

*Crisis Services &
Residential Care*

Chapter 7

Chapter 7: Crisis Services & Residential Care

Child Outcomes of a Field Experiment on Intensive In-Home Interventions for Children in Psychiatric Crisis

Introduction

Each year many children and their families present at emergency service settings seeking help for psychiatric crises. Little is known about the treatment that these children receive or the effectiveness of the treatment provided. If a child is assessed as not in need of immediate inpatient care, one option is the provision of intensive in-home services. These interventions, often modeled on the Homebuilders program developed for a child welfare population (Fraser, Pecora, & Haapala, 1991), have not been systematically evaluated to assess their outcomes when used for a mental health population. The purpose of this study was to assess the combined child, family, and system outcomes of three in-home psychiatric emergency programs all located in the same urban community.

In 1987, the New York State Office of Mental Health established Home-Based Crisis Intervention (HBCI) as an intensive in-home service option for families with a child in psychiatric crisis. HBCI is modeled on the Homebuilders program developed in Tacoma, Washington (Kenny, Madsen, Flemming, & Haapala, 1977). This program provides short-term intensive services to families with children who are at risk of out-of-home placement. Counselors work with two families at any time with a goal of preventing psychiatric hospitalization or out-of-home placement. The intervention focuses on family strengths and needs using a multifaceted approach including skills building, counseling, and the provision of concrete services.

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A research demonstration grant (Evans, 1992) from the National Institute of Mental Health (1R18MH50357) and the Center for Mental Health Services (5HD5SM50357) allowed us to develop an enhanced HBCI program (HBCI+), based in part on lessons learned in prior research (Evans, et al., 1994). The study site is located in the Bronx, New York, a densely populated borough of New York City characterized by cultural diversity and intense poverty. In order to answer questions about the effectiveness of these two models, we further modified a generic case management program to create Crisis Case Management (CCM), an intensive, short-term intervention whose purpose was to do rapid assessment of child and family needs and to link to needed services. The development of CCM was to answer the question about whether a linkage and advocacy model of in-home services results in the same outcomes as in-home programs focused on skill building and treatment.

Details on all three interventions, which are provided in-home for 4 to 6 weeks, are available elsewhere (Evans, Boothroyd, & Armstrong, 1996). In this presentation, we will concentrate on aggregate data across the three program types.

Method

Children were referred to the study following evaluation by a child and adolescent team at two psychiatric emergency rooms. Children referred for consideration were assessed as being at risk of either hospitalization or out-of-home placement without immediate intensive intervention. If a child met the study criteria and the family and child were willing to participate, the family was randomly assigned to one of the three interventions. Criteria for inclusion were that the child be (a) between the ages of 5 and 17; (b) living in the Bronx with a natural, foster or adoptive family; and (c) experiencing a psychiatric crisis requiring

immediate intensive intervention, hospitalization, or placement in another restrictive setting. Moreover, the child's family had to be willing to receive services, and the environment in which the child lived had to be safe. Data on multiple aspects of child and family status and functioning were collected on admission to the study, at discharge from the intervention (4–6 weeks), and six months following discharge. Data reported in this manuscript are preliminary and are based on the first 221 children admitted to the study. Other presentations (Evans, Boothroyd, & Kuppinger, 1997; Boothroyd, Kuppinger, & Evans, 1997) focus on additional aspects of this study.

Results

To understand the characteristics of children referred to the study in the context of all children presenting at the emergency rooms, clinicians were asked to assess the overall dangerousness of each child's condition. The assessment device that was utilized was the Child and Adolescent Mental Health Assessment of Imminent Danger (Gutterman & Levine, 1992). On a five-point scale, ranging from *none* (0) to *severe* (4), children referred for hospitalization ($N = 208$) had a mean score of 2.64; those referred for in-home services ($N = 179$) had a mean score of 1.85; and those referred to other community-based services ($N = 620$) had a mean score of 1.14. All between-group differences are statistically significant at $p = .05$. There was also a perfect order effect between the seriousness of a child's condition, the child's assessed ability to participate in services, and the ability of the caretaker to provide a supportive environment and participate in services with the treatment environment selected by the clinicians (i.e., children identified as having the most severe clinical statuses, who were least able to participate in their own care and whose caregivers were least able to

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provide care, were more likely to be hospitalized). Children at the opposite extremes on these variables, however, were most likely to be referred for outpatient services. Children who scored as intermediate on the risk variables were those most often referred to the in-home intervention.

Additional characteristics of the 221 children served by the project in the three intensive, in-home interventions appear in Table 1. Particularly remarkable is the proportion of children with clinical diagnoses of psychotic disorders and the low incomes of their families, most of which are below the poverty line (see Evans, Boothroyd & Kuppinger, 1997).

One of the primary proximal outcomes of interest in this study is self-esteem. The Piers-Harris Children's Self-Concept Scale (Piers, 1984) was used to measure this variable. Based on the first 152 children who completed the three intensive interventions, the data show that the mean score at intake was 50.5, which was below that of a normative group of children with emotional disturbances. The data also show that the mean score at discharge had increased to 53.7, which is statistically significant at the .05 level. Figure 1 shows the subscale gains from entry to discharge. Children showed significant gains, ranging from .001 to .05, on all subscales except Popularity. A smaller sample ($N = 98$) of children with data from all three data collection points shows that the gains made between intake and discharge were retained at six months.

Child satisfaction with services is assessed at discharge from each of the in-home interventions. Children ($N = 158$) show high levels of satisfaction with nearly all aspects of their care. The only items with more than 20% of the children expressing dissatisfaction or a lack of clarity were: (a) knowing why the counselor or case manager came to see them initially; (b) being satisfied with the counselor

or case manager getting them other services; and (c) being terminated from service before they were ready.

In regard to the disposition of children, using the most complete data available at this time, which includes the 221 children reported here and an additional 75 children recently admitted, 296 children and families have been referred to the

Table 1
Characteristics of Children
Served by the Project ¹
($N = 221$)

Age	
Average	11.6 years old ($SD = 3.7$)
Range	4 to 17 years
Children	56%
Adolescents	44%
Gender	
Male	53%
Female	47%
Race/ethnicity	
Hispanic	59%
Black/African American	34%
White	6%
Diagnosis	
Disruptive behavior	29%
Adjustment disorder	18%
Mood disorder	13%
Psychotic disorder	11%
Functional impairments (Self-care, social relationships, cognitive, self-direction, motor functioning)	71%
Dangerous behavior	94%
Special education (Emotional disturbance)	53%
Prior mental health treatment	42%
Prior hospitalization	11%

¹ Reflects families of children who have been discharged from the three programs.

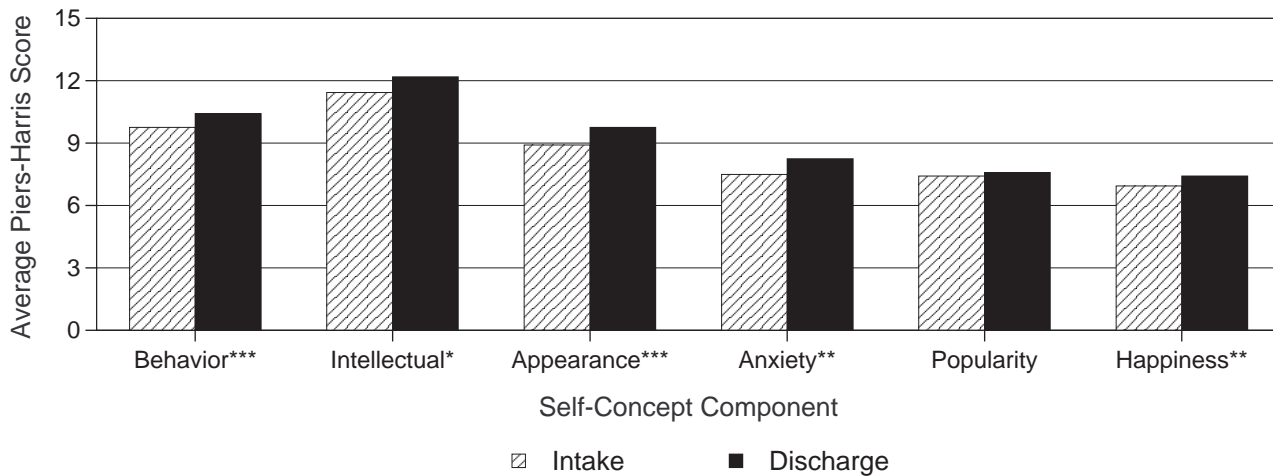
study. Of these, 233 completed the intervention, while 38 were considered early terminations (i.e., they did not complete the entire intervention). Twenty-five of the children required hospitalization at some time during the intervention. The most usual placement for children at both admission and discharge (88.9%) was living with their family or other relatives.

