination, importance of family involvement, enhancing strengths approaches, and loosening fiscal constraints. Negative perceptions are described in subsequent sections.

Increased collaboration and service coordination. Arguably the clearest theme to emerge from the data was related to the increased service coordination and collaboration that has occurred among and across service providers and systems in Marion County. According to respondents, stakeholders now have a clearer understanding that the children served by the Dawn Project tend to be involved in many different systems making cross-system coordination and collaboration essential. One respondent put it this way, "…more and more there is the understanding that these kids just touch so many different systems...."

Importance of family involvement. After collaboration and service coordination, the next clearest theme to emerge from the data was the importance of involving families at all levels of service delivery. One respondent stated, "…since Dawn [has been] in our community, we have much more opportunity for family involvement through mutual support and taking families seriously as part of the solution to children's issues." Another perceived consequence is that family members are now part of many of the decision-making boards, committees, and other groups related to children's social services throughout the community.

Enhancing strengths approaches. There is broad consensus that the Dawn Project has increased the community's adoption, use, and proliferation of strengths-based approaches. In addition, the sense is that this philosophy is well-modeled by Dawn Project personnel. As stated by an interviewee, "…what Dawn has done for the community has been to bring to life, bring into the community a new way of looking at things in the way of doing work around the needs of children."

Loosening fiscal constraints. At the County level, respondents report that traditional power structures have been challenged because of the creation of the Dawn Project. Financial barriers have "loosened," and there is more talk and understanding about the use and importance of "flex" funds. People also have begun to push the idea of "true" blended funding and recognize the barriers to actually accomplishing that. Many respondents also suggested that the use of costly residential services has been reduced.

Challenges to Implementation

Several negative themes also emerged from the study. Social service agencies are notoriously underfunded, and it is expected that a certain level of resentment would exist toward a program that does not appear to be operating under the same constraints as everyone else. The following sections provide some insight into the challenges that were uncovered in this study.

Elitism. It was suggested that there is a degree of eliteness associated with the Dawn Project and that sometimes the feelings of others have been ignored or hurt as a result. The preponderance of data suggested that this perception was related to Dawn having more money to spend on its clients as compared with the "typical" local social service agencies. Regardless of the underlying causes for these perceptions of elitism, one respondent suggested that Dawn Project leaders need to spend more time "sitting, talking, listening with the community providers."

Enabling parents. The perception emerged that some Dawn Project service coordinators do too much for parents and families rather than helping families learn how to do for themselves. For example, several respondents suggested that the length of involvement Dawn had with families often was too long. One respondent stated "I think [Dawn has to] learn when to say when and get the families ready to live without you…. What they did for some families, and they still do, is to create an artificial world that is not going to be [sustainable]…."

Urban legends. Respondents also discussed the emergence and persistence of what were referred to as *urban legends* that have been proliferated about the Dawn Project. For example, as stated in one interview, "The perception was, you want a new house, you want new carpet, you want new something, just get into the Dawn Project. They'll buy you whatever you want—that's exaggerated; that was not even true. " However, regardless of whether such legends are more or less true or not, their mere existence points to the large presence of the Dawn Project within the community as well as some of the frustrations felt by some individuals who lack the freedom to act similarly or who disapprove of unconventional approaches.

Resistance. As one respondent put it, "There are some systems that are very resistant to [Dawn]." One component of the resistance to the Dawn Project is the perception of a new organization, with a new away of providing services, "riding into town to save the day." There is also some resentment toward the resources Dawn has been able to garner, reflecting the frustration felt by many social service workers who have fewer resources and larger caseloads than Dawn Project service coordinators, resulting in less time to work with families.

Ambivalent Themes

In some cases it is difficult to determine whether emergent themes from the study were based on reasonable expectations of a single program. For example, the perception emerged that the Dawn Project has not done enough to reduce the use of residential services in the community. Another perception was that Dawn has not been successful in truly blending funding. Such concerns, however, are indications of structural challenges within the system that cannot be resolved by any one agency.

Discussion

It is obvious that inferences drawn from this simple exploratory study must be made cautiously. The research was conducted across one system of care in one metropolitan area in the Midwest, making generalization to other communities unknown. Moreover, this study did not necessarily examine the prior community environment that allowed an initiative like the Dawn Project to flourish. However, what clearly emerged from the data is that the Dawn Project system of care has had multiple and varied impacts on the children's social services system in Marion County. Although perceptions varied across individuals, broad themes uncovered in this study highlight the extent of changes that have occurred related to the implementation of a system of care. Most importantly, findings demonstrate that the primary impact on the community is the emergence of the basic system of care principles, as articulated by Stroul and Friedman (1986) almost 20 years ago: coordinated, strengths-based, family focused services, provided within a framework of flexible funding, in the community as opposed to more restrictive settings.

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Service Utilization, Expenditures, and Success in the Dawn Project

Eric R. Wright, Harold Kooreman & Jeffrey A. Anderson

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Introduction

The Dawn Project in Indianapolis, Indiana represents a system of care initiative dedicated to integrating services for youth and families served in more than one system (i.e., education, mental health, juvenile probation, child welfare; Anderson, Wright, Kooreman, Mohr & Russell, 2003). A key distinguishing feature of this program is its use of a managed care model to blend funding streams and control expenditures. Because managed care often introduces pressures to reduce service expenditures and may negatively impact the quality and outcomes of care (Wholey & Burns, 2000), we examined the relationship among patterns of service utilization, the expenditures of care, and the likelihood that youth and their families successfully met the clinical objectives that were established when they enrolled in the program.

Background

Initiated in 1997 by a grassroots consortium of state and local agencies and service providers, the Dawn Project utilizes service coordination or child and family teams (CFTs) to develop individualized treatment plans and ensure that needed services are obtained, organized and directed toward common goals (Anderson et al., 2003). Youth and families can be referred to the Dawn Project from the system partners, including welfare, juvenile justice, education, and mental health. While service coordinators (SCs) serve as facilitators of the CFTs, it is the team that determines the service plan and approves all needed treatment-related expenditures. Funds, which are blended through an agreement among the system partners, are contributed based on a capitated rate negotiated between the Dawn Project and its partners.

Over the years, as managed care reforms have expanded in the health care system in the United States, critics have raised questions about the impact these financial decisions have on the quality and outcomes of care (Wholey & Burns, 2000; Waitzkin, 2001). There is, however, relatively little information on the impact managed care has on the provision of care within systems of care initiatives. This study is a preliminary examination of the overall patterns of service use and expenditures and their association with successful treatment outcomes for the first 597 children and youth who have completed the Dawn Project.

