8-1996

The Effects of Wraparound Services on the Adjustment of Four Severely Emotionally Disturbed Youth: A Controlled Multiple Baseline Study

Michael J. Myaard
Western Michigan University

Follow this and additional works at: http://scholarworks.wmich.edu/dissertations
Part of the Psychology Commons

Recommended Citation
Myaard, Michael J., "The Effects of Wraparound Services on the Adjustment of Four Severely Emotionally Disturbed Youth: A Controlled Multiple Baseline Study" (1996). Dissertations. 1713.
http://scholarworks.wmich.edu/dissertations/1713

This Dissertation-Open Access is brought to you for free and open access by the Graduate College at ScholarWorks at WMU. It has been accepted for inclusion in Dissertations by an authorized administrator of ScholarWorks at WMU. For more information, please contact maira.bundza@wmich.edu.
THE EFFECTS OF WRAPAROUND SERVICES ON THE ADJUSTMENT OF FOUR SEVERELY EMOTIONALLY DISTURBED YOUTH: A CONTROLLED MULTIPLE BASELINE STUDY

by

Michael J Myaard

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Philosophy
Department of Psychology

Western Michigan University
Kalamazoo, Michigan
August 1996
THE EFFECTS OF WRAPAROUND SERVICES ON THE ADJUSTMENT OF FOUR
SEVERELY EMOTIONALLY DISTURBED YOUTH: A CONTROLLED
MULTIPLE BASELINE STUDY

Michael J Myaard, Ph.D.
Western Michigan University, 1996

This naturalistic study employed a controlled multiple baseline design (Baer,
Wolf & Risley, 1968; Poling, 1995) across subjects and behaviors to examine the
effects of wraparound services on the adjustment of four Severely Emotionally
Disturbed teenagers at risk of long term residential placement. Subjects were selected
on a clinical trials basis upon referral into a public sector interagency service system
within a small rural county. The Vermont System For Tracking Client Progress served
as the primary dependent measure and was sampled daily for one year; the Child and
Adolescent Functional Assessment Scale and detailed financial data were also sampled.
Distinct sequential effects across subjects and behaviors were immediately achieved and
maintained across time through service implementation and subsequent phase out.
Follow up data are included. The current results and research methodology are
discussed in light of the emerging literature on the treatment of this population.
INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.
ACKNOWLEDGMENTS

This study involved the efforts and talents of many people. Without their help, I would have never pulled it off. These people essentially formed my very own dissertation wraparound team and they provided me with all the individualized supports and services I needed to make it through. I would like to thank Connie Crawford for her countless efforts over the course of this study that went above and beyond the call of duty. Connie's dedication, hard work, and exemplary skills as a behavior analyst were a crucial factor in the successful completion of this project.

Michelle Jackson served as the project's Resource Coordinator. She facilitated plans, organized whatever needed to be organized, and kept track of the reams of information we collected. Without Michelle's pleasant disposition and smooth social skills, our families may not have been so cooperative with their daily record keeping chores. Michelle, as with most resource coordinators, had the thankless job of keeping everyone's needs met and happy. If it wasn't for her behind the scenes work in many areas, this project would not have run as smoothly as it did.

Veronica Cline was the wraparound aide for Subjects 1, 2 and later for Subject 3. She was truly a diamond in the rough that we were fortunate to find. Veronica was a bastion of consistency for her boys. She could be genuinely positive, patiently neutral, or tough and surly. Her sincerity and hard work made a big difference. She was instrumental in the gains three of the subjects made.

Thanks also to the Honorable Thomas Shumaker, Judge of Probate, for giving us his support, an opportunity to learn, and these boys a chance to make it in the community. Without his blessing and help along the way, we would not have been as successful.
On a personal note, I'd like to thank Jack Michael and Dick Malott for their teachings and support over the tenure of my career as a student. I have learned a great deal from both of them and will apply that knowledge for years to come. I'd also like to thank Al Hovestadt for his clinical supervision, earnest support, smiles, and pats on the back. His confidence in my abilities and respect for me as a person helped pull me through some dark times. I'd especially like to thank Galen Alessi, my adviser, who hung in there with me since I started my Master's degree program. Galen's knowledge base is about as broad as they come. I was fortunate to tap into it at different levels and am a wiser man for doing so. Thanks Galen for being yourself.

Last but not least, I would like to thank my family for all the support over the many years, especially my wife Lisa who was as supportive and understanding as any wife could be. Finally, I'd like to dedicate this dissertation to my dad, John Myaard. If it hadn't been for The Quiet One, I wouldn't have made it.

Michael J Myaard
# TABLE OF CONTENTS

ACKNOWLEDGMENTS ........................................................................................................ ii
LIST OF TABLES ................................................................................................................. ix
LIST OF FIGURES ................................................................................................................ x
INTRODUCTION ..................................................................................................................... 1
SEVERELY EMOTIONALLY DISTURBED YOUTH ............................................................... 5
  Why Is This Group a Concern? ..................................................................................... 5
  Prevalence Data .............................................................................................................. 6
  Definition of Severe Emotional Disturbance ............................................................... 6
  Descriptive Studies on Severely Emotionally Disturbed Youth ................................... 8
  The Paradigm Shift Within the Field ........................................................................... 15
PSYCHIATRIC HOSPITALIZATION AND RESIDENTIAL TREATMENT ................................................................................. 18
  A Description of Psychiatric Hospitals ........................................................................ 18
  A Description of Residential Treatment Centers ....................................................... 19
  Financial Costs of Placement ....................................................................................... 20
  The Clinical Effectiveness of Psychiatric Hospitalization and Residential Treatment .................................................................................................. 21
  The Current Status of Psychiatric Hospitalization and Residential Treatment .................................................................................................. 26
WRAPAROUND SERVICES AND A SYSTEM OF CARE ......................................................................................................................... 32
  Philosophical Underpinnings ....................................................................................... 36
    Individualized Services and Supports ......................................................................... 36
    Community Based Services With an Emphasis on Normalization ................................ 36
    Family Partnerships .................................................................................................... 37
Table of Contents—Continued

Strengths-based ................................................................. 37
Cultural Competency .......................................................... 38
Unconditional Care ............................................................... 38
The Process of Individualized Care ......................................... 38
Interagency Collaboration ................................................... 39
Resource Management ....................................................... 40
Flexible Funding ................................................................. 40
Measuring Outcomes .......................................................... 41

A PARTIAL REVIEW OF THE EVALUATIVE LITERATURE ON
THE EXPANDED SYSTEM OF CARE MODEL ......................... 42

A REVIEW OF THE EVALUATIVE LITERATURE ON
WRAPAROUND SERVICES .................................................... 44
   Case Study Reports .......................................................... 45
   Qualitative Studies .......................................................... 46
   Evaluation Field Studies .................................................. 48
   Studies Utilizing Experimental Controls ......................... 53

METHOD ................................................................. 56
   Setting ........................................................................... 56
      General Demographics .................................................. 56
      Human Service System Characteristics ....................... 58
   A Family's Entry Into the System .................................. 63
   Subject Selection .......................................................... 64

Subjects ........................................................................... 65
   Subject 1 ....................................................................... 65
   Subject 2 ....................................................................... 69
Table of Contents—Continued

Subject 3 ...................................................................................................... 71
Subject 4 ...................................................................................................... 74
The Development and Implementation of the Service Plan ..................... 77
  Step 1 ............................................................................................................ 77
  Step 2 .............................................................................................................. 78
  Step 3 .............................................................................................................. 79
  Step 4 .............................................................................................................. 80
  Step 5 ........................................................................................................... 81
  Step 6 .............................................................................................................. 81
Experimental Design .................................................................................. 82
Integrity of the Independent Variable ......................................................... 83
Dependent Measures .................................................................................. 84
  The Vermont System of Tracking Client Progress ................................ 84
  Reliability of the Dependent Measure ..................................................... 86
  The Child and Adolescent Functional Assessment Scale (CAFAS)....... 86
  Financial Costs ........................................................................................... 87
Descriptions of the Specific Wraparound Plans ......................................... 88
  Subjects 1 and 2 ....................................................................................... 88
  Subject 3 ...................................................................................................... 92
  Subject 4 ...................................................................................................... 93
RESULTS .......................................................................................................... 97
  General Trends Across Baselines ............................................................. 97
    Transforming Data From the VSTCP .................................................... 97
    Analysis of the General Trends in the Data .......................................... 103
    Compliance ............................................................................................ 103
## Table of Contents—Continued

- Peer Interactions ......................................................... 104
- Physical Aggression ......................................................... 104
- Alcohol/Drug Use .......................................................... 105
- Extreme Verbal Abuse ..................................................... 105
- Results Relating to Specific Subjects ................................. 106
  - Subjects 1 and 2 .......................................................... 106
  - Subject 3 ................................................................. 106
  - Subject 4 ................................................................. 107
- Interobserver Agreement .................................................. 107
- Functional Impairment ..................................................... 108
- Integrity of the Independent Variable ................................. 111
- Cost Analysis ................................................................. 112
- DISCUSSION ................................................................. 116
  - The Strength and Integrity of the Independent Variable .... 116
  - The Role of Behavior Analysis ....................................... 118
  - The Nature of the Subjects ............................................ 119
- Comparisons of This Study to the Current Wraparound Literature ......................................................... 119
- Limitations of the Current Study ................................. 120
- APPENDICES
  - A. Daily Adjustment Indicators for Subject 1 ...................... 122
  - B. Daily Adjustment Indicators for Subject 2 ...................... 129
  - C. Daily Adjustment Indicators for Subject 3 ...................... 136
  - D. Daily Adjustment Indicators for Subject 4 ...................... 143
  - E. Human Subjects Institutional Review Board Approval ........ 150
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>F. Permission to Use Copyrighted Material</td>
<td>152</td>
</tr>
<tr>
<td>BIBLIOGRAPHY</td>
<td>155</td>
</tr>
</tbody>
</table>
LIST OF TABLES

1. Paradigm Shifts in Children's Mental Health .................................................. 16
2. Interobserver Agreement ................................................................................ 110
3. Cost Comparisons Between Wraparound Services and Projective Placement Costs ................................................................................................. 114
LIST OF FIGURES

1. Number of Days Per Week With 85% or Greater Compliance ......................... 98
2. Days Per Week With Appropriate Peer Interactions 85% of the Time or Greater .................................................................................................................... 99
3. Number of Days Per Week Physical Aggression Occurred ............................. 100
4. Number of Days Per Week Alcohol/Drug Use Occurred ............................. 101
5. Number of Days Per Week Extreme Verbal Abuse Occurred ...................... 102
6. Total CAFAS Scores Across Subjects ........................................................ 110
INTRODUCTION

Within the public human service area the field of children's services is currently undergoing vast changes. The service delivery system and funding structures supporting it are both in a state of flux. These systemic changes are particularly notable in the area of treating severely maladjusted youth. An analogy can be made between the way we repair broken automobiles and the historical way we tried to treat troubled youngsters (VanDenBerg, 1994, personal communication). The old way of doing business in this field consisted of removing the child from the home and attempting to fix the problem in much the same manner one would tow a broken car to the mechanic and have it serviced. After looking under the hood and making a few adjustments the car goes back on the road or, in the case of treating severely maladjusted children, the child gets placed back home with the assumption that he or she will function better because the experts worked on and fixed the problem. The metaphorical auto repair paradigm didn't always work well with children and families. Human behavior is too complex, multiply controlled, and it just doesn't respond to the same treatment strategies as automobiles and other machines. This study examines the effectiveness of a new community based service delivery system for severely emotionally disturbed children called "wraparound".

"Severely emotionally impaired" or "severely maladjusted" children and adolescents have historically been an arduous population to successfully treat for both the private and public sectors. When things go awry though, it is ultimately the public sector that becomes responsible for the care and treatment of these youngsters.

There are many ways that a child's treatment may become the responsibility of the public child-serving agencies. The juvenile court system, the child welfare system,
and the mental health system can all become responsible for these children under varying circumstances. In some cases, the treatment and care required by this population can deplete a family's insurance benefits (both outpatient and inpatient) long before the child has significantly improved. When coverage runs out, it is common to find the child in a condition where restrictive out-of-home placement is warranted (or the child may actually be in an acute psychiatric setting and benefits have reached their limit). In other cases, the child or adolescent may be a member of a family that the public sector had somehow already been responsible for (and possibly were extensively involved with) but the services that were provided fell far short of their mark. In still other cases, there are youngsters that fall completely through the cracks with no prior history of agency involvement but, when they surface, they are "at risk" for an out of home placement due to the extreme nature of their behavior. These examples are clearly not exhaustive in nature. The public sector can become responsible for the child through many other avenues as well; it assumes the financial costs and treatment responsibilities for youngsters when these or many other circumstances come about.