Discussion

The data presented reflect only a small sample of that collected during the research demonstration, which is still in progress. Based on these data, some questions have been raised regarding whether in-home crisis intervention programs are serving as a hospital diversion program in New York, as had once been expected. Clinicians, exercising their judgment, differentiate among children who are referred for hospitalization, for

in-home services, or for other community-based services. Despite the increased capacity the grant resources have brought to serve children and families in their homes, hospitalization rates have not changed significantly at the two participating hospitals (about 20%). Rather than preventing hospitalization, in-home services may represent another community-based option for children whose safety and clinical needs are not as acute as children judged as requiring hospitalization. It has not been determined what the hospitalization rates would have been at these hospitals without the introduction of these additional resources. Also, initial discussions with other researchers working in this area of study indicate that the children seen in emergency settings in the Bronx have more serious problems than children assessed in settings elsewhere in the country (Gutterman, Evans, Levine, Boothroyd, & Drennan, 1996). Additional

Figure 1
Children's Self-Concept
(N = 152)



*Gains from intake to discharge are statistically significant $p < .05$.
 **Gains from intake to discharge are statistically significant $p < .01$.
 ***Gains from intake to discharge are statistically significant $p < .001$.

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analyses are needed to answer the hospital diversion question.

Children enrolled in in-home services gained in self-esteem, and these gains were maintained over the follow-up period. Also, most were able to avoid hospitalization during the initial period of service. Avoidance of hospitalization assumes particular importance when considering the following points: (a) that many of these children appeared to be in crisis at the time of their presentation; (b) a significant minority were diagnosed with psychotic disorders and/or had been hospitalized previously; and (c) the overall dangerousness of the child's condition, on average, was determined to be moderate.

Since this study is still in progress, analyses have not yet been performed to examine the differential outcomes that may be associated with the three program models. There is support, however, for the assertion that children in psychiatric crisis and their families can receive effective, intensive supportive care safely in the community, and that gains in self-esteem persist for at least six months following discharge.

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Preliminary Family Outcomes of a Field Experiment on Intensive In-Home Interventions for Children in Psychiatric Crisis

Introduction

Every parent, every service provider, and every researcher working in the field of children's mental health shares the common concern that our service system be able to respond quickly and effectively to children who are experiencing a psychiatric crisis. Even as the range of community-based service options has expanded in recent years, and even though there has been an increased commitment to prevent unnecessary hospitalization, there is little research available to help us understand which models of crisis intervention are effective, for whom, and under what circumstances.

In 1987, New York State initiated Home-Based Crisis Intervention (HBCI), modeled on the Homebuilders program developed in Tacoma, Washington (Kinney, Madsen, Fleming, & Haapala, 1977). HBCI provides short-term, intensive, in-home services to families whose children are at risk of out-of-home placement because they are experiencing a psychiatric crisis. Beginning in 1992 with a research and demonstration grant from the National Institute of Mental Health (1R18MHS0357) and the Center for Mental Health Services (SHDSSM50357), a three-year field experiment was conducted to evaluate the effectiveness of HBCI and two additional short-term crisis intervention models, Enhanced Home-Based Crisis Intervention (HBCI+) and Crisis Case Management (CCM). The

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purpose of the study was to evaluate the family, child, provider, and system outcomes of these three interventions. The study took place in the Bronx, New York, to assess the impact of these interventions with a population that was ethnically diverse and under extreme economic stress.

Each program offered in-home services for four to six weeks, with small caseloads ranging from two to eight families per worker. Workers had flexible schedules and were available by beeper, 24 hours a day, seven days a week. Two of the programs, HBCI and HBCI+, followed the Homebuilders model, which employs a cognitive behavioral approach for defusing crises and teaching skills while linking families to a variety of ongoing services. HBCI+ has the added resources of in-home and out-of-home respite care, a parent advocate, a parent support group, flexible service dollars, and additional training on cultural issues as well as on the impact of violence on children. The third program, CCM, is a short-term adaptation of an intensive case management (ICM) program. Workers in CCM carry four crisis cases and four longer-term ICM cases. The focus in CCM is on assessing need, providing concrete services, and linking the client to ongoing services. Families enrolled in CCM also have access to respite care services. More information about the three interventions can be found elsewhere (Evans, Boothroyd, & Armstrong, 1996).

This summary describes the characteristics of the families who were enrolled in the study and reports preliminary findings (aggregated across all three interventions) on family outcomes as measured by: (a) the Family Adaptability and Cohesion Evaluation Scales II (FACES II: Olson, Portner, & Bell, 1982); (b) the Inventory of Socially Supportive Behaviors (ISSB: Barrera & Ainlay, 1983); (c) the Parent/Caregiver Self-Efficacy Scale; and (d) the Parent/Caregiver Satisfaction Survey. The latter

two measures were developed by researchers in the Bureau of Evaluation and Services Research of the New York State Office of Mental Health. Another presentation in these proceedings (Evans, Boothroyd, & Holohean, 1996) focuses on child outcomes.

Method

From November, 1993 through December, 1995, all children who presented at two emergency rooms were screened for eligibility for the study. To be eligible, children had to be between 5 and 17 years of age. Children also had to live in the Bronx in a natural, adoptive or foster home with a caregiver who was willing to participate, and the child had to be able to remain at home safely with intensive services even though they had significant mental health needs. The emergency room psychiatrists and psychiatric social workers conducted the assessments and were instructed to refer only children who would likely be hospitalized in the absence of crisis intervention services.

All eligible children whose parents consented to participate were randomly assigned to one of the three programs. Data were collected at intake, discharge from the intervention, and six months following discharge. The data reported here are preliminary. More in-depth analysis will be conducted when data collection is complete in the fall of 1996. In all, 296 children were referred to the study, 233 were discharged, 38 withdrew from the study prior to discharge, and 25 were hospitalized during the intervention. Descriptive data and satisfaction data are presented for the approximately 221 families discharged as of January 1996. Data concerning changes from intake to follow-up are presented for approximately 115 families for whom six month follow-up data were available.

Family Outcomes of Intensive In-Home Interventions

Results

The families enrolled in this project were representative of the demographics of the Bronx. Sixty-three percent were Hispanic, and 26% were African American. Eighty percent of the families had annual incomes of less than \$20,000, with 53% below \$10,000. Only 20% of the primary caretakers were employed. Seventy-two percent of the caretakers were single parents. Fifty-five percent of the primary caregivers had completed high school.

The average age of enrolled children was about 11.5 years, with slightly more children (56%) than adolescents. Disruptive behavior (29%) and adjustment disorder (18%) diagnoses were the most common. Seventy-one percent of the children had at least one functional impairment, and 94% were judged to have behaviors that endangered themselves or others. While the majority of children were in special education (53%), and many had received prior mental health treatment (42%), relatively few had been previously hospitalized (11%).

On FACES II, statistically significant gains were found in both cohesion and adaptability from intake to discharge. The six month follow-up assessments indicate some erosion in these gains, which is statistically significant for the cohesion subscale (see Figure 1).