Methods

Demographic and referral characteristics. The current set of analyses focuses on all discharge episodes from the Dawn Project as of October 18, 2003 (*n* = 597). The majority of the sample is either African-American/bi-racial (35.3%) or Caucasian males (29.8%). African-American/biracial females comprise 19.9% of the study sample while Caucasian females make up the remaining 14.9%. The average age of the youth is approximately 13 years. The largest percentage of young people in the current sample entered the Dawn Project through the Marion County child welfare system (47.1%), followed by the juvenile justice system (37.2%), the school system (11.9%), and the mental health system (3.9%). The most commonly reported psychiatric diagnoses are for conduct-based disorders (58.0%), affective/psychotic disorders (47.9%), and attention deficit disorders (42.0%). Young people were enrolled in the Dawn Project for 14 months on average (*SD* = 8.71)

Services and expenditures information. The information on the services received by each young person and the expenditure of those services was obtained from the Dawn Project's information management system, The Clinical Manager (TCM). The data reflect only those services that were paid for directly by the Dawn Project. Because the Dawn Project coordinates a large array of services, services were collapsed into eight categories: mental/behavioral health, physical health, crisis/respite, foster care placement, residential/community residential placement, mentoring services, discretionary funds, and service coordination (see Table 1). In order to aid analysis, a series of dummy variables was created to indicate whether or not a young person received each type of service. The comprehensiveness of a young person's service array was measured by summing the service type indicator variables (*M* = 3.75, *SD* = 1.55). Finally, we computed the total amount spent, as well as the amount spent on each type of service, for each youth. Because this variable was highly skewed, we also used the natural log of the actual expenditure in our multivariate models.

Program disposition. The outcome for each young person's enrollment was obtained from TCM. The outcomes for the present analysis were collapsed into two categories: discharged having met treatment goals (i.e., successful discharge from the program) and discharged for all other reasons (i.e., failure to make sufficient clinical progress, aging out).

Analysis. First, OLS regression was used to examine the impact of demographic characteristics, diagnosis, referral source, and services received on a young person's overall expenditures. This was followed with logistic regression analyses to model the effect of individual-level, service, and expenditure factors on the likelihood of successfully completing the program.

Table 1
Descriptive Statistics for Service and Expenditures Variables

Service Categories	*Minimum*	*Maximum*	*Mean*	*Median*	*SD*
Mental/Behavioral Health	0.00	58,137.50	3,548.30	1,198.00	5,595.44
Physical Health	0.00	3,923.95	47.66	0.00	223.07
Crisis/Respite	0.00	132,658.00	2,350.80	0.00	8,787.21
Foster Care	0.00	90,619.00	5,999.72	0.00	13,078.39
Residential Care	0.00	275,984.00	222,050.43	1,290.59	36,536.16
Mentoring	0.00	77,971.00	5,495.39	800.50	10,985.97
Discretionary Funds	0.00	22,214.82	2,100.27	1,065.81	2,817.32
Service Coordination[a]	0.00	21,741.40	1,823.82	562.50	3,088.04
Total Expenditure (in dollars)	14.59	361,509.80	43,416.38	29,990.38	47,344.01
Number of Service Categories			3.75		1.55
Number of Months in Dawn			14.20		8.71

[a] These expenditures represent service coordination activities not covered by Medicaid

Results

Analysis of service expenditures. Three variables significantly predicted expenditures: length of enrollment, referral source, and service category. Young people with longer lengths of stay in the Dawn Project had higher expenditures. When compared to young people referred from child welfare, young people referred from education had higher expenditures. Receiving mental or behavioral health services, foster care services, residential treatment, mentoring services, discretionary funds, and receiving more discrete types of services predicted higher expenditures (see Table 2).

Table 2
Predictors of Expenditures in the Dawn Project

Predictor	*b*	*t*	*p*
Race	-.01	-0.11	0.91
Gender	-.04	-0.45	0.65
Age at Enrollment	-.01	-0.68	0.49
Length of Enrollment	.06	10.89	0.00***
Referral Source			
Juvenile Justice	-.01	-0.07	0.95
Education	.35	2.39	0.02*
Mental Health	-.44	-1.96	0.05
Diagnostic Categories			
Affective/Psychotic Disorders	-.00	-0.05	0.96
Attention Deficit Disorders	-.10	-1.16	0.25
Conduct Disorders	.03	0.33	0.75
MR/DD/LD	.14	1.41	0.16
Reactive Stress Disorders	.09	0.83	0.41
Other Disorders	.04	0.39	0.70
Service Categories			
Mental/Behavioral Health	.46	4.91	0.00***
Physical Health[a]			
Crisis/Respite	.10	1.01	0.31
Foster Care	.55	5.54	0.00***
Residential Care	1.43	16.30	0.00***
Mentoring	.48	5.15	0.00***
Discretionary Funds	1.46	5.02	0.00***
Number of Types of Services Received	-.01	-0.11	0.91

*$p \leq .05$, **$p \leq .01$ ***$p \leq .000$

[a] Physical Health was included in the model but dropped due to low frequency of use.

Outcome analyses. In terms of outcomes, the majority of youth (59.6%) left the program having successfully achieved the CFT's treatment goals, with several variables predicting successful outcomes. Similar to the findings reported in the first paper in this symposium, youth who are younger at enrollment in the Dawn Project were more likely to leave the program having met their treatment goals. When compared with child welfare, youth entering the program from either education or juvenile justice are less likely to be discharged having met their treatment goals. Two service-related variables predicted outcome: (a) crisis/respite and (b) receiving residential care both were associated with a lower likelihood of meeting treatment goals. Additionally, the total expenditure of services was also statistically related to the likelihood of success in the program; however, the overall impact was small in terms of magnitude and varied slightly depending on whether the actual expenditures or the logged expenditures was used to estimate the effect of expenditures (see Table 3). In the model for actual expenditures, for example, the