It is not unusual for severely maladjusted children and their families to have an extensive history of involvement with one or more child serving agencies. A common scenario is that the child protection department initially becomes involved with the child at a young age due to some sort of domestic problem, neglect, or abuse. After that involvement ends and a period of time ensues, emotional/behavioral problems sometimes mount and the mental health department becomes more heavily involved (if it hasn't been already). The education department is often involved very early on and may provide special services from the onset of schooling. When the child reaches adolescence, the juvenile justice system may become involved if the child engages in illegal behavior.

These children and adolescents pose particularly difficult problems for all who
work in the child-serving professions. Their striking behavioral deficits or excesses can involve problematic overt and/or covert repertoires and be functionally related to a myriad of variables. They are the children and adolescents who fall within the extreme tails of distributions of psychopathology and aberrant behavior. They often engage in activities and general ways of behaving that are somehow problematic or dangerous for their families, community, and themselves. It has been a common practice when a youngster's behavior escalates (worsens) and other relevant conditions deteriorate, that placement in a long-term psychiatric or residential setting occurs.

Usually, at the time of removal from the family and placement into a more restrictive setting, one of the agencies mentioned above has "sole" responsibility (financially and perhaps otherwise) for the child. Through the years, the major public stakeholders (child welfare, juvenile justice, mental health, and education) have developed rigid categorical approaches to serving children. Policy and practice surrounding these approaches often varies from state to state and roles are not always well defined. Unfortunately, the categorical strategies and tactics are often self-defeating and ineffective in the long run. Intensive interagency conflicts regarding responsibilities and courses of action often ensue at the time of these placements. In their wake they can leave damaged working relationships between the major stakeholders and this often impacts the families themselves.

The relevant predisposing, precipitating, and perpetuating variables involved with the "at risk" child and family are usually quite complex, chronic, and difficult to remedy. Unfortunately, it is all too common that the conditions that led to the placement of the child do not improve substantially during the child's removal and subsequent treatment. Even if the child improves during the placement, upon return back to the environment of origin, behavior tends to deteriorate again if the problematic conditions that led to the placement were not remedied. In many instances children are
removed from their families, placed in long-term restrictive placements, and appalling sums of money are spent for treatment gains (if they are obtained) that do not generalize and are not maintained. Oddly enough, sometimes even when this happens the child is put into yet another placement. The amount of public money spent in this manner can be staggering. The emotional turmoil and pain that can arise for the child and family during the child’s separation is harder to measure but can be equally devastating.
SEVERELY EMOTIONALLY DISTURBED YOUTH

Why is This Group a Concern?

Effectively serving and meeting the needs of severely emotionally disturbed (SED) youth and their families has become a national goal (U.S. Department of Education, 1994; Friesen and Poertner, 1995; Stroul, 1995). The complex problems of children and adolescents who have severe emotional or behavioral disturbances are important to understand and resolve for several reasons. The behavioral and emotional difficulties first evidenced in childhood are highly predictive of problematic adjustment across numerous aspects of adult life. This group is at risk for negative outcomes in a variety of areas of their own lives and the lives of their children as well (Robins, 1966; McCord, 1979; Holmes & Robins, 1988). School dropout is extremely high among this group (U.S. Department of Education, 1992; U.S. Department of Education, 1994; Wagner 1989) which leads to future unemployment (Caspi, Elder, & Bem, 1987; Neel, Meadows, Levine, & Edgar, 1988). Many of the antisocial tendencies follow a developmental course and persist through adulthood (Prange, Greenbaum, Johnson, & Friedman, 1991; Loeber, 1988, 1991, 1992). This group is at greater risk to have adult criminal careers (McCord, 1988; Wagner, 1989). Alcoholism, poor adult relationships, divorce, and adult psychiatric disorders are very prevalent among this group (Coie & Dodge, 1988; Robins, 1966; Wallerstein, 1991; Holmes and Robins 1988). At least 70% of all mental health dollars for children are spent on inpatient care for this population (Burns, 1991; Kiesler and Sibulkin, 1987). Medicaid alone, during the mid 1980's spent $261 million nationally in this area per year (Fox and Yoshpe, 1987). Even without any knowledge of mental health treatment, one might question
whether such an expenditure concentrated on one area of treatment is wise. Unfortunately, the data indicate that psychiatric inpatient treatment of children and youth is increasing at an alarming rate (Weithorn, 1988; Frank & Dewa, 1992) and that while many children are overserved, more are sorely underserved (Knitzer, 1982; Saxe, Cross, & Silverman, 1988; Kayonagi & Gaines, 1993). Both the humanitarian and financial costs to our society are staggering.

Prevalence Data

According to recent epidemiological research, 13% to 22% of children ages 4 to 18 have a diagnosable mental disorder that is considered moderate and about 7% have a serious disorder; some suggest that these high rates may be increasing (Costello, 1989; Achenbach and Howell, 1993; Kessler, McGonagle, Zhal, Nelson, Hughes, and Eshleman, 1994; Brandenburg, Friedman, and Silver, 1990). Kayonagi and Gaines (1993) estimate that within the United States 12 million children have significant mental health problems. The rising prevalence rates of emotional and behavioral disorders in childhood and adolescence is accompanied by controversy and concern.

Definition of Severe Emotional Disturbance

There is currently a lack of consensus in the field on the definition of "serious emotional disturbance" as well as relevant diagnostic criteria (Kutash & Duchnowski, 1996). Public Law 102-321 106 Stat. 357 states that "children with a serious emotional disturbance" are persons:

From birth to age 18, who currently or at any time during the past year, have had a diagnosable mental, behavioral, or emotional disorder of sufficient duration to meet diagnostic criteria specified within DSM-III-R, that resulted in functional impairment which substantially interferes with or limits the child's role or functioning in family, school, or community activities. These disorders include any mental disorder (including those of biological etiology) listed in DSM-III-R or their ICD-9-CM equivalent (and subsequent revisions) with the
exception of DSM-III-R "V" codes, substance use, and developmental disorders, which are excluded, unless they co-occur with another diagnosable serious emotional disturbance. All of these disorders have episodic, recurrent, or persistent features; however, they vary in terms of severity and disabling effects.

Functional impairment is defined as difficulties that substantially interfere with or limit a child or adolescent from achieving or maintaining one or more developmentally-appropriate social, behavioral, cognitive, communicative, or adaptive skills. Functional impairments of episodic, recurrent, and continuous duration are included unless they are temporary and expected responses to stressful events in the environment. Children who would have met functional impairment criteria during the referenced year without the benefit of treatment or other support services are included in this definition.

Burchard and Clarke (1990) suggest that the federal definition above is problematic from many perspectives. They suggest referring to the children and adolescents as displaying "severely maladjusted behavior" or being "behaviorally disordered". Severely maladjusted behavior refers to specific behaviors which can be operationally defined and measured with more precision and thus would yield more acceptable levels of reliability and validity. They suggest that an emphasis on behavior may also lead to better implementation and evaluation of services. Additionally, the term "severely maladjusted behavior" has fewer negative labeling effects. The child's behavior is labeled, not the child. If the behavior is no longer emitted, the label is abandoned as it becomes incompatible with the observed behavior.

Although the term "severely emotionally disturbed" may have some merit in describing a segment of children and adolescents who exhibit a consistent pattern of behavior, it is particularly susceptible to being falsely used as an explanation for the behavior. When attempting to understand cause and effect relations, it is necessary to observe the cause independently from the effect; when the cause cannot be observed independently of the effect for which it is an explanation, such a cause is referred to as an "explanatory fiction" (Michael, 1993). When asked why a youngster fights with others excessively and given the answer that it is because he is emotionally disturbed, being emotionally disturbed is no longer just a descriptive category. Being emotionally
disturbed has been turned into an explanation for behavior but the only evidence for the emotional disturbance is the same behavior that it explains. This type of circular reasoning takes the focus off important functional relations that are crucial in understanding complex problems such as those exhibited by this type of youngster.

Unfortunately the term "severely emotionally disturbed" is used almost exclusively in the literature. Due to this convention, it will be used in this manuscript as well. This author agrees with Burchard and Clark (1990) that the terms "behaviorally disordered" or "severely maladjusted behavior" are more appropriate terms.

Descriptive Studies on Severely Emotionally Disturbed Youth

Studies depicting the characteristics of SED youngsters are beginning to emerge in the literature. Foremost among them is the National Adolescent and Child Treatment Study which has resulted in several relevant publications (NACTS: Greenbaum, Dedrick, Friedman, Kutash, Brown, Lardieri & Pugh, in press; Silver, Duchnowski, Kutash, Friedman, Eisen, Prange, Brandenberg, & Greenbaum, 1992; Brown and Greenbaum, 1995; Greenbaum, Prange, Friedman, & Silver, 1991; Lardieri, Newcomb, Greenbaum & Brown, 1994; and Prange, Greenbaum, & Friedman, 1993; Prange, Greenbaum, Silver, Friedman, Kutash, and Duchnowski, 1992). This federally funded effort employed an accelerated longitudinal design to assess change over time across 812 subjects. The study set out to accumulate descriptive data on children with SED including: (a) demographic and family characteristics, (b) level of psychological and adaptive functioning, (c) services received, and (d) outcomes over time. The subjects were labeled as SED and were either being served by mental health (46%) or public school systems (54%) in accordance with Public Law 94-142. Age cohorts within the sequential cohort design ranged from 9 to 17 and were divided into three groups: ages 9-11, 12-14, and 15-17.
Data were sampled annually over a 7-year time span. Subjects were drawn from 121 sites located in six states in different geographic and cultural regions to provide diversity. The mental health subjects were all being served in publicly-funded residential treatment facilities; the public school system subjects were served in community-based special education programs. The subject pool was 70% White, 22% African American, 5% Hispanic, and 3% other. Fifty-five percent of the children were from two parent families but only 21% were from two parent families composed of the biological parents.

Greenbaum et al. (in press) concluded that the subjects entered the study with serious problems which persisted over time. At entry into the study, emotional and behavioral problems of the subjects were broad. The Diagnostic Interview for Children-Child Version was administered and indicated that 67% of the group met criteria for conduct disorder, 41% met criteria for an anxiety disorder, 19% met criteria for a depressive disorder, 12% met criteria for attention deficit disorder, and 5% met criteria for schizophrenia. Multiple disorders were common with 41% of the subjects meeting criteria for two or more disorders; the prevalence of an additional disorder rose to 67% among those diagnosed with conduct disorder. Psychological and adaptive functioning were measured by the Child Behavior Checklist (CBCL; Achenbach, 1991) and the Vineland Adaptive Behavior Scales (VABS; Sparrow, Balla & Cicchetti, 1984) respectively.

A positive finding from the study was that there was a significant improvement on the CBCL that occurred over time. The improvement averaged 1.84 T-score points per year. The oldest cohort improved to the point to which their T-scores were no longer in the clinical range on this measure. The youngest cohort remained in the clinical range and the middle cohort fell into the borderline range. When the study began, the subjects, on the average, were at the 6th percentile in adaptive behavior.
(composite standard scores equal to 77.09) but the scores declined by 1.00 point per year, which were significant differences. At the end of the study their scores were equivalent to the 3rd percentile (composite Standard scores equal to 72.09).

Nearly two-thirds of the sample had at least one contact with the police in which the child was a suspected perpetrator of a crime, 43% were arrested at least once, 49% were required to appear before a court or judge, and 34% were adjudicated delinquent or convicted of a crime. Interestingly, parent reports indicate that most law violations were property crimes (48%), crimes against other persons (31%), status offenses (30%), drug-related offenses (16%), and sex-related offenses (5%). Self-reports made by the youngsters (unknown to the law enforcement agencies) indicate increased rates compared to those provided by the parents. According to the self reports the property related offenses rose to 62%, crimes against other persons rose to 38%, status offenses rose to 35%, drug related offenses rose to 27%, and sex related offenses rose to 6%. Lardieri et al. (1994) indicate that as a result of these law violations 51% of the subjects had a short term stay in either detention or jail, 48% were placed on probation or community control, 12% were placed in long term stays in training school, 10% were placed in jail, 9% were placed in homes for delinquents or halfway houses, and 7% went to prison.