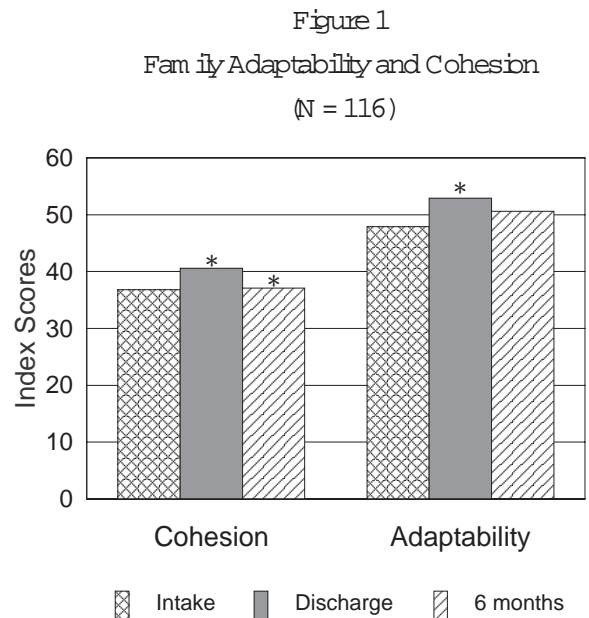
A preliminary analysis was conducted to determine if there were any child or family characteristics that might distinguish between families who experienced more positive versus more negative outcomes as measured by FACES II. None of 21 characteristics examined (e.g. age, gender, diagnosis, family composition, maternal education level) were found to be significant.

The Parent/Caregiver Self-Efficacy Scale assesses how comfortable parents feel with their parenting skills and ability to care for their child. Intake to follow-up gains in caregiver self-efficacy

are presented for four of the domains assessed (i.e., behavioral management skills, dealing with school-related issues, ability to advocate, and providing emotional support). Of these, only the gains in behavior management and emotional support were statistically significant. There was a statistically significant decline from intake to follow-up in caregivers' feelings of being able to effectively meet the basic needs of their children (see Figure 2).

The ISSB indicated an extremely low level of perceived informal support among all enrolled families (average score = 86 out of a possible score of 200). Preliminary findings suggest that the interventions have little impact here, and that there is actually a decline from discharge to follow-up, which is statistically significant (see Figure 3).

Each child and primary caregiver is asked at discharge to complete a satisfaction questionnaire. Caregivers were particularly satisfied with the counselor or case manager's advice, cultural under-



* Change from previous time period is statistically significant.

standing, and handling of personal issues. Similarly, caregivers were very satisfied with the help they received, their access to the counselor or case manager, and the extent to which their counselor or case manager was well-informed (see Figure 4).

There was a little less satisfaction with the counselor's or case manager's ability to link the family with other services, the quality of skills teaching, the time it took the worker to contact them upon referral from the emergency room, and the overall frequency of contact. Nevertheless, even on these items, the percentage of caregivers who reported that they were very satisfied never fell below 80%.

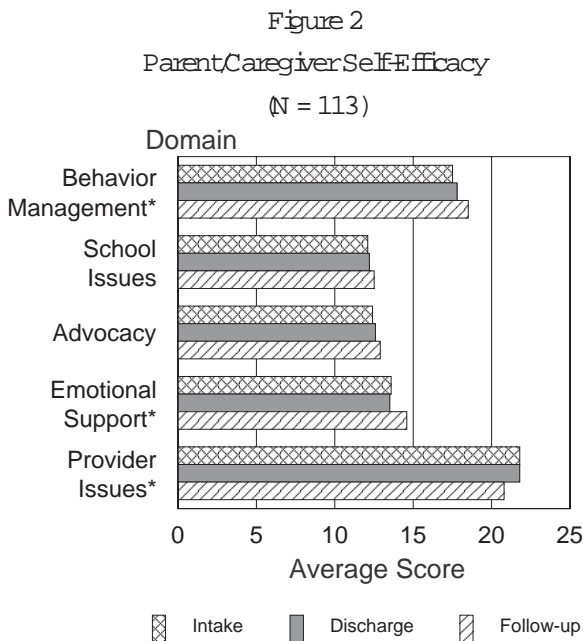
Discussion

The results presented in this paper are at first glance a small subset of the data collected during this field study which is still in progress. While the children are the primary subjects of the study, our

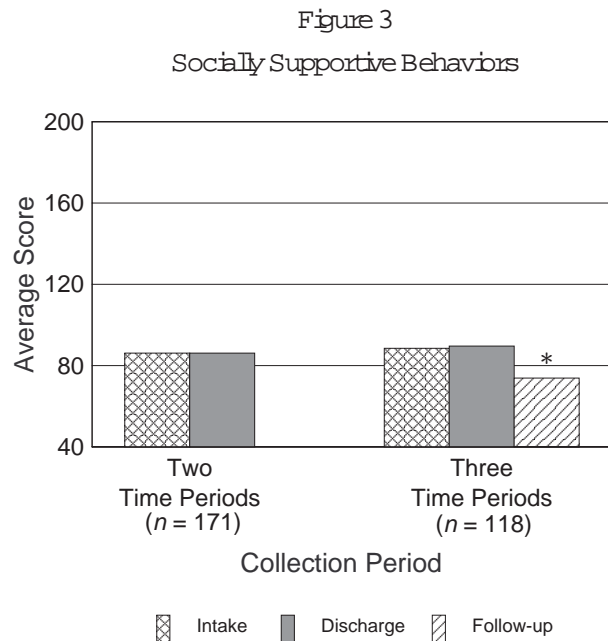
examination includes an in-depth look at the families who care for and support each of these young persons on a day-to-day basis.

In this preliminary analysis of change on three family/caregiver measures, we have aggregated results across all three interventions. Given the focus of at least two of the interventions on family problem solving and communication, it is not surprising to see gains in both dimensions of FACES II from intake to discharge. The erosion in these gains from discharge to follow-up may be related to the fact that, while some families were referred to other community-based services upon discharge, few of these services were as intensive, and most did not focus specifically on maintaining these gains.

As suggested by the extremely low baseline scores on the ISSB, the families enrolled in these interventions are not only grappling with significant stress, but the majority are doing so in isolation.



* Denotes a significant change from intake to follow-up.



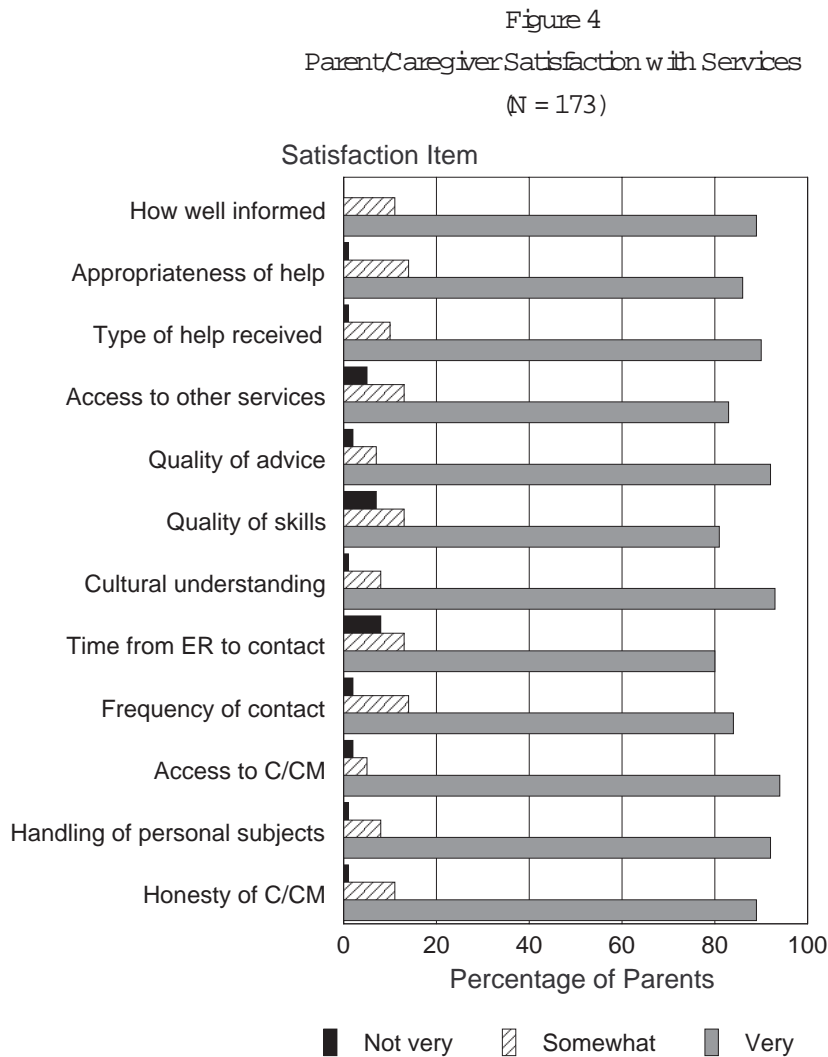
* Change from previous time period is statistically significant.