Table 3
Predictors of Successful Completion of the Dawn Project

	Raw Total Expenditure	*Log (Total Expenditure)*
Predictors	*Logit Coefficient*	*Logit Coefficient*
Race	-.23	-.21
Gender	-.30	-.29
Age at Enrollment	-.13**	-.13**
Length of Enrollment	.08***	.03
Referral Source[1]		
Juvenile Justice	-1.18***	-1.10***
Education	-1.01**	-1.02**
Mental Health	-.91	-.53
Diagnostic Categories		
Affective/Psychotic Disorders	.03	.03
Attention Deficit Disorders	-.10	-.04
Conduct Disorders	-.20	-.24
MR/DD/LD	.53*	.46
Reactive Stress Disorders	.29	.24
Other Disorders	-.13	-.10
Service Categories		
Mental/Behavioral Health	.01	-.12
Physical Health	-.00	.06
Crisis/Respite	-.57**	-.63**
Foster Care	-.06	-.20
Residential Care	-.67**	-1.38***
Mentoring	-.23	-.38
Discretionary Funds	1.51	1.04
Number of Types of Services Received		
Total Expenditures	-.00*	.33***
$\_^{2}$	97.26***	103.22***
Nagelkerke R^2	0.12	0.13

*$p \le .05$, **$p \le .01$ ***$p \le .001$
[1] Child Welfare served as the comparison category

coefficient for total expenditures is negative but very small, suggesting that higher expenditures decrease slightly the likelihood of success. However, when we control for the extreme values at the high end of the distribution by using a logged transformation of expenditures, the coefficient for total expenditures in this model is significant and slightly positive.

Because of the differences in the direction of the coefficients in these models, we tested for the possibility of a curvilinear effect of expenditures. These results suggest that overall there is a slight decrease in the probability of success for low expenditure youth (below $30,000) and a slight decrease in the probability of success for high expenditure youth (over $75,000). In short, the expenditures have only a minimal effect on the probability of success of individual youth that is limited to the low and high ends of the distribution of expenditures.

Discussion and Conclusion

In conclusion, our findings suggest that a managed care approach can be used effectively without compromising clinical care. As in most systems of care, residential care is the most expensive form of care, and, perhaps more importantly, it is also associated with a somewhat lower probability of clinical success. However, within the Dawn Project, there is considerable heterogeneity in the array of services youth receive indicating that the needs of the individual youth are, to a great extent, dictating what services are provided. In this regard, we believe that managed care is not an impediment to achieving the individualized treatment approach emphasized in the systems-of-care philosophy (Stroul & Friedman, 1996).

Our finding that the level of expenditure is less important than the type of care in predicting success is especially intriguing; however, we believe this preliminary finding must be interpreted with caution given the complex nature of the data. Indeed, our analyses do not yield a clear picture as to the appropriate amount to spend on a youth to achieve a positive outcome. Rather, we believe our findings suggest that CFTs take great care in recommending services that are appropriate for a particular client's needs and, as a result, the money is more effectively tailored to the individual needs of the youth. More important, coupling the coordination of services and the authority to pay for services insures a more targeted delivery of service dollars focused where they are needed. In future analyses, we plan to apply more sophisticated methodologies to better understand the link between expenditures and program outcomes. Nevertheless, we believe these preliminary data underline the potential value of combining principles of managed care with the system of care philosophy.

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Symposium Discussion

Knute Rotto

These three studies provide an overview of some of the program processes and associated child and family and system-level outcomes in a system of care. In the first paper, examining what predicts success in a system of care, results suggest that being younger at enrollment increases the likelihood of successfully completing the clinical goals established by child and family teams. Results also suggest the need to examine both individual-level variability among participating children, as well as the structure of the services provided within the care system. The second paper examines the perceptions of stakeholders at the system-level with regard to how implementing a system of care influences an existing children's social services system. Results generally were positive, with many respondents reporting that, associated with the establishment of the care system, core system of care principles were beginning to emerge within the community. Findings also revealed the existence of some underlying resistance to the changes that were occurring. The third paper describes the relationship between service utilization and costs and the probability of successfully completing a system of care that is using managed care to blend public funds while simultaneously placing purchasing authority for services at the child and family team level. Although critics have argued that managed care can result in less comprehensiveness and inferior clinical outcomes, findings suggest that these objectives are not compromised as a result of the managed care process. Taken as a whole, these three studies provide an empirical link between the processes of an established care system called the Dawn Project and outcomes at the individual and system level.

CONTRIBUTING AUTHORS

Jeffrey A. Anderson, Ph.D.
Assistant Professor & Area Coordinator for Special Education, Director, Center for Urban and Multicultural Education, IU School of Education at IUPUI, Indiana University, 902 West New York Street, Indianapolis, IN, 46202-5155, 317-274-6809, fax: 317-274-6864, e-mail: jander2@iupui.edu

Harold Kooreman, M.A.
Project Manager, Department of Sociology, Indiana University-Purdue University Indianapolis (IUPUI), Department of Sociology, Cavanaugh Hall 303, 425 University Blvd, Indianapolis, IN 46202-5140, 317-278-3652, fax: 317-278-3654, e-mail: hkoorema@iupui.edu

Knute I. Rotto, A.C.S.W.
Chief Executive Officer, Choices, Inc., 4701 N. Keystone Avenue, Suite 150, Indianapolis, IN 46205, 317-726-2121, fax: 317-726-2130, e-mail: Krotto@kidwrap.org

Eric R. Wright, Ph.D.
Associate Professor, Department of Sociology, Associate Director, Indiana Consortium for Mental Health Services Research, Indiana University-Purdue University Indianapolis (IUPUI), Department of Sociology, Cavanaugh Hall 303, 425 University Blvd, Indianapolis, IN 46202-5140, 317-274-8589, fax: 317-278-3654, e-mail: ewright@iupui.edu

Symposium Overview

Health Care Reform Tracking Project—Summary of Key Findings 1995-2003

Chair
Mary I. Armstrong

Authors
Mary I. Armstrong
Sheila A. Pires
Beth A. Stroul
Jan McCarthy
Virginia Wood

Introduction

The Health Care Reform Tracking Project (HCRTP) has been tracking publicly financed managed care initiatives since 1995 in order to describe and understand their impact on children with behavioral health problems and their families. Three partners—the Research and Training Center for Children's Mental Health at the University of South Florida, the National Technical Assistance Center for Children's Mental Health at the Georgetown University Center for Child and Human Development, and the Human Service Collaborative of Washington, D.C.—conduct the project jointly

The most significant trend in Medicaid financing of mental health services over the past two decades is the adoption of managed care strategies. According to the 2003 State Survey of the HCRTP, 38 of the 50 states reported involvement in managed care activities affecting behavioral health services for children and their families (Stroul, Pires, & Armstrong, 2004). This trend mirrors the reforms over the past two decades in the national health care delivery system. As state Medicaid authorities confronted escalating health care costs in the 1980s and early 1990s, many states turned to private sector solutions, including a commercial health insurance model and a number of managed care approaches. The introduction of *managed care* was an opportunity to expand access, increase the array of available mental health services, and organize care through a provider network (Goldman, McCulloch, & Sturm, 1998; Mechanic, 1999). However, studies of private insurance showed possible threats, such as evidence that the penetration rates for children's mental health services fell substantially under managed care arrangements (Leslie, Rosenheck, & McCue Horwitz, 2001).