Several demographic and behavioral variables were significant predictors of incarceration (placement in jail, detention centers, training schools, homes for delinquents or prison) within a group of 620 NACTS subjects (Prange et al., 1993). Risk of incarceration was greater for: (a) males, (b) minorities, (c) children initially residing in a mental health facility, and (d) children who were in mid-adolescence. CBCL externalizing scores and the number of conduct disorder symptoms were also positively related to incarceration.

One of the most noteworthy offshoots of the NACTS project was a study
employing a series of competing-risks survival analyses conducted on 184 children who had been "successfully" discharged from residential treatment (Brown & Greenbaum, 1995). The results indicate higher probabilities of subsequent incarceration for subjects who were: (a) male, (b) had higher levels of externalizing behavior, and (c) who had a family history of contact with the police. Subsequent readmission into another residential treatment center was greater for subjects who were: (a) younger at time of discharge, (b) were minority, (c) had families with less functional adaptability, (d) had fewer communication skills, and (e) had higher levels of internalizing behavior.

On the whole, 75% of the "successful" discharges were either readmitted to another residential facility (45.1%) or were incarcerated (29.9%). The median length of time for readmission into another residential facility was 10.5 months; the median length of time for incarceration was 22.5 months. The most startling aspect of this study had to do with the fact that this subject pool represented only the "successful" discharges from residential treatment.

Lardieri (1994) performed a series of multiple regression analyses on: (a) number of incarcerations, (b) average length of stay per incarceration, and (c) total length of time incarcerated over the course of the NACTS study. A total of 211 subjects were incarcerated during the study. They averaged two episodes with an average total duration of 320 days in juvenile justice or correctional facilities. Average stays in the various placement types were: (a) 150 days for homes for delinquents or halfway houses, (b) 180 days for jails, (c) 335 days for training schools, and (d) 400 days for prisons. Children who were: (a) male, (b) older, (c) had lower IQ scores, and (d) had more conduct disorder symptoms had a significantly higher frequency and duration of correctional placements.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Prange, Greenbaum, Silver, Friedman, Kutash, and Duchnowski (1992) examined family functioning and its relation to psychopathology among 353 NACTS adolescents and their parents. Significant differences were found between parents and adolescents with SED and their normative nonclinical counterparts. Both parents and adolescents with SED perceived their family relations as distant and lacking in emotional support than did their normative nonclinical counterparts. They rated their families as more disengaged and less connected, and as having less parental leadership, structure, and control over family activities.

The Alternatives to Residential Treatment Study (ARTS; Duchnowski, Johnson, Hall, Kutash, & Friedman, 1995; Duchnowski, Hall, Kutash, & Friedman, in press) set out to further document the characteristics and functioning of SED youth over time. The subject pool consisted of youth who were served in programs employing the CASSP philosophy and processes (described more fully in later sections of this paper). The programs chosen to be part of the study were considered exemplars in the area of alternative treatment, mature, stable and were endorsed by a national advisory board. The sites were geographically and culturally diverse and were located in both inner-city and rural settings. The subject pool consisted of 87 youth and parent/caregiver dyads. The mean age of the youths was 14.2 years. The sample was largely Caucasian (71%) with 9% African Americans, 9% Hispanic and 7% Native Americans or native Alaskans. The problems of the youth were more severe than the youth described in the NACTS study. The ARTS sample was more impaired in several domains. More ARTS subjects scored in the extreme range on the CBCL (92% vs. 75%), more youth had previous residential placements (67% vs. 30%) and more youth had contacts with child welfare and juvenile justice systems. There was a mean number of 4 prior residential placements within the ARTS sample. The reported age of onset for severe problems was 6.9 years in this sample.
After one year data were collected in the following areas: (a) academic performance, (b) emotional/behavioral functioning and levels of impairment, (c) functional impairment and social competence, and (d) family characteristics. During the course of the year both math and reading scores showed small but statistically significant gains. CBCL scores (Total T scores as well as Internalizing and Externalizing scores) also significantly improved. The average total score on the Child and Adolescent Functional Assessment scale (CAFAS) significantly improved as did all the individual scales except substance use.

Family characteristics did not change significantly. There were 47 different service types designated at the onset of the study. An average of 14 different service types were reported as received by each subject with a range of 5 to 29 different services. The average number of changes in living setting was 3.2. The majority of subjects had between 0 and 2 changes; 32% remained in the same living setting while 17% changed only once. The majority of subjects remained at the same level of restrictiveness or moved to a less restrictive environment. It should be noted that this study was conducted for descriptive purposes and no true experimental controls were employed. Generalizations that can be made from the study concerning treatment are limited due to the lack of controls. However, it does suggest promise for alternative methods of treating this challenging population.

In addition to the federally funded studies described above, a few other reports are found in the current literature on SED youth that add to our current knowledge base. Epstein, Cullinan, Quinn, and Cumblad (1994) presented demographic, family, community, educational, and other risk characteristics of children and adolescents involved in a program to prevent the need for residential placements. Of the 100 subjects all had at one time been classified by the school as evidencing emotional or behavioral disorders, 39% were diagnosed with a learning disability. Seventy-seven
percent of the subjects received special services from the school system, 32% received services from the mental health department, 24% were involved with the child welfare department, and 27% were prescribed psychotropic medication. At some point in their lives 59% had been previously placed in a residential facility and 60% had legal charges filed against them. The vast majority came from single parent homes (59%); 22% lived with both biological parents. In this particular sample, 69% scored in the average range of intelligence and 15% were considered above average. Many were frequently suspended (26%), habitually truant (24%), constantly tardy (9%) or expelled (3%). Nearly half of the subjects were below the poverty level, had divorced parents, negative peer influences, or a history of alcoholism in the family. Twenty percent had a history of sexual or physical abuse.

Singh, Landrum, Donatelli, Hampton, and Ellis (1994) conducted a similar study to the one above on 321 consecutive admissions to a public, university affiliated hospital during a fiscal year. The final subject pool consisted of 250 subjects. Data on 71 admissions were excluded for a variety of methodological reasons. The majority (67%) were male. The average age was 11.6. Fifty-six percent were Caucasian, 40% were African American, and 4% were of other or mixed races. Sixty-one percent lived at home prior to admission and 68% returned to home at discharge. Fifty-six percent had a history of prior psychiatric hospitalization and 82% had a history of prior outpatient treatment. Sixty-seven percent were voluntary admissions while the rest were committed. The three most frequently diagnosed Axis I disorders (in order of prevalence) were: (1) disruptive behavioral disorders, (2) Attention Deficit Hyperactivity Disorder, and (3) mood disorders. Eighty percent were prescribed at least one medication at discharge.
The Paradigm Shift Within the Field

The novel and complex mental health needs of children have perplexed public policy makers since the turn of the century. White House conferences were held in both 1909 and 1930 recommending new programs to care for mentally disturbed children. In following years (1969, 1975, 1978, and 1981) federal commissions and panels have issued increasingly detailed and specific policy recommendations for children's mental health care. In 1979 the President's Commission on Mental Health stated that the recommendations of the previous commissions and panels were not significantly implemented; children were referred to as one of the most neglected groups in the mental health field. Each of these commissions called for an increased emphasis on community-based networks of care and new resources for both treatment and research (Saxe, Cross, and Silverman, 1988; Tuma, 1989).

Following an influential federal study, Knitzer (1982) concluded that of the three million children with serious emotional disturbances in this country, nearly two-thirds were receiving no treatment at all and of those who did, a large portion received treatment that was inappropriately restrictive. There was both a definite shortage of resources to treat children's mental health problems effectively and a substantial overreliance on institutionalization. The following deductive logic seemed to prevail: serious illnesses are treated in hospitals, mental disorders can be serious illnesses, therefore mental disorders should to be treated in mental hospitals (Kiesler, 1982). Treatment options consisted of office-based psychotherapy or, if that failed, hospital or residential placement.

The obvious historical problems within the field of children's mental health have led to two primary areas of developments in recent years. First, there has been a push to expand existing local systems or continuums of care. Secondly, there has been the establishment and promotion of "individualized or wraparound services".
The paradigm shifts that are occurring in this area are summarized in the Table 1.

Table 1
Paradigm Shifts in Children's Mental Health

<table>
<thead>
<tr>
<th>Historical View</th>
<th>Emerging View</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institutional/Out of Home.</td>
<td>Community Services</td>
</tr>
<tr>
<td>Narrow View of Treatment</td>
<td>Range of Services</td>
</tr>
<tr>
<td>Pathology Based</td>
<td>Strengths-Based</td>
</tr>
<tr>
<td>Separation of Families</td>
<td>Preserving Families</td>
</tr>
<tr>
<td>Professional Driven</td>
<td>Parent Partnerships</td>
</tr>
<tr>
<td>Standard Program</td>
<td>Individual Services</td>
</tr>
<tr>
<td>Fragmented Services</td>
<td>Collaboration</td>
</tr>
</tbody>
</table>

The Child and Adolescent Service System Program (CASSP) was initiated through the federal government in response to growing concern with the state of affairs in children's mental health. CASSP was created with modest funding ($1.5 million) appropriated by The United States Congress and was launched through the National Institute of Mental Health; initial grants were awarded to ten states. CASSP set out to help develop new ways in which children and adolescents with severe
emotional/behavioral problems or mental disorders could access and receive comprehensive services. Several goals were established by this group: (a) to develop leadership at the state and local level, (b) to establish mechanisms for interagency collaboration, (c) to increase family participation at all levels of planning and treatment, (d) to develop a culturally competent system of care, and (e) to evaluate the activities of CASSP (Lourie & Katz-Levy, 1987). Since CASSP began it has assisted all 50 states in developing community-based systems of care through grants and technical assistance and its influence has been greater than anticipated (Duchnowski & Friedman, 1990; Knitzer, 1993).
A Description of Psychiatric Hospitals

Placement in psychiatric hospitals and residential treatment centers are the most restrictive options for treating severely emotionally disturbed children (within the mental health system). A treatment environment can be made restrictive through three of its components: (1) the physical facility (including its appearance and size, its internal structure and equipment [such as locks, privacy of bathing, and kinds of kitchen facilities], and the physical layout); (2) the rules and requirements that affect free movement, activity, or other choices; and (3) the voluntariness with which individuals enter or leave the setting permanently (Hawkins, 1992).

Tuma (1989) describes several types of psychiatric facilities available for children and adolescents that vary in terms of the type of facility, staff, and cost. There are free standing psychiatric hospitals (state, county, or private psychiatric hospitals), separate children's hospitals or units, or psychiatric units within general hospitals; all must be licensed and accredited as hospitals according to state laws. The publicly funded state and county hospitals have long been known for lack of fiscal resources, limited number of beds for children, and less well trained staff than private hospitals. Because they typically have more financial resources to devote to treatment compared to public hospitals, the services offered by the private hospitals are often greater. They tend to provide more hours of auxiliary treatment per week per patient, have a higher staff-to-patient ratio, and have a greater number of professional treatment staff. In the private sector, corporations, universities, or religious organizations typically own and operate their facilities for profit. Private hospitalization is not available to everyone. Hospital care can be short term (0-60 days), intermediate (60 days to 2 years), or long
term care for the chronically disturbed (over 2 years).

Psychiatric hospitalization consists of a variety of interventions directed toward a diverse population and, as such, it represents a mode of service delivery rather than a specific treatment per se. Interventions available within psychiatric facilities vary but often include individual, group, family therapy, milieu therapy, occupational therapy, psychotropic medication, behavior modification, physical and chemical restraint, and seclusion. The total care of the child becomes the responsibility of the hospital in that it provides food, lodging, medical care, recreational activities, and educational services while the child is admitted. The units are typically locked with specific visiting hours; discharges usually require a doctors order unless the continued stay is protested. Recipient rights officers are available in most systems to handle complaints or violations of various types.

A Description of Residential Treatment Centers

Residential treatment centers (RTCs) are similar to hospitals. They provide 24-hour care but are not licensed as hospitals. They offer mental health treatment programs with a more limited amount of medical personnel on staff (compared to psychiatric facilities); they are somewhat more selective in terms of admitting actively psychotic or suicidal children. RTCs vary in terms of the intensity and restrictiveness of services they provide with some being highly structured locked settings that are minimally different from psychiatric hospitals and others being far less structured and minimally different from group or foster care homes. Some are licensed to serve only a few children while others are set up to serve hundreds. Most RTCs serve children with needs up to two years but about 15% are designed for long-term treatment of severely disturbed children for whom there is no cure or possibility of normal development (Tuma, 1989). Each state has its own regulatory process for defining, licensing, and
placing children in residential care (Yelton, 1993).