Family Outcomes of Intensive In-Home Interventions

None of the interventions focused specifically on broadening family's networks of support, and in the six weeks from intake to discharge, no significant change was measured. A sense of loss following discharge from an intensive intervention is one possible explanation for the significant decline from intake to follow-up. In future analyses, we will look at this issue more closely to determine if there are differences among the three interventions or differences based on the degree to which families participated in family support and recreational

activities. We will also look at whether there is any correlation between the perceived level of informal support and other outcomes.

Clearly, there are many more analyses to be conducted to explore the myriad questions embedded in this study. In designing an analytic plan, we will take a variety of approaches that might include the use of composite measures, the weighting of certain measures based on a rationale associated with the intent of the intervention, and other strategies. While preliminary findings



support the hypotheses that children in psychiatric crisis can remain safely at home with intensive in-home services, future analyses will hopefully enable us to comment in more detail about which interventions work best for which children and their families and why.

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Addressing Children's Exposure to Violence in a Short-Term Crisis Intervention Program

Introduction

The Bronx is a community plagued by chronic violence. In 1994 Bronx county was ranked first in New York State counties for violent crimes with 2,316 violent crimes per 100,000 people. In 1994 the Bronx had the highest murder rate of any New York State county (33/100,000) representing 20% of all the state's murder arrests. A story on the front page of the Bronx Daily News (Monday, September 11, 1995) indicated that only two Bronx elementary schools reported no weapons possession cases during the year and only one school reported no serious assaults on students at school. Another story that same day reported the confession of four Bronx teenagers arrested for the murder of a 19 year-old mother and a bystander at a local playground. The motive—a dispute stemming from a softball game two days earlier. While it is difficult to specifically quantify the impact of community violence, the behavioral consequences of children living in chronically violent communities has been widely documented and include difficulty concentrating, memory impairment, increased anxiety, aggressiveness, and uncaring behavior (Garbarino, 1995).

During the past four years the NYS Office of Mental Health has been conducting a study in the Bronx, NY comparing the effectiveness of three models of intensive in-home, emergency services as an alternative to hospitalization for children and adolescents experiencing psychiatric crisis. Two hundred and ninety-six eligible children were randomly assigned to one of the three models and

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received four to six weeks of services. While the support services available to families differed across the three program models (e.g., respite care, support groups, parent advocacy, etc.), each model provided families with intensive services (i.e., small caseload sizes ranging from 2 to 8 cases) that were available 24 hours a day, seven days a week and delivered in a family's home.

This summary (a) summarizes the data collected from some of the children and adolescents in this study regarding their exposure to violence and its effect; (b) briefly describes the training, technical assistance, and case supervision counselors received focused on violence issues; (c) summarizes selected strategies that workers use as a result of these efforts to address the effect of violence; and (d) presents a case study demonstrating how violence was interwoven in the life of one child and her family.

Collection of Violence Data

Respondents - Children surveyed were among those children referred from a psychiatric emergency room to receive approximately four to six weeks of intensive in-home services as a result of a recent psychiatric emergency. The children ranged in age from 5 to 18, were living at home with their biological, foster, or adoptive families, and had experienced a psychiatric crisis that would have required hospitalization without the availability of intensive in-home services. As of January 1996, 36 children had been interviewed about their exposure to violence.

The ten counselors providing the intensive in-home services were interviewed in order to retrospectively obtain individual case information for the purpose of constructing a series of case studies.

Measures - During the regularly scheduled six month follow-up interview the children who received intensive in-home services were asked a series of questions regarding: (a) their exposure to violence, (b) how safe they felt in various settings, and (c) their knowledge of other children carrying weapons.

A semi-structured interview protocol was designed and used with counselors at the end of the study. The protocol focused on specific aspects of individual cases they had handled during the study with particular emphasis on violence issues.

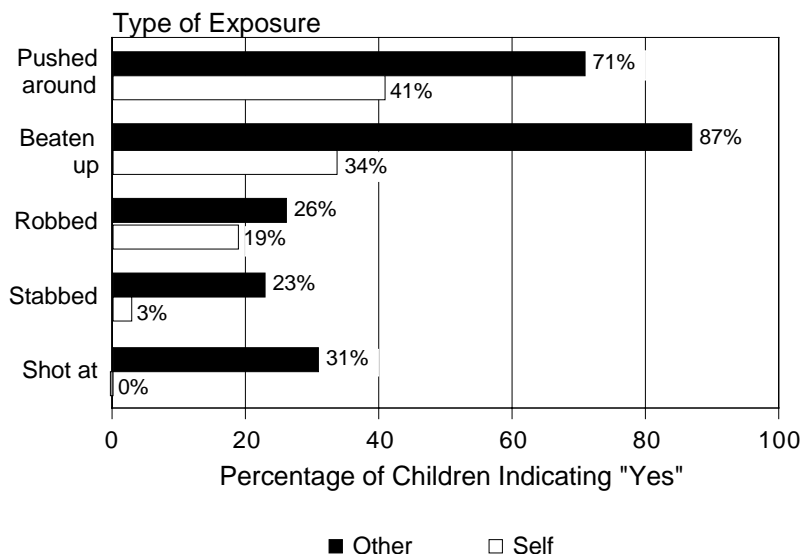
Analysis - Descriptive statistics were used to report children's responses to the questions on violence. Case study methodologies were used to synthesize and summarize the counselor interviews.

Findings from Interviews with Children

To what extent are children exposed to violence?

Figure 1 summarizes the responses of the children to several questions regarding their personal experience with various types of violence. As shown in this figure, 87% percent of the children surveyed

Figure 1
Children's Exposure to Violence
(n = 36)



Crisis Intervention for Children Exposed to Violence

reported having witnessed someone being “beaten up” while 34% reported that they had been beaten up. Over one quarter of the children (26%) indicated knowing someone who was robbed while nearly one fifth of the children (19%) indicated having been robbed. Almost one quarter of the children (23%) knew of someone who had been stabbed while 3% reported having been stabbed themselves. Although none of the children interviewed had been shot at, nearly a third of the children (31%) knew someone who was shot at.

Do the children have friends who carry weapons?

Children were asked if they had friends who carried weapons. Approximately 40% of the children interviewed reported having friends who carry a knife. Nearly a quarter of the children (24%) reported having friends who carried a gun while 30% of the children had friends who carried some other type of weapons. The most popular among other weapons were razor blades and box cutters.

Where and with whom do children feel safe?

The children were asked several questions about how safe they felt in various places alone or with adults. These responses are summarized in Figure 2. As is shown in this figure, half of the children (50%) reported feeling unsafe on the streets by themselves. Forty percent felt unsafe at the movies, 29% unsafe at school, and 19% unsafe at home. Across all settings, children reported feeling safer when accompanied by an adult; however, 20% still felt unsafe on the streets even when they were with an adult.

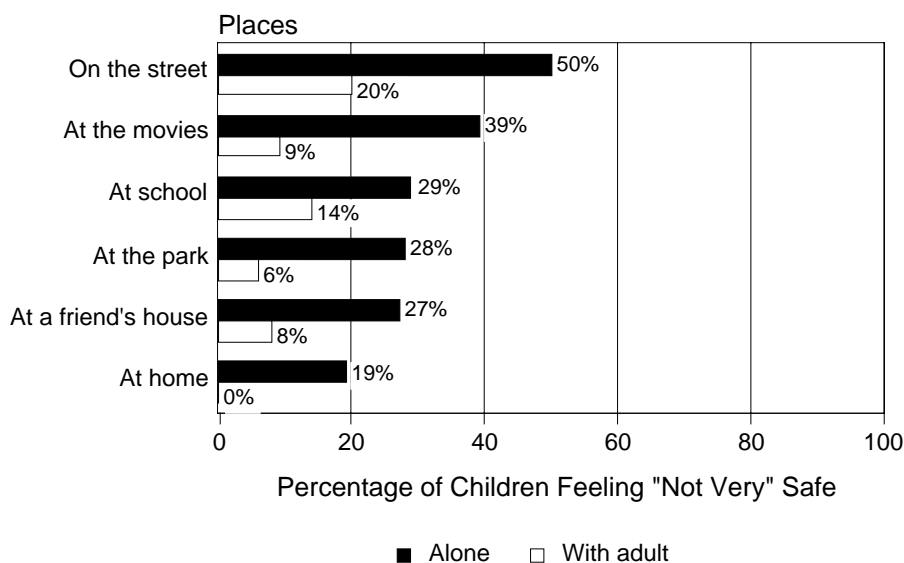
Enhancing Counselors' & Case Managers' Abilities to Respond to Violence

Three activities were undertaken in an effort to enhance counselors' ability to respond to issues related to violence while working with children and their families. These activities included the provision of specialized training, technical assistance, and case supervision focused on violence issues.