Concerns regarding the impact of *Medicaid behavioral health managed care* on children with serious mental health problems and their families have been expressed in a number of national studies (National Mental Health Association, 2003; Koyanagi & Semansky, 2003; Mandell, Boothroyd, & Stiles, 2003; Stroul, Pires, Armstrong, & Meyers, 1998). Hutchinson & Foster (2003) conducted a review of the literature about the effects of Medicaid managed care on children using mental health services. Findings regarding access to care were mixed, although all studies reported reductions in service utilization and cost for inpatient care. These and other studies were lacking in data on the quality of children's mental health services (Armstrong, 2003). As noted by Burns (1999), one reason for the lack of quality data may be that researchers have struggled with defining quality outcome measures for children's mental health.

Method

The *Tracking Project* (i.e., HCRTP) has used multiple methods to describe and understand the impact of behavioral health managed care. Periodic surveys of all states were completed in 1995, 1997-98, 2000, and 2003. These surveys tracked data in a number of areas. In-depth impact analyses involving site visits to a selected sample of 18 states studied the effects of managed care systems on children with mental health problems and their families, and on the systems set up to serve these children and families. In September 2003 the Tracking Project convened a two-day national consensus conference to develop recommendations for policy, practice, and research on managed behavioral health care for children and their families. Finally, the Tracking Project has developed and disseminated a series of volumes on promising approaches and features of managed care systems.

Throughout these activities, the Tracking Project has compared the differential effects of two types of managed care approaches, *carve out designs*, defined as arrangements in which behavioral health services are financed and administered separately from physical health services, and *integrated designs*, by which the financing and administration of physical and behavioral health care are integrated.

This symposium overview:

- Provides a status report on public sector managed care activity;
- Summarizes findings from the HCRTP from 1995 to date, using data from the 2003 State Survey to illustrate trends over time; and
- Summarizes recommendations for future research from the consensus conference.

2003 Status of Managed Care Activity

The definition of managed care used in the Tracking Project includes the use of managed care *technologies* on either a statewide or local basis, including managed care *systems* that have a Medicaid waiver as well as other initiatives using managed care technologies that do not have waivers. Over the past decade only five states never have implemented a managed care system. Out of the 46 states that have implemented managed care over the past decade, 38 (86%) are still involved in managed care. Since the last survey in 2000, there has been a slight retrenchment, with only one state starting a new managed care initiative, two terminating existing systems, and two terminating planning for managed care implementation. However, these are fewer terminations than between 1997/8 and 2000, when there were seven terminations. These findings may reflect a stabilization in the managed care landscape.

The 2003 state sample includes 22 carve outs and 17 integrated physical health/behavioral health managed care systems, and the primary focus of most (61% of the sample) is *Medicaid managed care*, followed by a joint focus on *Medicaid and public behavioral health* (36%). Most managed care systems are statewide (62%), and an additional third (33%) affect multiple areas within a state (typically the most populated areas). Only one state reported that its managed care systems affected a single area within a state.

Most systems (71%) involve a Medicaid *waiver*, though there has been a moderate decline in the percentage of systems with waivers since 1997/98, probably due to the Balanced Budget Act of 1997, which allowed for the implementation of managed care without a Medicaid waiver. Integrated reforms are more likely to use 1,115 waivers; carve outs, 1915(b) waivers. Most managed care systems (90%) are in late stages of implementation (more than three years), with integrated systems being older than carve outs. Over the past decade, there has been a steady decline in the percentage of systems being planned or in early implementation stages, again suggesting a settling in the managed care landscape. Only 5% (two systems) indicated they were in the planning or early stages of implementation.

Most managed care systems in the 2003 sample (77%) include substance abuse services, with integrated systems being more likely to include them than carve outs (88% versus 68%). When substance abuse services are *not* included, financing is still on a fee-for-service basis in 78% of the systems. In the remaining systems, it is either a separate carve out or included in a physical health managed care system that does not include mental health. In two-thirds of managed care systems (68%), reportedly there is parity between physical and behavioral health services, without pre-set limits or higher co-pays. However, this represents a 15% decline since 2000 in systems reporting parity.

While cost containment has been a goal of managed care systems throughout the past decade, 18% more systems in 2003 reportedly are focusing on cost issues than was the case in 2000. In contrast, there is a reported decline in focus on all other types of goals, particularly using managed care to expand the service array and improve quality. State budget deficits may be contributing to this apparent shift in focus.

Covered Populations

Nearly 11% fewer managed care systems are covering the total Medicaid population than in 2000; fewer than half (39%) cover the total population in 2003. Carve outs are significantly more likely to cover the total Medicaid population than are integrated systems (55% of carve outs versus 19% of integrated systems). Eight percent fewer managed care systems are covering the State Children's Health Insurance Program (SCHIP) population than in 2000. Fewer than half (45%) now cover the SCHIP population.

Table 1
Covered Populations

- Fewer than half of systems cover total Medicaid population (39% in 2003,11% fewer than 2000)
- Fewer than half of systems cover SCHIP population (45% in 2003, 8% fewer than 2000)
- Only carve outs cover non-Medicaid, non-SCHIP (45%, 15% decline since 2000)
- Most systems cover SSI (65% in 2003) and child welfare (73% in 2003) populations, though slight decline since 2000 in coverage of high-need, highcost populations

Only carve outs (45%) were reported to cover non-Medicaid and non-SCHIP populations; there has been a 15% decline in coverage of these populations since 2000. Over half (65%) of managed care systems cover the SSI population, and about three-quarters (73%) cover children in the child welfare population who are eligible for Medicaid. Carve outs are significantly more likely to cover these high-need, high-cost populations than are integrated systems. While coverage of high need, high cost populations has increased since 1995, there was a slight decrease in coverage of these populations between 2000 and 2003.