Financial Costs of Placement

Psychiatric hospitalization and residential treatment are not only the most restrictive forms of treatment but they are the most expensive as well. Psychiatric hospitalization costs approximately $350-$500 per day (but can range higher in private hospitals) with an average length of stay being 30 days; RTCs can range from $100 per day to $400 per day (Stroul and Friedman, 1986). Ziegler-Dendy (1992) reports the national average length of stay in residential treatment is 15.4 months. In an analysis of national expenditures during the 1970s and 1980s, Burns (1991) states that nearly half of mental health dollars for adolescents were spent on inpatient care and almost 30% are spent on residential treatment services. Conversely, less than 25% of the mental health budget was spent on community based services yet they served 70% of the population.

The Clinical Effectiveness of Psychiatric Hospitalization and Residential Treatment

The literature contains several reviews on outcomes associated with both residential treatment and psychiatric hospitalization. Cornsweet (1990) reviews research on inpatient treatment of children and adolescents and summarizes some problems and general findings. According to this review, the majority improve during inpatient hospitalization, but some - especially those who display antisocial behavior - benefit less. Those who respond best are thought to have better resources, both constitutional and environmental from the onset of treatment. Cornsweet suggested that the types of patients seen in inpatient settings have changed over time. In recent years admissions have included a higher incidence of assultive and aggressive behavior, poor academic performance, runaway and noncompliant behavior, and multiple family disruptions and separations. Cornsweet further states:
unfortunately the answers to apparently simple questions such as does inpatient
treatment work and is inpatient treatment cost effective are mired in social,
theoretical, ethical, and methodological problems, and the quest for simple
answers or solutions is likely to end in disappointment (Cornsweet, 1990, p.
73).

The outcome studies reviewed in this report varied in scope and methodological
rigor and ranged from more descriptive and unconvincing reports to two controlled
studies employing preadolescent subjects. Control groups were lacking in the majority
of studies. Dependent measures were often idiosyncratic to the studies themselves and
little or no reliability or validity information was provided. Chart reviews and
interviews with former patients were often relied on as dependent measures. High
attrition rates were reported and only limited information on diagnosis, symptoms or
demographics were included in the studies reviewed.

Pfeiffer & Strzedelecki (1990) reviewed outcome studies from 1975 to 1990.
They completed an exhaustive computerized search from several data bases and
cross-checked references within each of the studies to insure they had the complete literature.
None of the studies reviewed in this article employed random assignment of subjects;
34 studies from 18 journals were included. Most of the studies had "no recognizable
research design beyond the modest reporting of one or more measures taken after
discharge". The more sophisticated studies utilized one-group pretest-posttest designs
beset with threats to internal and external validity. Studies of inpatient facilities as well
as residential settings were included in this review. The authors developed a set of 22
criteria against which they evaluated the scientific rigor of each study. For each study
the relationship between outcome and a predictor value was rated as negative, neutral,
or positive. This value was then adjusted according to sample size.

A syntheses of the results of the studies indicated that both specialized treatment
during psychiatric treatment and provision of aftercare services contribute to favorable
outcomes. These studies also found that healthier patients (less severe child and family
dysfunction, less organicity, less antisocial features) respond more favorably to psychiatric treatment. Age at admission and gender did not predict outcome. Length of stay and IQ showed only modest relationships to positive outcome. In terms of future research, the authors recommend more detailed delineation of critical dimensions of treatment, definitions of follow-up success, use of more rigorous statistical methods and designs, and sharper focus on predictors or types of dysfunctions.

Dalton, Muller, & Foreman (1988) reviewed two outcome studies on preadolescent children that were hospitalized. They concluded that the effectiveness of hospitalization for this age group depends on patient, family, and therapy variables. For psychiatrically disturbed latency age children, long-term positive adjustment for over 50% of patients with neurotic and character disorder problems is noted but fewer than 50% of patients with psychotic problems have positive long term effects. The authors state that there is a need for additional multivariate research to determine which variables respond best to specific therapeutic interventions. The two studies reviewed specific inpatient interventions in the treatment of children with conduct disorder and antisocial behavior. LaBarbera (1984) found no significant change in behavior following three months of psychiatric treatment other than slightly improved social functioning. The other study (Kazdin, Esvedt-Dawson, French, & Unis, 1987) investigated the combined effects of parent management training and cognitive-behavioral problem-solving skills training for 40 children with antisocial behaviors. At discharge and one year later the study group showed significantly less aggression and externalizing behavior at home and at school than the control group. The Kazdin et al. (1987) report is noted in other reviews to be one of the only well controlled studies contained in the literature.

Quay (1986) reviewed several outcome studies on RTCs that appear in the literature. Eight studies selected by the author for review were of sufficient rigor to at
least allow minimal conclusions to be drawn. It was concluded that RTCs can bring about in-program behavior change but there is little or no evidence that the change is maintained over time in natural environments. It was suggested that undersocialized conduct disorder symptoms, especially when severe and pervasive, are less amenable to change compared to symptoms of anxiety, withdrawal, and dysphoria. As with inpatient treatment, most of the literature is characterized as relying on weak designs employing pre-post measurement without control groups.

In another review of the literature, Curry (1991) agrees that the exclusive use of single-sample designs without control groups yields severely limited conclusions that can be drawn from the current literature on hospital and residential treatment. This review concludes that the designs used did not control for maturation or the natural course of psychiatric disorders. The reviewer doubted whether the existing studies could even test the effectiveness of a specific treatment or program. The author asserted that the conclusions based on the studies reviewed must be restricted to the question of which youngsters within a program improved or maintained gains. Given these substantial limitations, the follow-up studies on psychiatric hospitalization reviewed in Curry (1991) were similar to other reviews showing that three subject variables are related to more favorable outcomes: (1) less severe psychopathology, (2) average to above average intelligence, and (3) a reactive pattern of symptom onset. Participation in a specialized adolescent program that included an educational element, completing the goals of treatment, and continuing treatment after discharge were also found to be related to favorable follow-up status. The findings from the residential studies reviewed suggest that many youngsters improve while in treatment, many do not, and some get worse. Adjustment within a program does not predict adjustment at follow-up. A major point made by this reviewer was that residential treatment represents a disruption in the usual adaptive process between a child and his or her environment.
The disruption might be justified for several reasons and could become an extremely valuable learning experience. It was stated that residential placement is not likely, in itself, to lead to good future adaptation. If optimal results are to occur following residential treatment, the future environment must also be altered. It was asserted that the child's environment must be a major treatment concern and more attention should be placed on family support.

Since these reviews, other studies have appeared in the literature. Kolko (1992) examined short-term outcomes at 2, 4, and 6 months with 65 children admitted to a psychiatric hospital unit. All subjects were exposed to a behavior management program, group treatment, individual treatment, family treatment and possible pharmacological interventions. Parents were administered four measures during follow up phone interviews. A multivariate analysis using diagnostic and therapeutic variables (a regression analysis) revealed that ADHD, older age, depressive symptoms, neurological dysfunction, and higher intelligence predicted poor short-term outcome. Analysis of variance revealed no effects of follow-up interval or length of stay. Parents did acknowledge a more positive adjustment at home and measures of consumer satisfaction showed some significant change. Individual and group treatment were perceived as the most beneficial intervention by parents.

Hoagwood & Cunningham (1992) describe the outcomes of 114 subjects with serious emotional disturbances who were placed into residential treatment over the course of a three year period (1987-1990). The subject pool consisted of 75% male and 25% female youngsters that varied in age from 5 to 18 years. An analysis of cost and outcome measures was presented. Outcome measures consisted of interviews and ratings by special education directors who were familiar with the subjects. The average cost per month per youth was $6,316 with a range of $316 to $15,893 per month. The annual cost to the state was in excess of $5 million or $80,000 per youth per average
length of stay. The average length of stay was 18.2 months with a median of 15 months and a range of 3 to 60 months. In 63% of the cases either no or minimal progress occurred over the course of residential treatment or students were discharged with negative outcomes. In 25 percent of the cases subjects had positive outcomes. In 11 percent of the cases students were still in residential treatment but showing progress. Positive outcomes were associated with discharges before 15 months; there was no significant relationship between age of placement and outcome. Cost per month was not related to outcome. During interviews with parents, two thirds stated that if community based services were available to them beforehand, placement could have been prevented. Successful discharges were associated with the availability of community-based services (respite care, day treatment, intensive in-home services, and crisis stabilization). The authors state that generalizations from this study are limited for two reasons: (1) no clinical outcome measures were included that may have been sensitive enough to detect clinically-derived success and (2) there was no control group included.

Oswalt, Daly, & Richter (1991) present follow up data from 498 youth who were in residential treatment during the years of 1981 and 1985 and a comparison group of 84 youth who met criteria for placement at the same facility but were not placed. The comparison group was not randomly assigned. The age of participants at the initial interview was 14.48 with a range from 8-18. The vast majority of participants were male (90%) and Caucasian (65%). Twenty-five percent were African American, 9 percent were Hispanic, and 1 percent other. Participants averaged 2.1 previous out-of-home placements and 5.5 family disruptions prior to placement. The participants were surveyed at various points in time using three questionnaires: an original, a modified, and a final questionnaire. The final questionnaire was administered to all participants at the end of the study and contained all the items from
the original plus other additional items. In the final analysis, the treatment group consisted of participants who had been in residential treatment for over two years (340 participants). No long term differences were found between the residential and comparison group. At the final interview, twenty-one percent of the treatment group and twenty-four percent of the control group had spent at least one day in either a corrections or psychiatric unit during the previous 6 months. There were no long term differences attributable to program effects on: (a) placements, (b) self reported delinquent or criminal activities, (c) victimization, (d) drug or alcohol usage, or (e) measured psychological indices. Former residents were less likely to indicate that they felt forced to live where they were currently living. No significant group differences were noted in terms of employment and income at the final interview but the residential group did have a higher level of educational attainment. This study was fraught with methodological problems. The participants varied in the number of surveys administered, the intervals between surveys, and the ages at which surveys were administered. The treatment participants varied in terms of the length of time spent in the program and the positive or negative nature of their departure.

The Current Status of Psychiatric Hospitalization and Residential Treatment

Policy analysts in the area of children's mental health appear to agree that the rate of institutionalization of children and adolescents needs to decrease (Kiesler, 1993; Weithorn, 1988; Goldfain, Heath, Hardesty, Berman, Gordon, and Werks Lind, 1985; Burns, 1991; Lundy and Pumariega, 1993; Knitzer, 1982). In a scholarly and often cited analysis of the rising rates of psychiatric admissions for children and adolescents, Weithorn (1988) asserts that this trend reflects a "makeshift" solution or attempt by society to manage a population for whom such an intervention (e.g. psychiatric hospitalization) is usually inappropriate. As indicated in her review of the literature,
"troublesome" (e.g. conduct disordered) youth who do not evidence serious psychiatric problems or suffer from mental illness make up two thirds of the admissions to psychiatric hospitals. Although some form of outside intervention is needed with this group, psychiatric hospitalization is a poor fit for the needs of this population.

During recent years the rates of admission into public psychiatric hospitals have decreased, but the rates of admission into private for profit hospitals have risen dramatically (Weithorn, 1988; Kiesler, 1982, 1993; Bickman & Dokecki, 1989; Keegan Eamon, 1994). Weithorn (1988) states that during the period of time between the 1920s and the 1970s admission rates for youth increased more than eight-fold within the public sector. However, between 1971 and 1980 admission rates continued to rise but the location of hospitalization shifted from the public sector to the private sector. In 1971 private hospital admissions accounted for 37% of the total hospitalizations; in 1980 they accounted for 61% of the total. National admission rates are not available for public hospitals after 1980. However, there was a four and one-half fold increase in national juvenile admissions into private psychiatric hospitals between 1980 and 1984. Weithorn (1988) further contends that some of the increase is a consequence of increasing rates of divorce and the subsequent impact it has on families. Also, reforms within the juvenile justice system prior to the seventies have made that system inaccessible to families desiring an intensive intervention. Many children now hospitalized in mental health facilities probably would have been admitted to juvenile justice facilities prior to the deinstitutionalization of the juvenile justice system in the 1970s.