Dr. Marsha Lewis from Edge Associates in Pittsburgh, PA conducted a two day training program entitled “Family Systems Theory as a Framework for Understanding Family Violence.” This purpose of this training was to provide counselors and case managers with a conceptual framework grounded in family systems theory to better understand the dynamics of domestic violence and how to implement practical intervention strategies.

Dr. James Garbarino, Director of the Family Life Development Center at Cornell University, provided counselors with four days of technical assistance and case

Figure 2
Children's Assessment of Their Safety in Various Places
(n = 36)



review. His focus with the counselors was on the negative consequences that trauma exerts on children and the development of strategies for dealing with these consequences.

Ms. Katherine Gordy-Levine, Coordinator of the Enhanced Home-Based Crisis Intervention program, provided case supervision for her staff on violence issues using a conceptual framework she developed that included three intervention levels: (a) providing *support*, which includes meeting concrete needs and addressing immediate safety issues as well as listening and affirming; (b) enhancing *cognitive* strategies through teaching skills (e.g., fair fighting, relaxation techniques) and coping strategies (e.g., developing planned responses to specific situations); and (c) the use of *environmental modifications* (e.g., removal of a family member, moving to a new apartment) or *external options* (e.g., medication).

Selected Strategies Counselors and Case Managers Use to Respond to Violence

As a result of the activities described above, the counselors employed a variety of strategies in response to the ongoing presence of community and domestic violence as part of the intensive in-home services they provided. Early in the intervention they conducted a safety analysis of the home environment examining various aspects of the home ranging from the adequacy of the door locks to the presence of possible weapons or dangerous implements in the home. Flexible service dollars could be used to purchase new locks or make necessary safety repairs. Plans were implemented with families to reduce the risks of other potential dangers in the home. During the intervention they promoted future-oriented activities with the child and family such as gardening, taking care of pets, and schooling to respond to the hopelessness that typically accompanies living in a

community plagued with violence. Counselors and case managers also promoted greater participation in face-to-face family activities such as playing games to replace solitary activities such as watching television. As a therapeutic response, they often had children develop written journals to help them deal with their exposure to trauma.

The Story of Susan and Her Family

Susan (a pseudonym) was a 15 year-old Jamaican female with no prior history of mental health treatment. A former boyfriend and his friends broke into her family's apartment, burglarized it, and sexually assaulted Susan and her mother. In her attempt to escape and get help, Susan jumped from a second floor window, breaking both of her legs. Out of fear and anger stemming from this assault, Susan's mother refused to bring her home from the hospital.

Susan and her family were referred for intensive in-home services. First, the counselor met the family prior to Susan being released from the hospital and helped facilitate an agreement between Susan and her family that would allow her to come home. Flexible service dollars were used to repair the window and fix the door locks. The counselor taught the family specific communication skills involving the use of "I statements" and "feeling statements" to improve communication among the family members and to reduce blaming. The counselor also explained the effects of trauma and taught them relaxation techniques to help them with the increased arousal they experienced in response to this event. The counselor helped the family plan fun activities together and referred them to victim services and a mental health clinic for ongoing support.

As a result of these efforts, Susan was able to remain at home with her family. According to the counselor, the number and quality of the interactions

Crisis Intervention for Children Exposed to Violence

between Susan and her other family members also increased during the intervention. Finally, the family was linked to support services to continue to help them cope with the effects from the violent assault.

Summary and Discussion

In addition to the specific psychiatric needs of these children, for many, issues of violence have also been a persistent threat. Given this fact, the intervention provided to these children and their families has attempted to systematically address violence issues within the context of the provision of short-term intensive, in-home crisis services. Staff have received specialized training, technical assistance, and case supervision throughout the study in an effort to incorporate strategies that hopefully will begin to ameliorate some of the negative consequences associated with living in communities and households where violence is present.

The responses of the children interviewed indicate that many have witnessed or personally experienced violent acts. Many of the children report feeling unsafe when alone in their neighborhood, at school, and most disturbing, in their homes. While the presence of an adult helps promotes feelings of security for many children, for many others it does little to calm their fears. Their response—carry a weapon and provide one's own protection.

While the primary goal of the services provided as part of this study is to abate an existing psychiatric crisis thereby avoiding hospitalization, the need to place emphasis on reducing the myriad of stressors that impact these children and families has become increasingly evident during this study. We cannot specifically document the degree to which the increased emphasis placed on incorporating strategies for dealing with violence in this study has resulted in improved outcomes for children and their families; nevertheless, we do know that for Susan, her mother, father, and brother, the

impact of violence was central to their family's crisis, and that the counselor's strategies allowed Susan to remain at home, while helping the family cope with the lingering and dramatic effects of the violence inflicted upon them.

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Modeling Utilization of Child Residential Psychiatric Treatment

Introduction

Much concern has been expressed about the high utilization rates of psychiatric hospitals, both public and private, for children and adolescents in our nation and in the State of Tennessee. These restrictive placements may not meet the needs of the child so placed, perhaps causing harm in some cases, and are so expensive that they deplete what are already scarce fiscal resources. The establishment of a continuum of mental health care that would offer a range of services has been the goal of the Tennessee Department of Mental Health for several years and was a focus of the Tennessee Children's Plan.

The Tennessee Children's Plan represents Tennessee's efforts to reorganize the delivery of services to children through a coordinated service system for children, youth, and families. The Children's Plan was phased in over the 18 month period between October, 1991 and April, 1993. Although state resources have been channeled into communities toward less restrictive care, residential services are still heavily used. In Tennessee, millions of state dollars flow both into the public and private service sectors under TennCare (the Medicaid waived managed care system for Tennessee) for inpatient psychiatric care. In addition, departmental funds have been used to pay for residential services not reimbursed by the TennCare or other third-party-payor systems.

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This ongoing study was designed to provide some very basic information for filling some of the numerous gaps that exist in the knowledge base about the use of both inpatient and residential mental health care for children and adolescents in state care. This summary presents data from three aspects of the project: (a) the Baseline Survey, (b) Baseline - 1995 comparisons, and (c) patterns of placements leading to hospitalization.

Method

Sample

This study focused on children and youth, ages birth through 21 years, who were in the custody of the State of Tennessee on two points-in-time: July 31, 1991 ($N = 8,467$) and January 31, 1995 ($N = 11,131$), representing “before” and “after” snapshots of the implementation of the Tennessee Children’s Plan. All children in custody on those dates were included in this study. The population, overall, was 55-58% female (see Table 1), 34-37% African-American, and spread across all age groups. Children had been committed to the custody of the following state agencies: Youth Development (15%); Education (2 - 4%); Human Services (81%); and Mental Health and Mental Retardation (< 1%).

Sources of Data

Two existing state databases were analyzed for this study. The “Modeling Utilization” project uses existing state databases and integrates information in order to be able to link services provided to children and youth by multiple agencies over time. These two databases were reviewed for equivalence of item content and variables; the

Table 1
Characteristics and Custodial Department of Children in Custody:
1991 and 1995

Characteristics and Custodial Department of Children	Total Children in State Custody		Children with Mental Health Needs	
	1991	1995	1991	1995
Total Number	8,467	11,131	4,016	3,945
Gender				
Female	45%	42%	39%	36%
Male	55%	58%	61%	64%
Race				
African-American	34%	37%	29%	35%
White	64%	62%	69%	64%
Other	2%	1%	2%	1%
Age				
Birth - 5 years	20%	20%	4%	3%
6 - 12 years	24%	22%	20%	18%
13 - 15 years	23%	25%	31%	35%
16 - 18 years	30%	31%	43%	43%
19 - 21 years	2%	2%	2%	1%
Custodial Department				
Youth Development	15%	15%	23%	22%
Education	4%	2%	3%	2%
Human Services	81%	81%	70%	71%
Mental Health & Mental Retardation	<1%	2%	2%	3%

Modeling Utilization of Residential Psychiatric Treatment

comparisons presented represent those with items having good match between data sets.