Summary of Key Findings 1995-2003

The Tracking Project has found consistent differences between systems with carve out and integrated designs. Systems with behavioral health carve out designs (i.e., those with separate financing and administration of behavioral health care within a managed care system) differ from integrated systems in that they:

- Include coverage of a broader array of services
- Cover more home and community-based services
- Support a more flexible, individualized approach to care
- Include key stakeholders to a greater extent in planning and refinement
- Involve families to a greater extent and in more significant roles
- Include more planning and special provisions for children with serious and complex disorders
- Include cross-system funding and collaboration to a greater extent
- Tend to be supportive of systems of care and incorporate system-of-care values and principles to a greater extent
- Provide training to managed care organizations (MCOs) regarding special populations, home and community-based services, and system of care values and principles to a greater extent
- Incorporate incentives for providers to use evidence-based practices
- More likely to limit MCO profits and administrative costs
- Cover high-need, high-cost populations to a greater extent
- Cover non-Medicaid, non-SCHIP populations

Regarding the roles of Medicaid and mental health authorities, state Medicaid agencies have been and continue to be the dominant players in publicly funded managed care systems, having lead responsibility for nearly two-thirds (65%) of the managed care systems in the 2003 survey. State Medicaid agencies are health care financing agencies, which generally do not have specialized expertise in children's behavioral health service delivery issues. State mental health agencies play significant leadership roles in systems with carve out designs, but not in integrated systems (65% of carve outs, 35% overall).

Over time, state child mental health staff and providers are the only stakeholders that are most likely to have "*significant involvement*" in planning, implementation, and refinement of managed care systems (63% and 56% respectively in 2003), although this occurs to a much greater extent in carve outs than in integrated systems. For all other stakeholder groups (child welfare, juvenile justice, education, and substance abuse staff), there has been less significant involvement. With respect to families, significant involvement has been consistently found in fewer than half of the managed care systems, and the latest survey found some decreases in significant family involvement (down to 35% of total systems in 2003) and in requirements for family involvement. This is the case despite increased national attention to the need for family involvement and to the concepts of consumer and family-driven care. However, families reportedly have at least *some* involvement in another 56% of systems. Where families are significantly involved, there are meaningful and exciting examples—involvement in paid family roles, quality monitoring, child and family teams, readiness assessments, and others.

Types of Managed Care Organizations

Most managed care systems rely heavily on for-profit managed care entities—either *for-profit health managed care organizations* (MCOs) or *for-profit behavioral health managed care organizations* (BHOs). The use of government entities as management organizations is more likely in systems with carve out designs. Though there has been some improvement (particularly among the BHOs) resulting from greater experience, the Tracking Project has consistently found a reported lack of understanding of the needs of children with serious emotional disorders among these for-profit entities. This is likely due to the fact that commercial managed care companies historically did not serve populations with serious disorders. This finding has implications for reaching commercial MCOs and BHOs and working with them to increase knowledge and expertise on customizing care for children with serious disorders and their families.

Over time, the Tracking Project has found significantly more problems associated with the use of multiple MCOs statewide or within regions than with the use of a single MCO statewide or within regions, specifically, multiple and confusing procedures for every aspect of system operation—billing and reimbursement, credentialing, utilization management, service authorization, and reporting; inconsistency in clinical decision making; and difficulties in monitoring. Integrated systems tend to use multiple MCOs statewide or within regions (79% do); carve outs are more likely to use a single MCO statewide or within regions (68%).

Financing and Risk

Medicaid and state mental health agencies are the primary sources of funding for managed care systems—in 2003, for all carve outs, Medicaid was included in 100% of systems, and mental health was included in half of the systems. The level of financial participation of other child-serving agencies is significantly lower. Systems with carve out designs are more likely to draw on multiple funding streams from multiple agencies, whereas systems with integrated designs are more likely to rely on Medicaid and SCHIP dollars from the Medicaid agency. Medicaid dollars are left outside of the managed care system in all cases (100% of the systems in 2003). The child welfare, mental health, education, juvenile justice, mental retardation/developmental disabilities, and substance abuse agencies are all likely to have Medicaid dollars for behavioral health services. Even though more managed care systems include coverage for both acute and extended treatment, other child-serving systems still retain responsibilities and funding for behavioral health service provision outside of managed care systems. This may create a safety net for children unable to access needed service through the managed care system, but may also perpetuate opportunities for fragmented care and cost shifting.

Cost shifting has reportedly been occurring as a result of the implementation of managed care in about half of the systems (50% in 2003), though the perception in 2003 is that there is some decline in cost shifting. However, there has been little systematic tracking or monitoring of cost shifting, so that these reports are difficult to substantiate (only 11% of the systems reported any tracking of this phenomenon in 2003). Cost shifting is more likely to be reported from the managed care system to other child serving systems in integrated managed care systems (in 57% of integrated systems in 2003).

Table 2
Risk Structuring

- Most use risk-based financing (81% in 2003)
- More use of capitation (78% in 2003), less use of case rates (19% in 2003)
- MCOs have all risk in half the systems (46% in 2003)
- Providers share risk in half the systems (47% in 2003)
- Few use risk adjustment mechanisms – stop loss, risk corridors, risk pools, reinsurance
- Few use bonuses/penalties tied to performance (23% in 2003)

Most managed care systems use risk-based financing (81% in 2003), with the majority using capitation financing (78% in 2003) and relatively little use of case rate financing (19% in 2003). Over time, the Tracking Project found carve outs less likely to use capitation than integrated systems, but the gap appears to be narrowing. This may reflect an increasing sophistication with managed care on the part of state purchasers and/or an outgrowth of state budget problems. Over time, in about half of the managed care systems (46% in 2003), MCOs have all the risk and benefit, with the state sharing or retaining risk and/or benefit in the other half. Providers share risk in about half of the managed care systems (47% in 2003). Few managed care systems use risk adjustment mechanisms such as stop-loss arrangements, risk corridors, reinsurance, and risk pools, and few use bonuses or penalties tied to performance (23% in 2003). None of the integrated managed care systems require that a certain specified percentage of the capitation rate (which covers both health and behavioral health) be allocated to behavioral health care.