Weithorn (1988) also states that the most powerful reason for the overuse of psychiatric hospitalization of juveniles is that the private and government funding of mental health services strongly favors inpatient over community treatment. Kiesler (1982, 1993) agrees with that analysis and states that families may have no other choice
other than to hospitalize. Inpatient treatment is often the only available option for many in the absence of reimbursement for other forms of treatment.

Weithorn (1988) reviews the growth of private psychiatric hospitals stating that in 1968 for-profit mental health hospitals were nonexistent. In 1980 investor chains owned 25% of the private psychiatric hospitals; two years later they owned 43% of the share. It was suggested that investors have benefited from for-profit health care and all indications suggest that corporate domination of health care will continue to expand. The psychiatric hospital's profit margins are large, investments costs are low, inpatient care is widely insured, and the complexity and ambiguity of psychiatric diagnostic practices makes cost control efforts difficult for outside sources (Weithorn, 1988; Kiesler, 1993). Inpatient treatment of children's mental disorders has become an increasingly important resource for hospital administrators and there appears to be great pressure to keep beds full (Kiesler, 1993).

Mental health administrators from the public sector often observe a curious phenomenon that occurs on a regular basis in private mental health hospitals. Youngsters frequently experience a complete recovery from their diagnosed disorder at the time their insurance benefits run out. The lack of integrity in diagnostic practices seems to be dictated by the financial interests of the organization more so than by the actual condition of the patient. There is a fear that this industry will become a major influence on national politics and that the influence would benefit stockholders, not patients.

Many for-profit hospitals tend to use marketing techniques that cross appropriate ethical boundaries. They market through television, radio, and written advertisements and some ads suggest embellished outcomes. Parents that are involved in an acute crisis or who are having chronic problems with their child may be particularly susceptible to that style of marketing and be erroneously persuaded.
Frank and Dewa (1992) state that to some, the entry of for-profit providers is alarming because the quality of care and the need for treatment are difficult to observe. In a standard well running market consumers are usually well informed and service providers would lose business if an inferior product was offered or if unnecessary services were provided. In the case of children's psychiatric placement in particular, consumers are poorly informed and providers are less likely to lose business if substandard treatment occurs. These authors state that there is plenty of margin in which for-profit corporations can exploit the consumer's lack of information. Marketplace penalties for the provision of poor quality care are somewhat improbable and the organizations can focus on maximizing shareholders earnings.

The philosophy that treatment should be provided in the "least restrictive environment" may not always be a reality. Gottlieb, Reid, Fortune, & Walters (1990) found that prior to hospitalization only one half of their subject pool over three months received only very limited outpatient services or none at all. They concluded that 50% of the subjects who were admitted received an inadequate trial of less restrictive treatment.

Sondheimer, Schoenwald, and Rowland (1994) state that the current practice of placing youth in psychiatric hospitals and residential treatment centers is alarming given the multiple tolls endured by the youth, their families, and communities. They state that although hospitalization provides crisis stabilization, it does not correct the environmental variables that precipitated hospitalization. Kiesler (1993) suggests additional iatrogenic effects of hospitalization: (a) undercutting a sense of self-efficacy and encouraging dependency, (b) the potential harmful effects of being labeled as "crazy" by oneself or others, and (c) the cutting off of crucial social support and social relationships that are important for children.

Institutions that house children are not always bastions of protection and
safehouses from all harm. Despite efforts to the contrary, suicide does occur in inpatient and residential settings (Cotton, Drake, Whitaker, & Potter, 1983; James and Wherry, 1991). Locked-door seclusion (sometimes accompanied by physical and/or chemical restraint), is a major treatment element in many child and adolescent hospital and residential facilities. Aikens and Ricciuti (1992) report average duration of seclusion episodes to be over four hours for children below 14 and over five hours for older children. The practice of seclusion is particularly susceptible to staff abuse and can easily become overly punitive (Cates and Cooper, 1983; Garrison, 1984). Many adolescents are placed in residential treatment for perpetrating sexual abuse, forcible sexual assault, and other types of sexually aggressive behaviors. In an institutional setting there is always the potential for sexual exploitation either by residents or staff members. If offenders continue to offend while at the placement facility, the impact on the victimized residents can be devastating (Ross & Villier, 1993). Adolescents with sexual issues are particularly vulnerable to abusive staff members due to their histories of victimization; there is no reliable way to identify a sex offender through employee screening procedures other than through prior convictions. Children and adolescents placed in residential and psychiatric settings observe an endless assortment of aggressive, self-defeating, bizarre, and acrimonious behaviors that they can incorporate into their own behavioral repertoires for future use.

Goldfine et al. (1985) sum up the research literature on institutionalization of children and adolescents by saying that "there is no scientific evidence demonstrating the efficacy of psychiatric hospitalization of children and adolescents" (p. 534). They contend that there appears to be a covert expectation in the medical profession that alternatives to psychiatric hospitalization are too risky and must meet a standard of proof of efficacy to which hospitalization has never been submitted. Henggeler (1994) concurs that no experimental evidence exists that supports the clinical efficacy of
psychiatric hospitalization or residential treatment. Lundy and Pumariega (1993, p. 2) state:

a treatment modality as major as psychiatric hospitalization for children should be expected to meet the minimal standards set for other modalities utilized in medicine and related fields. The Food and Drug Administration allows advertisement of medications and procedures based upon demonstrated effectiveness and safety. Effectiveness involves the determination that an intervention produced the intended results. Safety implies freedom from danger of unintended results, or that such results are greatly outweighed by intended positive results. Necessity implies that the intervention is required in order to have that intended result, with the burden of documenting this necessity currently falling upon the provider. One would think that an intervention in which a significant percentage of health care dollars are invested would be based on these standards, but this is not the case with child psychiatric hospitalization.
WRAPAROUND SERVICES AND A SYSTEM OF CARE

Stroul and Friedman (1994, p. xx) defined a system of care as follows:

A system of care is a comprehensive spectrum of mental health and other necessary services which are organized into a coordinated network to meet the multiple and changing needs of children and adolescents with severe emotional disturbances and their families.

The Child and Adolescent Service System Program (CASSP) initiative originally set out to expand the service options available to SED children. This effort sought to individualize service packages by virtue of having a wide range of alternatives available and an ability to make the "best fit" between the child and the service array. A strong importance was placed on case management among the components. Outpatient therapy, day treatment centers, therapeutic foster care services, home-based services, crisis services, respite care services, and others are now part of an array of program options many communities have to offer. However, as the system of care model was implemented, it became evident that an important aspect of providing truly effective care included the provision of flexible services that addressed very specific needs of individuals as opposed to requiring them to fit into existing programs (Burchard & Clarke, 1990).

The term "wraparound" was first coined by Behar (1985) and is now widely used. "Wraparound" is considered both a philosophy and overall process which dictates that services provided must be tailored to the specific needs of all children and families, even if they are part of a categorical service program. The "wraparound process" refers to a specific set of policies, practices, and steps used to develop individualized services and supports for children and families with complex and enduring needs (VanDenBerg and Grelish, 1996). The wraparound process is more fully described below and in the method section.
A wraparound approach allows for the provision of any service (traditional or nontraditional) that is specifically designed for individual youngsters (or their families) that enables them to achieve treatment goals and fulfill unmet needs. The concept of wraparound services is applied broadly to indicate the creative combination of all types of services, resources, and supports which are needed by a child and family.

Needs are looked at across life domain areas. VanDenBerg and Grelish (1996) describe the life domain areas that are focussed on in wraparound plans. They are: (a) residence (e.g. Do the current living conditions meet the child and family's needs?); (b) family or surrogate family (e.g. Who is in the family? Do they have access to one another? What do they need to stay in touch with one another? Are there unmet needs that seriously impair family functioning?); (c) social relationships (Do family members have friends? Do they have opportunities to socialize? Do they have fun and ways to relax?); (d) educational and/or vocational (What will it take to ensure an education for the children? Are rights to an appropriate education ensured? Do older children have access to vocational opportunities?); (e) medical care (Are all health care needs met?); (f) psychological/emotional (Are there unmet needs or unresolved issues which impede normal interactions within the family of community?); (g) legal (Are there issues around custody? Do family members have representation if involved with the judicial system?); (h) safety (Is everyone in the family safe? Is the community safe?); (i) cultural (Are cultural differences present and considered?); (j) behavioral (Are any family members exhibiting behaviors which must be addressed if the quality of life for the family is to improve?); and (k) spiritual (Does the family have unmet spiritual needs?).

The International Initiative on the Development, Training, and Evaluation of Wraparound Services (1992) defines wraparound services as:

interventions which are developed and/or approved by an interdisciplinary services team, are community based and unconditional, are centered on the
strengths of the child and family, and include the delivery of coordinated, highly individualized services in three or more life domain areas of a child and family. A thorough ecological assessment drives the wraparound service plan. If a need exists and it cannot be met using existing services, services are created on an individual basis and wrapped around the child and family to facilitate their adjustment in the mainstream (p. 2.).

Wraparound services, whatever they ultimately turn out to be, should ensure that all of the needs in all of the child's relevant life domains are met. In this model it is important that needs be defined in positive terms (such as a parent's need to find employment or a child's need to stop hurting other children) even though the need may be for remedial action (VanDenBerg, 1991, 1993; Katz-Leavy et al., 1992).

In the state of Washington this approach is referred to as "tailored care" and the service planning is referred to as "process facilitation". The Washington method is very similar to other national efforts to provide individualized services but three process elements are at the forefront of their approach: (1) access (the parent and child must have a valid option at inclusion in the decision making process), (2) voice (the parent and child must be heard and listened to at all junctures of planning), and (3) ownership (the parent and child must agree with and be committed to any plan or set of activities concerning them or their life decisions). (Whitbeck, Kimball, Olson, Lonner, and Mckenna, 1992; Olson, Lonner, Whitbeck, 1992; Robinson & Whitbeck, 1992; Olson, Whitbeck & Robinson, 1991).

Franz (1995) defines wraparound as an eclectic process for developing and implementing comprehensive plans of care for families with children who have complex and enduring needs; wraparound is most effective when used in the context of an integrated system of care that provides ready access to flexible resources from a variety of human service disciplines.

VanDenBerg (1993) elaborates on the distinction between "categorical" and "individualized" services. In the traditional service delivery system (categorical services), children are served by pre-existing programs (such as those services within a
system of care described above). If the program does not meet the child's needs, a referral is made to another categorical service or the child remains inadequately served. In some instances, even with expanded services, the improvements are not enough to have an effect on the most disabled youth (VanDenBerg, 1989, 1993). In an individualized or wraparound approach, services are based on the unique needs of the child and family and are not tied to the availability or the constraints of a particular categorical service. In a pure individualized or wraparound approach, every child has a different intervention; in a categorical approach each child receives the same intervention.

The wraparound approach is said to have two primary founders: Karl Dennis and John VanDenBerg. They both were pioneers and successful at dealing with difficult children and families in very practical ways. Both worked at different levels: VanDenBerg was a state level bureaucrat in Alaska and Dennis was the director of an alternative program in Chicago that worked with Chicago's most difficult youth.

Karl Dennis states the following about wraparound (Katz-Levy, Lourie, Stroul, & Zeigler-Dendy, 1992, p i):

The service approach is not new, it is not innovative, it is not even particularly creative -- it is just the right thing to do. If any one of us stop to look at children and their families from the standpoint of their strengths rather than their weaknesses, and if any of us is willing to commit ourselves to offering care unconditionally, then we will be able to help families to meet their needs. While in recent years this concept has been given the name "wraparound" and it has been given a more formal structure, it is really very simple. It is what you would do for youngsters and their parents if you really liked them, what you would do if you were given the tools that would allow you not to give up on them, and what you would do if you could break free from the constraints that both our professional training and agency structures place upon our desire to do what makes sense.

In a similar vein VanDenBerg (Third Annual Wraparound Family Reunion, 9/19/94) stated the following during a keynote presentation:

There are no magic answers in this approach. We are all learning and making
things up as we go along. The basic notion involved in wraparound is that when people get their needs met, they get better. It is very much a take care of your own approach.

Although the concepts of "systems of care" and "wraparound services" are distinct, the two can and should be integrated (VanDenBerg, 1993). In many communities "wraparound" services are a significant component within a system of care. Some communities simply cannot afford an extensive continuum of care. Wraparound services can exist without a continuum of care in place and a continuum of care can exist without wraparound services.

Philosophical Underpinnings

As a philosophy there are several underlying values involved in a system of care and/or wraparound approach (VanDenBerg and Grelish, 1996; Katz-Leavy et al., 1992; Stroul and Friedman, 1986). These philosophical values are summarized below.