Baseline survey: 1991. A baseline survey was conducted by the Tennessee Commission on Children and Youth for all children in state care on July 31, 1991. The study was designed to provide a baseline description of the population of children and youth in state care prior to the implementation of the Tennessee Children's Plan.

1995 Follow-up. The Client Operations and Review System (CORS) database was used for 1995 comparisons. January 31, 1995 was chosen as the point-in-time comparison based on completeness of the data fields of interest. CORS is maintained for all children served by the Children's Plan.

Analyses

Descriptive statistics were used to profile the similarities and differences in the characteristics of the youth. Children were identified with mental health needs if one or more of the following was present: (a) presence of a mental health diagnosis, (b) placement at any time during custody in a residential treatment center designated as a mental health setting, or (c) placement at any time in custody in a psychiatric hospital. To examine patterns of placement, the six most recent placements were arranged in sequence and resulting patterns were collapsed to form no more than 15 types of sequences.

Results

First, characteristics of the children in custody in 1991 and 1995, respectively, are examined. Next, the subpopulation of children with identified mental health needs is described. The use of residential psychiatric placements and patterns of placement leading to hospitalization are then presented.

Children in Custody in Tennessee: 1991 and 1995

Of the total children in custody in 1991, almost half (47.5%) had some documented mental health need. Slightly more than half of the total were males (see Table 1). The average age of children in state care was 12 years, although those who were admitted to a psychiatric hospital were slightly older (14 years), and those admitted by a Juvenile Court Commitment Order (JCCO) were older still (15.6 years). Between 1991 and 1995, the total number of children in custody increased by almost 3,000 children. Only 35% of the children in custody in 1995 had a documented mental health need. There were only slight differences between 1991 and 1995 in the *proportions* who were either male or African-American, or of a given age group for the total population.

Most of the increase in the number of children in custody occurred with children who did not have a documented mental health need (from 4,451 to 7,186; a 61% increase), were male (40% increase), African-American (47% increase), young adolescents (43% increase), and were assigned to the department of human services (33% increase).

Children with Identified Mental Health Needs: 1991 and 1995

Although the proportion of children identified with mental health needs decreased (47.5% to 35%) as the total number of children in custody grew, the actual number of children with mental health needs remained relatively stable over this period (from 4,016 to 3,945). There was some slight increase in the proportions who were male (as opposed to female), or African-American, and there was a slight increase in the proportion who were age 13-15.

Heflinger & Simpkins

Children with mental health needs were in state custody an average of 761 days in 1991 and 645 days in 1995. They most often lived in foster care (44% in 1991 and 33% in 1995; see Table 2). In 1991, there were 120 children in public psychiatric hospitals (3%) and 122 in these settings in 1995 (also 3%). In 1991, there were 180 children in private psychiatric hospitals (5%), and this number dropped to 49 (1%) in 1995. The placements for Level III residential treatment centers (RTC-IIIs), which provide 24-hour care for emotional and behavioral problems, increased dramatically from 268 (7%) to 626 (16%) from 1991 to 1995.

Children in residential psychiatric treatment had been in their current placements, on average, over 6 months (see Table 2). There was a decrease of 34 days (from 215 to 181) in the average days of

placement in a public psychiatric hospital, but increases of 55 days in the length of stay in private psychiatric hospitals and 56 days in the length of stay in RTC-IIIs. The lengths of stay shown in Table 2 are slightly misleading since they include only the children who had not left those settings and therefore include those with very long stays. For those who had completed a residential psychiatric treatment for the 1995 data only, it was found that the average days in placement for completed residential treatment was 92 days for stays in public psychiatric hospitals, 89 days for stays in private psychiatric hospitals, and 163 days for completed stays in RTC-IIIs. In 1991, 22% of the children currently in public psychiatric hospitals had been there 30 days or less, in 1995 the comparable figure was 18%. The corresponding figures for private psychiatric hospitals

were 32% for 1991 and 22% for 1995. For those staying over one year in public psychiatric hospitals, the percentage was 11% in 1991, and for 1995, it was 8%; and for private psychiatric hospitals 5% had stayed over one year in 1991, and 14% had stayed this long in 1995. The actual maximum days for a current psychiatric hospitalization in a public hospital were 3,378 days in 1991 and 1,076 days in 1995. The maximum days for private psychiatric hospitalizations were 771 for 1991 and 717 for 1995. In 1995, the total days of residential psychiatric care, which includes psychiatric hospitalization and RTC III placements, was 211% of that for 1991, increasing from a total of 97,044 in 1991 to 206,307 in 1995.

Table 2
Days in Placement and Selected Placement Types
for Children with Mental Health Needs: 1991 and 1995

Characteristics and Custodial Department of Children	Children with Mental Health Needs		Days in Placement	
	1991	1995	1991	1995
Total ¹	4003	3940	331	335
Foster care	44%	33%	554	590
Public psychiatric hospital	3%	3%	215	181
Private psychiatric hospital	5%	1%	102	157
RTC-Level III	7%	16%	226	282
RTC-Level II	9%	9%	211	234
RTC-Level I	12%	7%	318	350
Youth Correction Center /Detention	10%	5%	177	149
Other	10%	26%	260	259

The total numbers differ slightly from those shown on Table 1 due to missing data for the placement variable.

Modeling Utilization of Residential Psychiatric Treatment

When compared to 1991, children in psychiatric hospitals in 1995 were more likely to be African-American (42% vs. 22%), and more likely to be in the custody of the Department of Youth Development (15% vs. 8%). Children in residential treatment centers in 1995 were more likely to be male (82% vs. 67%) and in the custody of the Department of Youth Development (24% vs. 18%) when compared to 1991. For both years, the most common diagnoses listed for children in residential psychiatric treatment were behavior problems, depression, and adjustment disorders.

Psychiatric Hospital Placements

For the 1995 data, reflecting only those children in state custody on January 31, 1995, considerably more information was available on placement history. A total of 903 children had been placed in a psychiatric hospital within the current custody period and the past 6 placements. This amounts to 8% of all children in custody and 23% of all children with mental health need who were in custody on January 31, 1995. Of those 903 children, 19% were currently (i.e., on the target date) in a psychiatric hospital (122 children in public hospitals and 49 in private hospitals). A total of 52% had been in a psychiatric hospital multiple times while in custody: 429 (48%) had only one hospitalization, 349 (39%) had two hospitalizations, 10% had 3-5 hospitalizations and 3% (26 children) had 6 or more hospitalizations. For the 171 children currently in psychiatric hospitals on the target date in 1995, this was the initial custody placement for 26 children (15%). The placement experiences since entering state custody of the children currently in psychiatric hospitals were varied:

- 23% in a private psychiatric hospital only;
- 16% in a public psychiatric hospital only;
- 4% in both public and private psychiatric hospitals;

- 10% in a RTC and a psychiatric hospital;
- 8% in an assessment center and a psychiatric hospital;
- 8% in foster care and a psychiatric hospital;
- 7% in a family setting and a psychiatric hospital;
- 5% in a Youth Development setting and a psychiatric hospital; and
- 2% in some other setting and a psychiatric hospital.

Most referrals to a psychiatric hospital might better be called transfers since the level of care or restrictiveness of the setting did not change. A full 28% of those currently in public psychiatric hospitals had come from another public psychiatric hospital program to the current setting. For current private psychiatric hospitalizations, this percentage was 27%. However, from the child's perspective, even these transfers represent an actual change in their living environment and the accompanying stressors.

Discussion

Use of restrictive, residential psychiatric placements increased from 1991 to 1995. These data indicate that the Children's Plan, while decreasing the use of psychiatric hospitals, has shifted children to longer-stay residential treatment centers. Any savings that might have been incurred through decreased use of hospitalization has been more than taken up through this increased use of RTCs. Furthermore, a significant proportion of the children in state custody experience multiple and long-stay institutional experiences.