Service Coverage, Capacity, and Coordination

There has been a consistent and continuing increase in managed care systems that cover both acute and extended care (95% in 2003), whereas many more managed care systems initially limited coverage to acute care, similar to a commercial insurance model. Currently in 2003, no carve outs and only 12% of integrated systems limit coverage to acute care, although the services actually *provided* depend on a variety of factors beyond simple coverage. In most managed care systems, other agencies retain responsibility and resources for behavioral health extended care in addition to coverage within the managed care system (92% in 2003)—child mental health and child welfare are the most likely to have extended care resources and responsibility. Over time, about half the managed care systems (55% in 2003, mainly carve outs) reportedly have broadened the array of covered services as compared with pre-managed care, specifically expanding coverage of home and community-based services. In the 2003 survey, some retrenchment in service coverage was found in the 97/98 levels, perhaps due to the current fiscal crises and resultant modifications in health and behavioral health services.

Despite the reported expansion in service coverage, the reported *availability* of services has not expanded significantly in most systems. Significant expansion of service capacity for home and community-based services was found in only a few systems (21% in 2003,all carve outs). Most managed care systems do not consider service capacity for home and community-based services in their state to be highly adequate or even mostly adequate. In 2003, no system rated capacity highly adequate, and only 19% rated capacity as mostly adequate. Over time, there has been a decline in systems that require reinvestment of savings back into the system to increase service capacity (only 32% of the systems require this in 2003). Those requiring reinvestment are predominantly carve outs. In 2003, however, most systems reported that there are no savings to reinvest. State investment in service capacity development (apart from the managed care system). declined over time (53% of the systems reported state investments in 2003, a decline of 26% over 2000).

Nearly all carve outs (91% in 2003), but only about half of the integrated systems (53%) reported that managed care has made it easier to provide flexible, individualized services. Nearly two-thirds (63% in 2003) of the managed care systems reportedly encourage or incorporate incentives for providers to use evidence-based practices. This is far more likely to occur in carve outs. The most commonly used strategies to promote evidence-based practices include providing training and/or consultation, developing practice guidelines, or monitoring through quality improvement protocols. Most managed care systems (74% in 2003) reportedly provide few services to young children and their families, despite a reported increase in EPSDT screening and increased national attention to early childhood mental health issues.

Improvement in coordination between physical and behavioral health care has been found in comparison with pre-managed care. Improvement was reported in systems with both carve out and integrated designs (67% overall in 2003), substantiating ongoing observations that improvement in physical-behavioral health coordination is not related to system design. Such improvements are related to specific strategies and provisions directed at coordinating physical and behavioral health care that are implemented regardless of design. Thus, contrary to common beliefs, simply adopting an integrated design does not guarantee that physical and behavioral health will be coordinated. Coordination between mental health and substance abuse reportedly has improved with managed care implementation, though more in carve outs than in integrated systems. In general, the Tracking Project has found improved interagency coordination as a result of managed care, which is attributed to the need to problem solve, particularly in carve outs.

Attention to Children with Serious Behavioral Health Disorders

The Tracking Project has identified many barriers to serving children with serious and complex disorders and their families (i.e., children with serious emotional disorders and children in the child welfare and juvenile justice systems). These include rigid and stringently applied medical necessity and clinical decision making criteria; fiscal incentives to under serve high need populations; a tendency to emphasize short-term, time-limited treatment in managed care; lack of understanding of the special legal, logistical, coordination, and treatment needs of these groups; lack of risk adjustment mechanisms; lack of family focus in service delivery; and lack of special provisions, in particular higher capitation or case rates.

Over time, more managed care systems have engaged in discrete planning for children with serious emotional disorders (74% in 2003), but fewer for children in child welfare or juvenile justice (47% and 35% respectively). Discrete planning for these populations is substantially more likely to occur in carve outs than in integrated systems.

There has been an increase in managed care systems that reportedly incorporate special provisions for children with serious and complex behavioral health needs, such as intensive case management, wraparound services/process, interagency treatment and service planning, and an expanded service array. In 2003, 81% of the systems reportedly include special provisions for children with serious emotional disorders (compared with only 44% in 1995), 63% for children in child welfare, and 50% for children in juvenile justice. However, few managed care systems incorporate risk adjusted rates for these populations (31% in 2003), so there may not actually be the resources to support these special provisions.

The majority of carve outs (90% in 2003) but less than half of the integrated systems (44% in 2003) facilitate and support the development and operation of local systems of care for children with serious behavioral health disorders. Carve outs are far more likely to incorporate systems-of-care values and principles in the managed care system – broad service array, family involvement, individualized services, care management, and cultural competence.

Access – Initial and Extended Care

Initial access to behavioral health services reportedly has improved in comparison to pre-managed care (85% of the systems in 2003). Over time, the Tracking Project has identified more problems associated with access to extended care services, though recent findings indicate some improvements in access to extended care, at least in carve outs. Improved access to extended care was reported in 71% of the carve outs but only 46% of the integrated systems in 2003.

Initial access to inpatient care typically is not reported as more difficult in managed care systems in comparison with pre-managed care. (Only 11% of the systems reported access to inpatient care as more difficult in 2003). However, lengths of stay reportedly are substantially shorter (in 80% of the systems in 2003). These reduced lengths of stay have resulted in a host of problems, such as premature discharge before stabilization, children discharged without needed services, placement of children in community programs lacking appropriate clinical capacity, and inappropriate use of child welfare shelters or juvenile justice facilities. Some declines in reports of these problems were noted in 2003. There has been an increase in the development of alternatives to hospitalization (11% increase from 2000 to 73 % of systems in 2003), such as crisis respite, crisis stabilization, mobile crisis response, partial hospitalization, wraparound, home-based services, therapeutic home beds, and intensive outpatient services. Carve outs are more likely to have developed alternatives to hospitalization.

Clinical Decision Making

Over time, there has been a broadening of medical necessity criteria in managed care systems such that most now have medical necessity criteria that allow consideration of psychosocial and environmental factors in clinical decision making (89% in 2003).

A problem identified by the Tracking Project was that, despite broad criteria, MCOs, particularly in integrated systems, continued to interpret and apply criteria narrowly. Improvement in this has been found; in most systems, criteria are now interpreted broadly (77% in 2003). There has been a steady increase in the percent of managed care systems that use child-specific clinical decision making criteria (94% in 2003). Almost all managed care systems use level of care criteria for children's mental health (97% in 2003), and about two-thirds use patient placement criteria for adolescent substance abuse (65% in 2003).

Most systems continue to report using various management mechanisms. The most frequently used mechanism is prior authorization, although most systems now allow certain services without prior authorization (86% in 2003). Other widely used mechanisms are concurrent and retrospective reviews.