Individualized Services and Supports

This value encompasses the notion that each service plan is intrinsically unique. When providing individualized services only one child and family are considered at a time; the particular services involved are exclusive to that particular child and family. This is contrasted with the notion of focusing on groups of individuals within the confines of a specific program or agency. Services are designed to reflect family needs versus service system convenience.

Community Based Services With an Emphasis on Normalization

This value implies that services should be provided in the most "normative" environment possible. Normalization refers to supporting lifestyles that are as similar as possible to the youngster's well adjusted contemporary peers and providing services
that are culturally, ethnically, and age appropriate (VanDenBerg, 1991). Enabling the child to live in her/his own environment is always preferable but if not possible, all efforts are made to keep the child within her/his community in a family-like setting. Often, when a child cannot remain in the home for various reasons, therapeutic foster homes (within the child's community) are the placement of choice in that they provide a more normal environment than an institution.

**Family Partnerships**

This value implies that a partnership with the family must be developed. The child and family are included in each aspect of service provision. Effective individualized services are dependent upon parent involvement through all phases of service delivery including planning, developing, implementing, monitoring, and evaluating. The entire process revolves around providing comprehensive services to the child and family and is it is critical that a close collaborative relationship is developed with the family. Historically the focus of treatment has been on the child as the unit rather than on the family and on mental health issues rather than on the full range of services needed by the child and family. In the past, efforts were exclusively concerned with "formal" services while ignoring support provided by "informal" networks (Friesen & Koroloff, 1990). In this approach a broad view of the family is taken and informal supports are seen as crucial.

**Strengths-based**

This value states that a strengths-based, ecological perspective drives the assessment and following individualized service plan. The process builds on the unique values, strengths, and social and racial make-up of the children and families. This value is in contrast to the traditional approach of emphasizing pathology and
deficits. A strength-based approach can help build rapport and trust with providers and families. Problem areas of the child and family are not ignored. It is thought that if problem areas are to be addressed appropriately, interventions must be based on strengths. A strengths-based assessment is not restricted to the mental health domain. It includes understanding and taking into account the child and family across all environments and life domains.

**Cultural Competency**

This value implies that children should receive culturally competent services that are sensitive and responsive to cultural differences and special ethnic needs. Efforts to learn about, understand, and respect cultural/ethnic variables that impact on the child and family must be made.

**Unconditional Care**

The unconditional nature of care involves two components: (1) an inclusive intake policy specifying that no child can be rejected or found ineligible for services due to the severity, complexity, or difficulty of their presenting problem; and (2) once a child is accepted for services a long term commitment is made to the child and family (i.e. the providers do not give up on the child or eject/discharge the child due to their challenging or disturbed nature). Under this value the providers should not reject a child and family from services but should change services when the needs of the child and family change.

**The Process of Individualized Care**

In addition to being a philosophy, individualized services involve a process with several critical features: (a) interagency collaboration, (b) case management/care
coordination, (c) the actual design and composition of the wraparound or individualized services, (d) flexible funding, and (e) measuring outcomes (Katz-Leavy et al., 1992; Stroul and Friedman, 1986; Stroul, 1995; VanDenBerg and Grelish, 1996). These features are elaborated on below with the exception of wraparound planning which is discussed fully in the method section.

**Interagency Collaboration**

In an interagency collaborative approach individuals from various child-serving agencies form teams which make decisions about the composition and intensity of services at various levels. The plans must then also be "owned" by the larger community. Greater resources are made available when staff and services are combined by multiple agencies and the workload and responsibility for time-consuming and complex cases are shared. Interagency collaboration also promotes shared ownership of existing problems. It also improves tracking of services and makes individualized care easier to implement (Katz-Leavy et al., 1992; Stroul and Friedman, 1986; VanDenBerg and Grelish, 1996).

In a collaborative system the mandated roles and responsibilities of specific agencies still exist and are acknowledged but it is assumed that an effective service plan must be centered on child and family strengths and needs, rather than on agency features (Stroul and Friedman, 1986). Many of the services that are provided are not provided by the efforts of any one agency but through multiagency efforts. Some functions are filled by the families, para-professionals, community members, parent cooperatives, or other similar arrangements. Private practitioners and facilities also play an important role in some communities. The service plan is intended to be function-specific and driven by the individual situation rather than agency-specific. Such collaborations are important for developing, funding, and operating individualized
service plans (Katz-Leavy et al., 1992; Stroul and Friedman, 1986).

**Resource Management**

The management of services is crucial in this approach. The resource coordinator is usually responsible for conducting the assessment and developing (in conjunction with the family) a plan for approval. This individual is also responsible for seeing that the plan is implemented accordingly and that coordination takes place across agencies. Another frequent and important role of this individual (in a wraparound approach) is to create services, when necessary, that do not yet exist. That is, if a client need exists and it cannot be met through traditional/categorical means (existing services in a continuum of care), the resource coordinator becomes responsible to somehow create the means by which to meet the need. Resource coordinators are also referred to by a number of different terms such as case managers, family assistance coordinators, local coordinators, individualized services coordinators, clinical case managers, or clinical case advocators. Regardless of what term is used, the role of the individual is to plan, create, orchestrate, monitor, coordinate, adjust, advocate, and evaluate services throughout the course of treatment (Katz-Leavy et al., 1992; Stroul and Friedman, 1986; Stroul, 1995; VanDenBerg and Grelish, 1996).

**Flexible Funding**

Another major feature of an individualized system of care is flexibility of funding for services. The key feature of a wraparound effort is that there are funds available to customize a treatment plan in such a way in order to meet any need that is deemed unmet. Flexible funds are typically reserved as a means of last resort when other sources cannot pay for the service or item. If flexible funding is not available, providers are forced to fall back on categorical services (VanDenBerg and Grelish,
The concept of flexible funding demands that the money for purchasing the services flow with the child and is available to serve the child regardless of the program the child is in (Katz-Leavy et al., 1992). Burchard and Clarke (1990, p. 51) state:

In terms of logistics this is the linchpin of individualized care. In order to provide care that is unconditional, child-centered and flexible, it is essential that money is attached to the child for the purchase of services and not to a program for the delivery of services.

**Measuring Outcomes**

The basic outcomes associated with the process must be measured. It should be standard practice to gather various qualitative and quantitative measures to be used for feedback to child and family teams and to other stakeholders; if not wraparound is just an interesting fad (VanDenBerg and Grelish, 1996).
A PARTIAL REVIEW OF THE EVALUATIVE LITERATURE ON THE EXPANDED SYSTEM OF CARE MODEL

Evaluative reports are emerging from demonstration sites funded through CASSP grants and the Robert Wood Johnson Foundation that have taken the approach of providing a wider array of program options for SED children and their families. To date, however, there is no scientific evidence that the expanded service model is more clinically effective than traditional services (Thomas, Smith, and Bickman, 1995). The current consensus though, is that community-based services are the state of the art in caring for children with serious emotional disorders (Stroul, 1993). This section is a partial review of the literature that exists in this area.

Part of the evaluation process included a description of the population served within the CASSP demonstration sites. It appears that the "disruptive" or "externalized" disorders are prevalent. Stroul (1993) states that conduct disorder, attention-deficit disorder, and oppositional disorder are very common. In the states sampled 56 to 87% of the children and adolescents fell within this diagnostic grouping. Mood and anxiety disorders comprised the next largest group and multiple diagnoses were common. The majority (two thirds) of those selected for service were males. The mean age was 12.5 with a range of 11-16. The majority (60 to 82%) were behind academically and had a history of psychiatric hospitalization (60%). Many displayed behavior that would be considered dangerous to themselves or others (44%) and a large proportion lived in poverty (more than half in most sites sampled).

In terms of family characteristics, a large proportion had divorced parents or came from single parent households, as high as 70% had involvement with child welfare, and a substantial proportion had a history of physical or sexual abuse (one third) There was also a substantial proportion that reported a family history of
substance abuse or mental illness.

Stroul (1993) summarizes trends in these data across evaluation sites and suggests that those who receive services within a system of care are less likely to be placed out of their homes and if they are they remain out of the home for a shorter time period. Improvements in overall functioning, school attendance, and reduction in negative behaviors are observed in those receiving these services. They also appear to have fewer contacts with law enforcement, incarcerations, and in detention facilities. Recipients appear to be more satisfied with services and costs of services appear to be less than for traditional services delivery patterns.

The evaluation data reported by Stroul (1993) suggests the notion that systems of care can provide high quality, appropriate and cost-effective care. The extent to which services were individualized or the extent to which wraparound services were employed is not apparent from the evaluation data reported above. Additional evaluation information can be found in Stroul, Lourie, Goldman, and Katz-Leavy (1992).

Bickman, Guthrie, Foster, Lambert, Summerfelt, Breda, and Heflinger (1995) describe the evaluation of an $80 million demonstration funded by the Army and the National Institute of Mental Health. In this evaluation, a continuum of care model (similar to a system of care) was compared to the traditional service model. Access and consumer satisfaction were greater but there were no differences in clinical effectiveness between the two service delivery models. A detailed account of this evaluation is beyond the scope of this paper; the interested reader is referred to Bickman et al. (1995) for elaboration.
A REVIEW OF THE EVALUATIVE LITERATURE ON WRAPAROUND SERVICES

Evaluation/outcome studies on wraparound services are also beginning to emerge within the literature. However, well controlled studies evaluating the effectiveness of wraparound services are practically nonexistent. One reason for this is that the area is still new. There are more studies in progress that utilize intensive measurement of outcomes but, due to the nature of the interventions involved, do not employ strict experimental controls (Friedman, September 20, 1994). VanDenBerg (personal communication, September 27, 1994) states that nearly 20 requests for grants from various groups and universities to National Institute of Mental Health have been denied because the independent variables used within wraparound plans cannot be defined precisely and held consistent across subjects.

Friedman (September 20, 1994) stated that there is a need for intensive case studies in this area and concurred that the topic presents particularly difficult problems in specifying precise independent variables and therefore thwarts rigorous methodological efforts. The area is not well suited for group design studies in that respect.

Meeting criteria for a true experiment in this area is difficult. Random assignment is difficult to accomplish and there are many unknown and unforeseen circumstances that encroach upon the lives of SED children and their families. Also, the challenge is made greater by a society who acknowledges the dependence and plight of children but gives them short shrift in funding for both services and research. At present, the definitive experimental design for children's mental health service research is out of reach (Cross, Falloon, Gardner, and Saxe, 1992).
The following material describes the current evaluative literature available on wraparound services. This section only reviews outcome studies that focus clearly on "wraparound services, individualized services, or tailored care". There are additional reports that make mention of these types of services embedded within an expanded system of care but the effects of wraparound services per se could not clearly be determined.

Case Study Reports

One case study reports on the effectiveness of an individualized approach with a 17-year-old youth who had been in out-of-home placements for four years (Harrington, Schaefer, Burchard, 1991). His placement history included several foster care placements, group home placements, psychiatric hospitalizations, and residential placements. He had a substantial history of being destructive, impulsive, oppositional, non-compliant, physically aggressive, anxious, self injurious, verbally abusive, sexually acting out, and suicidal. He accumulated a variety of diagnoses including major depression, bipolar disorder, conduct disorder, anxiety disorder, attention deficit disorder with hyperactivity, identity disorder, and enuresis. An individualized plan was developed by a therapeutic case manager, a clinical coordinator, a consulting psychiatrist, an educational advocate, two residential counselors, a vocational counselor and a child protection caseworker. In this report it does not appear that the subject or the subject's family had a great deal input in the design of the plan, it appears more professionally driven. It was arranged for the subject to: (a) live in a supervised apartment which was, at first, staffed 24-hours per day; (b) to be involved in a day treatment program; (c) to be involved in vocational counseling (help in terms of seeking employment, filling out applications, job interviewing, etc.); (d) to have paid "friends" engage in planned activities with him; (e) to receive daily living skills training.
(shopping, doing laundry, managing money); (f) to receive individual counseling; and (g) to have back up crisis plans in place. Data from an early version of the Vermont System for Tracking Client Progress indicate dramatically reduced occurrences of negative behaviors once the plan was implemented. The positive attributes of this individualized approach as well as problems, barriers and recommendations are described. Even though the wraparound team consisted mostly of professionals vs. members from the informal support system and categorical vs. highly individualized services, this report offers the reader a detailed account of a wraparound plan designed for a difficult youngster.