The description of children in custody, those identified with mental health needs, and placement patterns were the focus of this summary. These are first steps needed to provide background information about the population and use of residential placements before proceeding with further efforts toward modeling service utilization and patterns of care.

Replication of a Crisis Shelter Model of Care in Staff Secure Detention Programs

Introduction

Historically, children have been placed in out-of-home care in alarming numbers. For example, between October 1985 and June, 1988, 102,000 youth in the US sought services in shelter care programs (US General Accounting Office, 1989). In 1990 alone, juvenile correctional facilities reported 98,000 admissions to long-term public facilities (Snyder & Sickmund, 1995). As would be expected, youth who find themselves in these settings have a variety of service needs. This summary presents preliminary evidence for the effectiveness of a model of care designed to provide safe and effective services in both short-term shelter and short-term staff secure detention programs.

Initially, Boys Town's short-term crisis shelter programs were designed to provide a safe and therapeutic environment for homeless and runaway youth in need of short-term crisis services. Over time, the mission of the shelter program changed and evolved, and the program now provides a range of short-term residential programs. These programs serve youth with a variety of residential needs, including homeless/runaway youth, troubled youth in need of a short-term residential facility, and youth in need of a staff secure detention facility.

Most recently, efforts have focused on developing strategies to serve youth in need of *staff secure* detention facilities. Staff secure detention programs are short-term residential settings for youth

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awaiting adjudication, disposition, or placement. The term "staff secure" indicates that these facilities are not locked or guarded. Currently, Boys Town operates one program designated as a short-term, staff secure detention facility in Brooklyn, New York. This facility serves only males who are referred by Brooklyn's juvenile justice system. This program is designed to reflect a guiding principle within juvenile justice: Juveniles should be housed in the least restrictive placement alternative; this is true for both short-term and long-term placement (Snyder & Sickmund, 1995).

Boys Town currently operates a total of eight shelter programs. In this summary, data obtained from over 2,000 admissions to these programs between January, 1994 and July, 1995 are presented. These programs are located in Brooklyn, NY; Los Angeles, CA; Oveido, FL; San Antonio, TX; New Orleans, LA; Las Vegas, NV; and Grand Island, NE. The eighth program in Washington, DC opened in August of 1995; there are no data from this site to report at this time.

Method

Youth from each of these shelters demonstrate remarkable similarity in their profiles. Our research indicated that youth are all about the same age (i.e., 14 years), and have similar problems—both at the individual and family level. At intake, all youth were asked a series of 37 questions regarding problems they have experienced. Of these, 11 problems emerged as the most common youth problems across all seven sites. These youth problems were best characterized as delinquent behavior, school problems, substance use issues, out of control behavior, and mental health issues. A similar pattern was evident with family stressors, with 17 stressors out of 34 emerging as the most common across all seven sites. These stressors were best characterized as substance use, criminal involvement, parental marital problems, parental financial issues, and parental discipline issues. Youth also were administered the Achenbach Youth Self-Report (YSR; Achenbach, 1991) at intake. Youth from all sites had similar YSR profiles. There was little variation among these profiles on any of the subscales or broad band scales, with none of the subscales or broad band scales approaching the clinical range. Relative to the other scales, the only subscale that showed a slight elevation was the Delinquent subscale. Although the Delinquent Behavior

subscale was elevated across all sites, there was no variation among the sites on this dimension.

Results

Indicators of Program Success

One indicator of the success of these programs, both for short-term residential and staff secure detention, was the low occurrence of negative incidents as measured by an incident index. This index is comprised of 14 negative incident codes. Examples of these codes include physical aggression, out of control behavior, runaway, inappropriate behavior, suicidal gestures, etc. The average number of negative incidents per youth per length of stay ranged from 2.42 to 8.73, computed by taking the total number of incidents per site and dividing that number by the total number of youth per site. Broken down further, the average daily number of negative incidents ranged from .15 to .41, computed by dividing the average number of negative incidents per site by the average length of stay. The average number of negative incidents per youth per stay was relatively low across all sites, including the NY site which houses youth in need of a staff secure detention facility. The background of the NY site's youth might lead one to expect this site to have far more negative incidents than the other sites. Although the NY site did have the greatest number of negative incidents (.41 per day), this rate was not inconsistent with the other sites.

Another indicator of program success was the results of the satisfaction survey completed by youth. At departure from the program, all youth were asked to complete a satisfaction survey. The survey is comprised of nine items and asks questions regarding the youths' satisfaction on the following dimensions: staff fairness; freedom to discuss problems with staff; staff concern for youth; staff pleasantness; staff's efforts with helping youth to get along with others; recreation activities; counseling;

contact with family; and sharing opinions. An average Overall score was computed by collapsing the subscale scores across all dimensions. The scale was based on a 7 point Likert-type scale, with 1 = *completely dissatisfied* and 7 = *completely satisfied*. Survey results were consistently high across all sites, with overall scores ranging from 5.92 to 6.23. Satisfaction ratings across all dimensions were high across all sites indicating that youth reported that they were satisfied with the program, irrespective of the program's focus.

Placement data showing whether a youth was placed in another out-of-home setting or reunified with his/her family provided an additional indicator for program success. Data was obtained for every youth at departure regarding their placement upon completion of the program. The Restrictiveness of Living Environment Scales (ROLES; Hawkins, Almeida, Fabry, & Reitz, 1992) was used to categorize these placements (e.g., group home, county detention center, foster care, etc). The percentage of youth reunified with their families ranged from 23.1% to 78.1%.

Reunification appeared to be directly related to the purpose of the shelter site (i.e., whether the shelter functioned as a short-term residential placement or not). For example, sites which operated as short-term residential facilities had a fairly high rate of placing the youth with a parent or relative at departure (FL, NE, TX, & CA). The other sites had much lower placement rates with parents or relatives, which seemed to correspond to site-specific characteristics which impacted reunification for youth served. For example, the Louisiana site served a large population of youth who were homeless due to abandonment by their parents or to situations such as incarceration of a parent. Thus, reunification was not an option for these youth. Similarly, the NY site was used as staff secure detention for many youth on their way

to a juvenile detention center. Although the reunification percentage in NY was low compared to the other sites (34.4%), it is worth noting that this percentage is remarkably high given that these youth were being detained by the juvenile court awaiting adjudication.

Conclusion

In summary, these data suggest that a model of care developed for crisis shelter care can be replicated in geographically diverse locations with youth who have a variety of serious personal and family problems. These data also suggest that this model can be successfully implemented in short-term residential and staff secure detention programs.

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Evaluating the Appropriateness and Effectiveness of Long Term Inpatient Psychiatric Treatment for Adolescents

Introduction

With the JCAHO's "Agenda for Change" and the advent of managed care, outcome assessments have become increasingly important to psychiatric hospitals (JCAHO, 1992). In response to these new challenges, a Severity of Illness Rating Scale (SIRS) was incorporated into the clinical assessment process at Arthur Brisbane Child Treatment Center to determine the appropriateness for admissions and continued stays. Although the current field is replete with measures for assessing the clinical status of adolescents in need of psychiatric inpatient treatment, the validated measures were assessed as either not easily administered or not translating well into our decision making process regarding hospitalization (Wetzler, 1989; Boy-Byrne, Dagadakis, Ries et al., 1995). The clinical leadership selected the SIRS (source unknown at this time) based upon its ease of administration and its face validity with results directly relating to the assessment for continued inpatient hospitalization.

This study explores and speculates upon the significance of the Severity of Illness Rating Scale (SIRS) as a tool for utilization review and program evaluation. The SIRS was first introduced March, 1993 and soon became the centerpiece for the hospital's Utilization Review Plan. Since its implementation, the monthly average in-house lengths of stay at Arthur Brisbane (an intermediate to long term state psychiatric hospital) have decreased 142 days from 234 days in March, 1993 to 92 days in February, 1996. This is remarkable considering that our Hospital has not had any external managed care review process to impact upon days hospitalized.

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SIRS scores have provided the following:

(a) objective criteria used to determine the appropriateness of admissions and continued stays; (b) clinical profiles by adolescent, unit, facility-wide, and attending psychiatrist; (c) clinical outcomes; (d) a flagging system for special treatment reviews; (e) a vehicle to predict lengths of stay; and (f) a vehicle to validate both the facility's Mission and the clinical program design.