Early Identification and Intervention

The majority of systems (76% in 2003) conduct **Early and Periodic Screening, Diagnostic, and Treatment (**EPSDT) screens within the managed care systems, and most EPSDT screens reportedly include some type of behavioral health component (90% in 2003). However, only about half (58% in 2003) of the systems reportedly include incentives or strategies to encourage primary care practitioners to conduct EPSDT screens and make appropriate referrals for behavioral health services.

Cultural Competence

Most managed care systems include specific strategies to address cultural competence. For example, most systems include translation and interpreter services (86% in 2003). But all other strategies are found to a greater extent in carve outs than in integrated systems, such as incorporating requirements in Requests for Proposals (RFPs) and contracts related to cultural competence, training of MCO administrators, and providers on cultural competence, including culturally diverse providers in networks, and including specialized services needed by culturally diverse populations. There has been a reported increase over time in planning for culturally diverse populations within managed care systems (47% in 2003, up 28% since 1997/98).

Providers

In nearly two-thirds of the managed care systems, provider reimbursement rates reportedly are higher than pre-managed care (66% in 2003, a 43% increase since 2000). New credentialing requirements are not impeding inclusion of providers (reported by 66% of the systems in 2003). Reportedly, managed care implementation has not resulted in closure or severe financial hardship for provider agencies in most managed care systems, contrary to the frequent assertion that managed care has created wholesale financial hardship for providers. Reports of provider financial hardship or closure have decreased from 27% in 2000 to 14% in 2003. Over time, there have been complaints about increased administrative burden for providers identified through the Tracking Project, but some decrease in reports of increased administrative burden were found in 2003.

Accountability

In 2003, about 30% of all managed care systems (more than half of the integrated systems) reported that they do not have adequate data for behavioral health care decision making, attributed to lack of adequate MIS systems, lack of encounter data, and lack of staff capacity to analyze data that exist. The most frequently tracked performance information includes

Table 3
Accountability

- Nearly one-third systems do not have adequate data for decision making (30% in 2003)
- Most frequently tracked performance information is child service utilization (92% in 2003), child penetration rates (71%), and cost (66%)
- Most incorporate child-specific quality measures (82% in 2003)

child behavioral health service utilization, child behavioral health penetration rates, and cost of child behavioral health services (92%, 71%, and 66% in 2003). Most systems include child-specific quality measures (82% in 2003).

Most managed care systems (82% in 2003) measure family satisfaction, but only about half (55% in 2003) reportedly assess youth satisfaction. Most managed care systems reportedly are measuring clinical and functional outcomes (86% in 2003), but nearly half (44% in 2003) continue to report that they are in early stages of implementing their measurement systems in this area, indicating that systems are finding this challenging. Less than one-quarter of all managed care systems report having results from these efforts to date (22% in 2003).

A consistent finding, upheld in the most recent survey, is that most managed care systems do not as yet know what impact they are having on children's behavioral health care. About half or more of the systems do not know the impact of managed care on cost, quality, clinical and functional outcomes, or incorporation of evidence-based practices. Over a third do not know their impact on child behavioral health penetration rates or family satisfaction.

Family Involvement

Most carve outs (62-86% in 2003) reportedly include various strategies to involve families at the system and service delivery levels in managed care systems, such as requirements in RFPs and contracts for family involvement at the system level, requirements to involve families in planning and delivering services for their own children, family focus in service delivery, coverage for family supports, use of family advocates, and hiring families in paid staff roles. In contrast, nearly half of the integrated systems (44%) do not incorporate any of these strategies for family involvement.

More systems (54% in 2003) incorporate requirements for family involvement at the service delivery level in relation to their own children, than requirements for family involvement in system policy and management (41% in 2003). At the system level, many carve outs (71%) but only 19% of integrated systems fund a family organization to play a role in managed care. Families reportedly are involved in quality measurement activities in some way in most managed care systems. The most frequently used mechanisms for involving families are completing surveys and participation in focus groups. More significant involvement through such mechanisms as involvement in the design and monitoring of quality processes reportedly occurs less frequently, and virtually only in carve outs.

Most systems (65% in 2003) reportedly focus on the family in addition to the identified child in service planning and delivery. About half (49%) cover family support services and pay for services to family members if only the child is covered. Over time, the Tracking Project has found that managed care systems have had no particular impact (positive or negative) on the practice of relinquishing custody to access behavioral health services.

Child Welfare Findings

Over time, more managed care systems have included the child welfare population, with the exception of a decline in inclusion of this population in 2003 (91% in 2000 to 74% in 2003). Still, in 2003, nearly three-quarters (74%) of the systems include the child welfare population. The Tracking Project consistently has found that, in most systems, children in child welfare and in juvenile justice may lose eligibility for the managed care system based on their placement type, such as state-operated facilities, raising continuity of care issues for these children.

Less than half of the systems (47%) reported a discrete planning process for children in the child welfare system, a decrease of 25% since 2000. However, the majority of systems include special provisions for children in the child welfare system (63% in 2003), although the percentage of systems with special provisions for children in child welfare has declined since 2000. The special provisions most frequently included are interagency treatment and service planning, intensive case management, an expanded service array, and wraparound services. Only a third (33%) offer family support services for families involved with the child welfare system, and only 15% incorporate higher capitation or case rates for children in child welfare.

Almost half of the managed care systems (43%) are responsible for screening children who enter state custody to identify mental health problems and treatment needs. More than half of the systems provide training for MCOs about the specialized needs of children in the child welfare system (57% in 2003), and about half of the systems include child welfare providers in managed care provider networks (54% in 2003). Nearly two-thirds (61%) of the systems noted that coordination between mental health and child welfare has improved; the remaining systems saw no effect of managed care on coordination between the two systems.

Consistently over time, the services least likely to be covered by managed care systems (i.e., covered by less than half of the systems) continue to be critical services for children and adolescents in the child welfare system, such as therapeutic group homes, behavioral aide services, respite services and crisis residential services. Therapeutic foster care is covered by about half (59%) of the systems. Although most managed care systems cover both acute and extended care, consistently over time, the child welfare system is the system most likely to have resources and responsibility for providing extended care behavioral health services outside of the managed care system (83% in 2003). Nearly two-thirds of the managed care systems, mostly carve outs, are tracking behavioral service use by children in the child welfare system (63% in 2003).