**Qualitative Studies**

Wraparound services have been utilized with children and adolescents that are considered the most problematic to work with. Macfarquhar and Dowrick (1993) conducted a national survey and found that 71% of the youngsters served with wraparound services received special education services and 64% were in state custody; these youngsters had an average of four prior psychiatric hospitalizations and seven failed residential placements. The survey indicated that despite the high level of psychopathy, these children were successfully served.

Burchard, Burchard, Sewell, and VanDenBerg (1993) conducted a qualitative case study evaluation on 10 youth who received wraparound services from the Alaska Youth Initiative. The participants were the among the most difficult youth in Alaska; all available alternatives including long term placement had failed. The data collected included record reviews and structured interviews with service providers, families, and the youngsters. In 9 of the 10 cases, the participants successfully resided in their own community or a nearby community after being discharged from a residential placement. The participants lived in supervised apartments, apartments in the community, in the
homes of their parents, and in specialized foster placements. During interviews at 6 months postdischarge, 4 of the 8 older youth stated that they were confident that they would be able to remain in the community unsupervised. Of the 8 older youth, 5 were discharged from the initiative and were living in the community at the time of the later interviews. Five of the older participants had either graduated from high school or earned a general equivalency diploma; three of the younger children were reintegrated into the public school system.

Although not a qualitative study, Minton (1995) describes the current status of the Alaska Youth Initiative (AYI). AYI's performance on its original goals has been mixed. The return home of the state's most difficult children was a drastic change that was not always agreed upon by all. It resulted in complications at different levels of the system. Although there were many successes, problems in collaboration from the state departments may have precluded the greater success of the initiative. The initial cooperative nature of the state level group working on the project gradually faded and turned into more of a distrustful working relationship as original members moved on and were replaced by either new politically appointed members or new classified staff. The author states that in areas where there is a larger population and a more treatment oriented infrastructure, services were more successful. This was so because recruiting and maintaining staff appeared to be easier in this type of setting; backup services such as detention centers, emergency respite services and the like were more readily available as well. The level of violence that a participant displayed often was significant in determining the success of a case. Continued training was a barrier also. It was stated that the initial participants in AYI received truly individualized services but as more and more received services they became less and less individualized and "styles" of service delivery occurred that somewhat defeated the notion of individualized care.

Robinson and Whitbeck (1992) discuss findings from a qualitative study they
conducted on 15 families receiving tailored care. They state that all 15 families remained connected with their community teams. Fourteen remained in community placements at the time of the study with an average of 12.9 months in the community. Nine months later during a follow-up showed that all but 2 remained in the community with an average of 20.7 months in the community. The authors concluded that the intervention appears robust and suggest the potential for applicability in other settings.

The qualitative studies found within the literature offer the reader further insight into the wraparound process but due to lack of experimental controls, conclusions formed must remain tentative.

Evaluation Field Studies

The state of Vermont is clearly leading the way in terms of evaluation efforts. Vermont was one of the first 10 states to receive CASSP assistance directed towards building a statewide comprehensive system of care. In addition to offering a variety of easily accessible community-based services, they feature an individualized service approach utilizing a statewide therapeutic case management system that focuses on child and family centered treatment, individualized services provided in the least restrictive setting, interagency collaboration and flexible funding. The efforts of John Burchard, his colleagues and students at the University of Vermont, and the Vermont human service community have lead the way in terms of documenting the effectiveness of the wraparound approach.

Clarke, Schaefer, Burchard, & Welkowitz (1992) followed the progress of 19 children (ages 5-18) who displayed severely maladjusted behavior and their families who received 1 year of wraparound services in their home and a subset of 12 children who received 2 years of intensive school services. Behavior adjustment at home was measured at 3 months, 6 months, and 1 year; behavior adjustment at school was
measured at 4 points over 2 years. Home behavior improved significantly during the 1st and 6th month and continued improving throughout the year. Home-based services included a family service plan developed in conjunction with the family that featured a variety of family and child centered practices consistent with an ecological framework and cognitive-behavioral approach. The actual services may have included training parents in behavior management, problem solving, crisis management, family management, communication skills, assisting parents in obtaining jobs, housing, and community supports. Home-based workers also helped parents in educational planning and decision making by attending weekly school meetings. Home-based services were intensive for six months and then faded during the remaining six months. Clinically and statistically significant improvement in the parent-child relationships and in the quality of emotional care provided at home was noted. No similar gains were noted at school. The actual school services may have included play therapy, cognitive-behavioral interventions, training in social skills, anger and impulse control training, weekly planning meetings, development of service plans, and evaluation of goals and objectives. The authors discuss five possible reasons for the lack of results in the school setting: (1) services may not have been rigorous enough and were provided by interns with little or no experience, (2) there was an annual turnover of interns resulting in a disruption to service, (3) some schools were not receptive and demonstrated a lack of commitment to mainstreaming the difficult SED children, (4) mainstreaming may not be the most effective approach for improving behavioral adjustment for some children and (5) mainstreaming children with SED is new. The authors state that conclusions drawn from this data are limited in that changes in behavioral adjustment were based on verbal reports of the parents and teachers rather than direct observation of the children, there was a one-third attrition rate in the sample, and there was no control group utilized. Follow up measures were also absent from the report.
Bruns, Burchard, & Yoe (1995) examined outcomes for a sample of 27 subjects receiving wraparound services in Vermont. Nineteen males and 8 females (70% of which had a history of placement in residential treatment centers or psychiatric hospitals), ages 8-18 (with a mean age of 13.6) were referred for wraparound services by mental health agencies within the system. The process upon which wraparound plans were arrived at was well described in this study. Dependent measures included the Daily Adjustment Indicator Checklist from the Vermont System for Tracking Client Progress (DAIC; Bruns, Froelich & Burchard, 1995), the Child Behavior Checklist (Achenbach and Edelbrock, 1991), the Restrictiveness of Living Scale (Hawkins, Almedia, Fabry, & Reitz, 1992), and cost data. The DAIC was not collected on a continuous basis but was sampled for four weeks at the start and of wraparound services and for a four week period one year after the start of wraparound implementation. After one year of wraparound services dramatic improvement in adjustment was indicated. Transformed DAIC negative behavior scores and Child Behavior Checklist total and subscale T-scores all demonstrated significant declines as evaluated by paired t-tests. Improvement in compliance as measured by the DAIC approached significance. Additionally, 89% of the subjects were maintained in the community at the outset of the study. Mean costs for services across subjects were $3,859 in the first month and declined to $3,556 in the 13th month; this was not a statistically significant decline. Unfortunately, subjects were not randomly selected and no comparison group was included in the study.

Yoe, Bruns & Burchard (1995) report an evaluation of 40 children and adolescents who received wraparound services for 12 months. The participant pool was 62% male, ranged in age between 7 and 20 years (with a mean of 16 years), and were at risk of or had a history of residential treatment (40% had prior placement histories). Many of the participants were referred into the program from residential
placement and were entering the community again. A very high percentage (78%) of these participants were in custody of the Vermont Department of Social and Rehabilitation Services (child welfare), 15% had gained self custody, and only 7% were in the custody of one or both parents. The Quarterly Adjustment Indicator Checklist (QAIC) from the Vermont System for Tracking Client Progress was employed as one measure along with the Restrictiveness of Living Environment Scale. Educational placement information was gathered from school officials and service intensity and cost information was tracked as well. Individually tailored and flexible services designed by interagency treatment teams and coordinated by therapeutic case managers were implemented. It was not clear from the report to what extent the plans involved family input. The services were provided in the least restrictive environment, incorporated flexible funding, and were based on the unique strengths and needs of the individual participants. After twelve months, more participants were living with family members or relatives, in therapeutic foster care settings, and in independent living situations, and the number in regular foster care and residential treatment settings decreased. Residential restrictiveness decreased significantly over the course of a year and 90% of the participants were maintained in the community. In terms of educational placements, the number of youth enrolled in alternative residential schools and the number completely mainstreamed in the regular school environment decreased. The total number of youth mainstreamed with some form of assistance increased and the number in separate/segregated classrooms stayed the same. There was a significant reduction of total problem behavior scores as measured by the QAIC according to paired t tests. Yoe, Santarcangelo, Atkins & Burchard (1996) also describe this study.

Tighe and Brooks (1995) present cost data on providing individualized services to 40 children and adolescents receiving individualized services over the course of a 12 month period. A sample of 26 children in out-of-state residential treatment facilities
was used to compare costs. Sixty-three percent of this all Caucasian sample were male and the mean age was 14.4 with a range from 6-19. The child welfare department in the state had custody of 73% of the children and 50% were eligible for federal money for foster care and adoption assistance. Of this pool of participants, 17.5% were adopted, 65% were not adopted, and adoption status was unknown for 15.5% of the sample. The majority of the participants were at risk of residential placement or returning to the community from such a placement. The financial data that was sampled was part of an ongoing evaluation in the state. Actual costs from the mental health and child welfare departments were available. Educational costs were estimated according to the Vermont Department of Education statistics for public education; the actual costs of specialized schools were used when necessary. The data indicated that the majority (40%) of the costs for providing individualized services was related to living expenses (e.g. foster care, professional roommates, and independent living expenses). Educational expenses made up another 26% of the total costs and the cost of case management was another 22%. The total costs of individualized services for an average child was $4,036 per month ($48,427 per year). The average cost of out-of-state placement was $4,893 per month ($58,718 per year). No pattern appeared when analyzed over 12 months. However at 18 and then again at 24 months the costs decreased. Case management costs did decrease significantly over time, especially during the fourth quarter of services.

Rosen, Heckman, Carro, & Burchard (1994) evaluated client satisfaction with 20 participants who received wraparound services in Vermont. Participants consisted of 12 males and 8 females ranging in age from 11-19, with a mean of 16.2 years. Participants were interviewed bi-monthly over a three month period. Each participant was interviewed six times. The participants were asked to rate their satisfaction with services, their involvement with services, and whether they perceived that the care they
received was unconditional (the extent to which their service providers would "stick with them no matter what"). The QAIC (described above) was filled out by case managers and used to assess behavioral and emotional outcomes. Overall satisfaction was uncorrelated with behavioral adjustment. There was no correlation between involvement on behavioral adjustment variables except for a "marginally significant" correlation on Internalizing Behaviors on the QAIC. Subjects perceptions that their care was unconditional was strongly associated with behavioral adjustment.

Hyde, Woodworth, Jordan, and Burchard (1994) report evaluation results on a sample of 70 youth who received wraparound services for one year. Of this sample 42 were successfully returned from out-of-state placements and 28 were successfully diverted from being placed out of state. The primary DSM-III-R diagnoses in this sample were: (a) affective disorders (33%), (b) conduct disorders (30%), (c) attention deficit disorders (16%), (d) learning disabled (9%), (e) psychosis (5%), (f) personality disorders (3%), and (g) sex-related disorders (1%). The average per diem cost for the youth placed in out-of-state care was reported at $269 vs. $216 for community care provided when they were brought home.

Although the research methodology included within this set of studies lacked rigor, they all offer similar findings (e.g. youngsters who received wraparound services experienced improved outcomes) and serve as a first wave of demonstrations that yielded valuable information to the children's services community.