Method

The sample in this study consists of 63 adolescents (33 female and 30 male) who were admitted and discharged between August 1, 1994, and July 31, 1995. The adolescents were between the ages of 11 and 17 years old with a mean age of 15.2. This group was 47.6% ($n = 30$) white, 17.5% ($n = 11$) Hispanic, 33.3% ($n = 21$) Black, and 1.6% ($n = 1$) Oriental. Of the 63 adolescents, 25 were discharged to home, 10 returned to the juvenile justice system, and 28 were discharged to residential placements. The average stay of this sample was 91.2 days, ranging from 4 to 286 days.

The treating psychiatrist assigned the adolescents their SIRS scores based upon the evaluation of the adolescents' clinical condition at the time of admission and at subsequent treatment team reviews. For the purpose of this study, focus was placed on the admission and discharge scores. The SIRS scores numerically indicate the degree of functional impairment in eight separate categories of functioning: (a) *affective stability (AS)*, (b) *behavioral impulsivity (BI)*, (c) *thought process (TP)*, (d) *interpersonal relationships (IR)*, (e) *problem solving skills (PSS)*, (f) *social support network (SSN)*, (g) *danger to self (DS)*, (h) *and danger to others (DO)*. The scheduled assignment of SIRS scores translates into a profile of the adolescents' monthly progress from admission to discharge. The scores are assigned on a 1 through 5 Likert-type Scale, with 1 representing

healthy functional behavior and 5 representing the highest degree of dysfunctional behavior. Thus, the higher the SIRS score the more serious the severity of illness. Scores of 4 or 5 in the *italicized* categories above would theoretically indicate a need for hospitalization.

The scale shares many characteristics of the Global Assessment of Functioning (GAF; Goldman, Skodal, & Lave, 1992). However, it reduces the range of responses to five anchored scores across 8 separate dimensions. Ratings by four treating psychiatrists and three covering psychiatrists completed on average two weeks apart for 16 adolescent yielded significantly correlated interrater reliability (Spearman r), with an $r = .70$, ($p < .01$). The psychiatrists subsequently attributed the differences between ratings to clinical opinion, change in adolescents' functioning, and limitation of information by the covering psychiatrist.

Results

The average admissions SIRS scores, discharge settings (DISC: 1 = juvenile justice, 2 = home, 3 = residential), and the adolescents' age proved to be reasonably good predictors of lengths of stay (LOS). Using a stepwise regression procedure, these three variables account for 39% ($R^2 = .39$, $N = 63$) of the variance. Table 1 presents a summary of the strength of these relationships based upon the stepwise procedure for predicting LOS.

Adolescents with higher SIRS scores, who were placed residentially and who were younger, have longer stays. The best equation for predicting LOS from this sample was: $LOS = .86 + 58.33 (\text{Avg. SIRS}) + 30.94 (\text{DISC}) - 10.67 (\text{AGE})$.

In regard to race, sex, or program assignment, no significant relationships were observed between each of these variables and LOS which might result in unintended variation (See Table 2).

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Though gender was not significant in terms of LOS, females on average did take a little longer to place than males. The difference disappears with an average of 119 days for females ($n = 31$) compared to 110 days for males ($n = 22$) when you exclude the 10 adolescents returned to juvenile justice placements.

Conceptually, the Hospital's program design consists of the Cottage and the Main House Programs. The Cottages generally provide treatment for adolescents who *externalize* their behaviors and the Main House for those who *internalize* their behaviors. Adolescents served, however, fall along a continuum between the two points and do not fit easily into such classification. This study examined whether or not the profiles demonstrated by the SIRS scores validated this split.

Differences between the externalized and internalized programs were not as strong as initially anticipated. We expected the Main House (internalized) Program to have greater disturbance in AS and DS and less on DO. The programs, however, only differed significantly in AS. The difference in the other means, however, were in the expected direction (See Table 3).

BI, TP, PSS, IR, and SSN were tested and found not to significantly vary between programs.

The data accommodates comparisons for LOS and changes in average SIRS scores among psychiatrists, which allows for assessing practitioners' performance. Direct comparison of mean LOS's for each of the four psychiatrists demonstrated a maximum difference of 46 days with the low mean at 77 days and the high mean at 123 days. However, such a comparison needs to adjust for admissions' SIRS scores, the discharge settings, and age of the adolescents since these were found to relate to LOS. Controlling for these variables through an analysis of covariance, only a 17 day difference among the

Table 1
Summary of Stepwise Procedure for
Predicting Length of Stay

Variables	R^2	F	Prob $>F$
Admission Average SIRS	.2307	18.30	.0001
Discharge Setting	+.0857	7.52	.0080
Age	+.0749	7.26	.0092

Table 2
Relationship of Race, Sex, and Program Type
to Length of Stay

Variables	R	R^2	N
Race	.06	.005	63
Program Type	.05	.002	63
Sex	.19	.036	63

adjusted means was found with none being significantly different from the others (See Table 4).

Interestingly, the longer the stays, the greater the change in the average SIRS scores. The adjusted LOS means and average changes in SIRS scores provided a meaningful appraisal of the performance of each adolescent as compared to his or her peers.

The average clinical profile upon admission described an adolescent with poor control of impulses (BI = 3.6), poor social support (SSN = 3.3), poor problem solving skills (PSS = 3.5), and who was a danger to self (DS = 3.6) or others (DO = 3.2). This profile supports the Mission of the Center; upon

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admission adolescents received a score of 4 or higher in at least one of the categories which was consistent with a need for continued inpatient treatment.

As would be expected, almost all adolescents improved in their average SIRS scores from the time of admission (avg. 3.3) to their final rating prior to discharge (avg. 2.8). The greatest average SIRS score improvements are noted in the categories of BI (.7), DS (.7), DO (.6), AS (.5), and PSS (.5). All but SSN were statistically significant. Table 5 summarizes the average reduction..

This profile provides some evidence of the dimensions of adolescent functioning in which our hospital makes the most favorable clinical impact. The changes demonstrated in the average SIRS scores represent a verification of the anticipated outcomes of target goals for patient treatment planning, especially the efficaciousness of managing dangerous behaviors.

Table 3
Differences in SIRS Scores Between Programs

SIRS Dimension	Program	Mean	N	T	Prob > T
AS	Cottage	3.02	39	2.5	.02
	Main House	3.45	24		
DS	Cottage	3.49	39	0.57	ns
	Main House	3.58	24		
DO	Cottage	3.28	39	0.80	ns
	Main House	3.13	24		

Table 4
Adjusted Length of Stay Means by Psychiatrist
When Controlling for SIRS, Discharge Setting and Sex

Attending Psychiatrist	Mean	Adjusted Mean	Standard Error	Avg. Change in SIRS
#1	77 days	92 days	17.7	0.4
#2	123 days	102 days	15.7	0.7
#3	101 days	109 days	17.7	0.6
#4	98 days	96 days	13.7	0.5

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Discussion

The admission average SIRS score, discharge setting, and the adolescent's age proved to be the best organizational predictors for LOS. The SIRS scores supported the appropriateness of admissions, and to a lesser extent, program assignments. In addition, it provided a fair approach to assessing psychiatrists' performance. The SIRS scores also reported improvement from the point of admission to discharge in 7 out of 8 categories of functioning, with little improvement in SSN. The profile of the adolescents shows that the functions that are major determinants for hospitalization (i.e., BI, DS, and DO) improved the most. According to this measure, the outcomes of treatment indicated that Arthur Brisbane Hospital's treatment program design accomplished its mission

SIRS has been an effective tool in managing the care of adolescents at Arthur Brisbane. Further study is indicated to determine its applicability in

acute psychiatric settings. Additional work is also needed to strengthen its reliability, which in turn, may further improve its predictive powers.

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Table 5

Differences Between Admissions and Discharge SIRS Scores

SIRS Dimensions	Average Reduction	Std Error	N	T	Prob>T
DS	.73	.102	63	7.18	.0001
DO	.63	.089	63	7.17	.0001
BI	.63	.099	63	6.13	.0001
AS	.51	.098	63	5.17	.0001
PSS	.49	.102	63	4.88	.0001
TP	.46	.103	63	4.46	.0001
IR	.42	.087	63	4.95	.0001
SSN	.11	.056	63	1.98	.0514