Child welfare agencies contribute more to the financing of managed systems, particularly carve outs than other child-serving systems, with the exception of child mental health and, in 2003, substance abuse, contributing funds in 29% of the systems in 2003 (an 8% increase since 2000). In most managed care systems, child welfare reportedly has access to Medicaid outside of the managed care system (72% in 2003).

General Update

Over three-quarters of managed care systems (78%) reportedly are experiencing detrimental effects as a result of the current fiscal climate in the country. Of the systems experiencing detrimental effects, about a third or more are reporting each of the following effects: reducing services to non-Medicaid eligible children; eliminating specific populations from eligibility for the managed care system; reducing or eliminating coverage of certain services; incorporating or raising co-pays; decreasing capitation rates paid to MCOs; implementing more stringent management mechanisms; changing drug formularies, lowering the federal poverty level eligibility cut-off; or lowering provider reimbursement rates.

The current fiscal climate also may be associated with other findings of the 2003 survey, including:

- A decline in parity
- An increased focus on cost containment goals
- Less coverage of the total Medicaid population, the SCHIP population, non-Medicaid populations, and high cost/high need populations
- A decline in the percentage of systems to which the mental health agency contributes dollars
- More use of full blown capitation
- Fewer rate increases for MCOs
- A decline in the use of risk adjusted rates and other risk adjustment mechanisms
- More use of management mechanisms
- Decline in investments in service capacity development

Perceptions of state child mental health directors and Medicaid agency staff that responded to the 2003 survey are that managed care has been, on balance, moderately to mostly successful in achieving its goals. Carve outs reportedly have had greater success. Not one respondent indicated that there were state plans to phase out managed care. In most cases (89%), the state plans to continue to use managed care technologies to manage behavioral health services. One state indicated it planned to move to a non risk-based system, and four states indicated they were planning to increase the use of Administrative Services Organization (ASO) arrangements. The Tracking Project results indicate that managed care will continue into the foreseeable future, underscoring the need to implement the refinements and revisions that will ensure that these systems are successful in meeting the needs of children with behavioral health disorders and their families.

Consensus Conference

The overall goal of the consensus conference was to develop a set of agreed-upon recommendations for policy, practice, and research, based on research results related to publicly financed managed care for children and adolescents with behavioral health disorders and their families. The process involved identifying key findings across research projects, identifying the implications of these findings, identifying essential elements of managed care for children's behavioral health, and developing recommendations for policy, practice, and research.

The conference resulted in a number of recommendations focusing on the process of research:

- Use *participatory action research models* and engage key stakeholders (e.g., families, providers, MCOs, policy makers, system managers, etc.) in the research process.
- Recognize the value of and utilize applied research and qualitative approaches to study behavioral health managed care systems in addition to quantitative approaches.
- Include multiple perspectives in research on children's behavioral health managed care at both policy and practice levels (i.e., MCOs, private payers, mental health and other systems, families, providers, etc.)
- Frame research questions and findings in ways that can inform policy and practice.
- Establish mechanisms to provide access to information on a timely basis so that research findings can be used for system improvement purposes.
- Create mechanisms for collecting data from multiple child-serving agencies (i.e., Medicaid, mental health, child welfare, juvenile justice, substance abuse, education, etc.)
- Partner with MCOs to use tools such as the System of Care Practice Review (Hernandez & Gomez, 2002) and others for quality improvement purposes.
- Federal agencies (e.g., NIH, SAMHSA, or others) should ensure a focus and resources for applied, field-based research.

There were also a number of recommendations around the focus of research in several general areas. In the area of financing, one recommendation was to study the effects of various financing mechanisms (e.g., capitation, case rates, fee for service, etc.) on the quality and outcomes of care and on the long-term viability of MCOs. A related area is an examination of the impact of coverage of a broad array of services and supports with flexible management on costs, and the factors associated with cost containment within a broad, flexible benefit design. The exploration of risk adjusted rates and case rates for children with serious and complex disorders could help to determine how to build appropriate rates. Finally, conference participants recommended an analysis of expenditures for children's behavioral health care across all child-serving systems (including Medicaid) to better understand the roles of each system, its expenditures, and cost shifting.

In the area of services, one recommendation was to explore the relationship between evidence-based practice and managed care and the types of strategies and incentives associated with practitioner use of evidence-based and best practice. Another recommendation was to explore the types and effectiveness of various incentives to MCOs and providers to develop needed service capacity. Another area of study is the effect of dose (length of stay) on clinical outcomes, including an examination of dose as a mixture of dosages of different types of services. Another area is an exploration of the impact of providing preventive and early intervention services on long-term service needs and costs, including effective strategies for identifying children requiring early intervention mental health services. Effective mechanisms for coordination and communication between physical health and behavioral health providers, including how to overcome barriers, are another study area. Finally, research needs to determine how service utilization is affected by more flexible authorization and utilization management requirements.

Research recommendations related to family involvement included the examination of the effects of family choice approaches on child outcomes; study of the growing role of families and family organizations in managed care systems, including paid roles; and the impact of family advocacy on improvements in behavioral health managed care, including the adoption of evidence-based and best practices.

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CONTRIBUTING AUTHORS

Mary I. Armstrong, Ph.D.

Director, Division of State and Local Policy, Child & Family Studies, Louis de la Parte Florida Mental Health Institute, University of South Florida, 13301 Bruce B. Downs Blvd., Tampa FL, 813-974-4601, fax: 813-974-7376, e-mail: armstron@fmhi.usf.edu

Jan McCarthy, M.S.W.

Director of Child Welfare Policy, National Technical Assistance Center for Children's Mental Health, Georgetown University Center for Child and Human Development, 3307 M Street, N.W., Suite 401, Washington, DC 20007, 202-687-5062, fax: 202-687-1954, e-mail: jrm33@georgetown.edu

Sheila A. Pires, M.P.A.

Human Services Collaborative, 1728 Wisconsin Avenue, NW, Washington, D.C. 20007, 202-333-1892, fax: 202-333-8217, e-mail: sapires@aol.com

Beth A. Stroul, M.Ed.

Vice President, Management & Training Innovations, 6725 Curran St., McLean VA 22101, 703-790-0990, fax: 703-790-1312, e-mail: bethstroul@aol.com

Virginia Wood, B.A.

President, Family Support Systems, Inc., 20487 N. 94th Avenue, Peoria, AZ 85382, 623-825-1744, fax: 623-825-7130, e-mail: gmwood@worldnet.att.net