Studies Utilizing Experimental Controls

Studies employing adequate experimental controls are sorely lacking in the current literature. One ongoing study does exist in an initial report format. Clark, Prange, Lee, Boyd, McDonald, and Stewart (1994) conducted a well controlled, community-based experiment comparing standard foster care services to their Fostering
Individualized Assistance Program (FIAP). A repeated measures, between group design was employed. The subject pool consisted of 132 children who were randomly assigned by a computer generated random number system to either standard foster care or the FIAP; subjects were either labeled emotionally or behaviorally disturbed or "at risk" of such a label as described by screening indicators. At the onset of the study, the subject pool as a whole had spent on the average of 2.6 years in out-of-home placements and had an annualized rate of 3.8 placement changes across a range of settings from foster home and emergency shelters to psychiatric hospitals and detention centers. The standard practice group received the prevailing level of care, support, and other services that the state system provided to children placed into foster care. Each child had a permanency plan that ensured safety but it may or may not have included interventions such as outpatient counseling, respite care, home-based intervention, etc. The FIAP model included wraparound plans utilizing strength-based assessments, life domain planning, clinical case management and follow along supports and services. Wraparound teams included all relevant adults involved with the child including biological parents, foster parents, teachers, workers, specialized workers, paraprofessionals, and natural supports. Multivariate repeated measures analysis of variance were conducted at Wave 1 (entrance to study) and Wave 4 (18 months later). Psychopathology scores as measured by CBCL ratings from caregivers showed significant improvement from Wave 1 to Wave 4 for FIAP subjects on the withdrawn and attention problem subscales than did the standard practice group. FIAP children also showed lower pathology scores on the whole than standard practice children. FIAP children were significantly less likely to run away, engage in serious criminal activity, or be incarcerated compared to the standard practice group. The authors stated that a limitation of the study was that this type of design cannot account for the complexity of the process of change that takes place over time in this type of situation.
This study is ongoing and future evaluations will take into account growth curve analysis across seven waves of data in order to encompass a more complex, individualized assessment of change over time. Earlier preliminary reports on this ongoing research project can be found in Lee, Clark, and Boyd (1992) and Clark, Boyd, Redditt, Foster-Johnson, Hardy, Kuhns, Lee & Stewart (1992).
METHOD

Setting

General Demographics

The study took place within the human services sector of St. Joseph County, a small rural county located in southwestern Michigan along the Indiana border. According to the 1990 U.S. Census, the population of St. Joseph County was 58,913. In the 1990 Census data it was part of a three county area used for some descriptive purposes. Branch County (population 41,502) and Hillsdale County (43,431) were the other two counties in the grouping. This tri-county area showed a 3.8% increase over the 1980 Census figures. This rate was over ten times that of the growth rate for the state of Michigan which grew at only 36%.

St. Joseph County experienced a 4.9% increase between 1980 and 1990 in the total number of families. Family data were grouped into two categories: "married-couple families" and "female householder, no husband present". From 1980 to 1990 there was a 1.2% increase in the number of married families. More important, there was a 35% increase in the number of "female headed households" in St. Joseph County during this period. This trend has important implications for the need and utilization of family support services given the increased vulnerability these families face.

The median age in St. Joseph County in 1980 was 29.7 while in 1990 it was 32.8. In Michigan, 20.7% (1,931,916) of the population was composed of children 1-14, but 22.4% (32,173) of the District's population was made up of children 1-14 years. The district also had a lower percentage in the 15-44 year age group which meant the area must rely on fewer wage earners to support its tax base than the rest of
the state.

The racial composition was overwhelmingly white (97.5%). Michigan's population was 83.4% white. African-Americans made up 1.7% of the population with .4% and .4% Asian and Pacific Islanders and "other" respectively. Major ancestries reported include Dutch (7.1%), English (17.4%), French (5.2%), German (42.0%) Irish (16.1%), and Polish (4.8%).

In 1990, the average income in Michigan for married couple families was $49,958. In this district the average income for married couples was $39,055. Single parent families in Michigan had an average income of $17,386. The average for a single parent family in this district was $15,577. This was only 40% of the average of married couple families in the district. The percentage of people below the poverty level for the entire district was 12.8%; in Michigan on the whole, 13.1% fell below the poverty level. In Michigan 26.3% of its citizens were below 185% of the poverty level while in St. Joseph county 28.8% were below that mark. Twenty-two percent of the children under 5 in St. Joseph County live in poverty. Nine percent (13,400 individuals) of the district received food stamps which compared favorably with Michigan's 11.1% receiving food stamps. Additionally, 13.4% of the Districts population were Medicaid recipients.

The district's counties experienced an increase anywhere from 21-36% in the number of female headed households between 1980 and 1990. Part of this increase could be due to a higher than average divorce rate in all three counties. As mentioned, these types of families were more likely to have only a fraction of the income as compared to their married counterparts. This was likely due to reliance on only one wage earner and lower average pay for women. These families were more likely to be living in poverty. According to Kids Count in Michigan, children living with only their mothers are seven times more likely to be living in poverty than children living with
married families.

St. Joseph County had an unemployment rate of 10.9% which was higher than the statewide rate at the time of 9.4%. The types of jobs in the area also serve to contribute to the high poverty rate. Most consisted of service and manufacturing jobs. Service-related jobs were 55.8% of the total in St. Joseph County. These types of jobs are notorious for low wages and inadequate or absent health benefits. High unemployment and poverty rates made it difficult for residents to pay for and receive health care services. Because of the service based economy, many who worked did not have health insurance (7.1% of St. Joseph county residents did not have health insurance). However, health care insurance was not a guarantee of comprehensive coverage, access to, receipt of health care services.

In St. Joseph County 26.2% of the residents over age 25 did not have a high school diploma; this was slightly above Michigan's 23.3%. Whereas 10.9% of Michigan residents had a bachelor's degree, only 7% of this district's residents did. As for graduate degrees, 6.4% of Michigan residents held such degrees while only 3.8% of District residents held graduate or professional degrees. High school expenditures were within the low range for spending per student. State expenditures ranged from $2,651 to $8,539. For the district, expenditures ranged from $2,853 to $3,849, which fell within the lowest quartile in the state. In the district there seemed to be a direct correlation between the amount of expenditures per pupil and the percentage of students who did not graduate from high school.

**Human Service System Characteristics**

Wraparound services involve interagency collaboration across human service agencies. The State of Michigan was in the midst of a substantial systems reform across all of its humans service departments. St. Joseph County was selected as a
demonstration site involved in one of the major system reform projects. The Michigan Interagency Family Preservation Initiative (MIFPI) was developed to explore ways of redesigning human service delivery systems aimed at helping high risk families. The project was led by the Department of Mental Health, Public Health, the Department of Education, and the Department of Social Services. All the counties in the state were invited to submit proposals to participate as pilots in the development of this new collaborative initiative. Seventeen sites were selected. Due to the immense nature of changes in services delivery and the complexity of the federal, state, and local funding involved, the number of demonstration sites was limited to seventeen counties. The demonstration sites were intended to: (a) improve child and community safety through local coordination; (b) keep more families intact without any increase in state or local funding; (c) limit high costs of out of home care by focusing and concentrating services from social services, courts, mental health, public health, education and private agencies; (d) decategorize services and make help available based on the needs of the child/family rather than concerns of who's in charge and who pays; (e) increase the amount of federal funds available to the community for intensive community services; (f) develop new financing models which provide incentives for community care with maximum local flexibility; (g) eliminate gaps in services between departments; and (h) implement a strategic reinvestment process to move state and local funds from out of home care into new services models designed to get better results for more families.

The focus of MIFPI was not on new program development but on basic system change. The intent was to support new ways of doing business between the major human service providers in the state. The sites were directed to focus on: (a) establishing a collective responsibility for leadership to support families and help them become independent; (b) designing wraparound services to avoid high cost of out of home placements; (c) combining funds to increase efficiency and create access to
additional federal funds; (d) creating flexible funds to test the application of capitated/HMO-like services in child welfare, juvenile justice, and children's mental health; (e) analyzing local budgets to assess the degree to which existing funds are matched to federal revenues and/or can be re-directed to expand intensive community based services; (f) developing joint training for administrators, managers and line staff from all participating agencies; and (g) bringing in national experts to assist sites in areas such as evaluation, medicaid financing, education, and wraparound services.

MIFPI was supported by funds from the participating department grants from the Clark Foundation and several Mental Health Federal Block grants. The various demonstration sites throughout the state prepared grant requests and were awarded monies based on the requests. A core administrative team consisting of central state staff from the Department of Education, Department of Mental Health, Department of Public Health, and Department of Social Services managed the project. St. Joseph County was selected as a MIFPI site and was awarded two separate grants of $50,000 for its first year of participation.

At approximately the same time that this study began, the state level human service directors issued a joint communication to the directors of local public agencies stating their expectations that each community develop one multi-purpose collaborative body as a decision-making body to coordinate human services within that community. The directors did not mandate a single model or structure but they did set minimum membership requirements within the body to include: (a) agency directors or designated representatives with decision-making authority, (b) consumers/parents, and (c) private agency and community representatives. The state human service directors would then require the use of this collaborative body for activities involving state-sponsored interagency initiatives, requests for proposals, block grants, performance contracts, and other funding provisions involving public agencies. A description of the interagency
system that was in existence in St. Joseph county during the onset of this study follows.

In St. Joseph County this state mandate was met with the "Human Service Council". The Human Service Council was the executive branch of the local human service system and it included executives/directors from the following organizations: (a) the Juvenile Court (The Judge of Probate), (b) the Department of Social Services, (c) the Intermediate School District, (d) the Public Health Department, (e) the Substance Abuse council, (f) Glen Oaks Community College, and (g) Community Mental Health. It did not include parents or consumers contrary to the State's mandate.

Historically, the members of this group did not get along or communicate well. At the very onset of the study this group was loosely knit and met only sporadically and informally over breakfast at a local restaurant. Attendance often included only one or two members. There was no agenda, structure, etc. Six months into this study the group became more organized. The state level directors did in fact require a great deal of work from this group and the scope of their concerns went well beyond wraparound services. Regular meetings were held with strict agendas, a recorder and minutes, a chairperson, an administrative assistant, and rules around structure. This group assumed administrative responsibility for policies, joint planning, priority setting, service development, financing, resource allocation, resource development, system management, problem solving, and other concerns of mutual interest to the participating agencies.

The "Community Team" was the administrative entity responsible for the Wrap Around Program. This group consisted of administrators that were vested with the authority to commit the resources of their particular agency in order to meet the needs of the families involved with the initiative. It made specific decisions on who received services and specifically what those services consisted of. Service plans, budgets, and
additional requests required approval from this committee. It monitored progress and evaluated outcomes. The Community Team made reports to the Human Service Council as directed.

The Community Team consisted of: (a) the Community Mental Health Children Services Supervisor; (b) three Children Services Managers from the Department of Social Services (from Children’s Protective Services, Foster Care Services, and the DSS Program Manager); (c) the Juvenile Court Director; (d) a Public Health Supervisor; (e) the Director of Special Education Services from the Intermediate School District; (f) a representative from the Substance Abuse Council; and (g) a parent/consumer to represent community and general parental interests. This group met bi-weekly, had a chairperson, recorder, minutes, and organizational structure. Various Community Team members also attended regularly scheduled trainings and demonstration site meetings sponsored by the state level technical assistance groups from the Department of Mental Health and The Department of Social Services.

The "Child and Family Teams" were the primary mechanisms in place to develop, coordinate, and monitor service delivery. The "resource coordinator" was a critical member on this team and was responsible for conducting the initial intake and assessment tasks (using strengths and needs based strategies), developing a service plan, accessing services, coordinating services, monitoring services, and advocating for the children and their families. The resource coordinator was a masters level clinician with several years experience in treating children and substance abuse problems. Special resource coordinator trainings are held statewide and technical assistance was available from the state departments and consultants. The Resource Coordinator was directly supervised by the Supervisor of Children's Services at Community Mental Health, an employee of the Substance Abuse Council, and was housed at the Public Health Department.
The Child and Family Team consisted of the parent(s), the resource coordinator, mandated workers on the case (e.g. probation officers, DSS workers) the identified client (if appropriate), siblings (again if appropriate), and additional people that the family selected who knew them best. Family members were active and played the most important role in planning and making decisions relating to their needs and services. They had the strongest voice in determining their service plan. Precautions were taken and meetings were conducted in such a way to avoid intimidating family members. Efforts were focused on making them feel comfortable and valued. If the service plan necessitated hiring additional people to work with the family directly (paraprofessionals), they became part of the Child and Family Team. The composition of the teams changed from time to time as the family's needs changed.

A Family's Entry Into the System

A family entered into the wraparound process via direct service level workers (i.e. Juvenile Court workers, Child Protective Services workers, DSS Foster Care workers, CMH case managers or therapists, Public Health employees, various school personnel, etc.). A referral form was presented to the Community Team by the referring worker for consideration. The member of the Community Team who represented the agency of the referring worker screened the case prior to it's being considered by the Community Team.

After a referral form and interagency release of information form were received, the Community Team performed its gate keeping function. The Community Team was responsible for looking at the whole picture of the prospective family. After a referral was presented, discussed, and carefully considered, a vote was taken by the chair of the Community Team. Each agency had one vote in the decision making process on whether to accept a case or refer it back to the worker with other recommendations.
The majority vote determined access to wraparound services. If the voting resulted in a deadlock, the chair person of the Community Team decided the vote.

In the decision making process the emphasis was placed on providing wraparound services to youngsters who: (a) had serious emotional or behavioral problems which required intensive treatment services, (b) were in or at risk of an out-of-home placement as a result of their emotional/behavioral problems, (c) had multiple needs that either could or have placed them in contact with multiple systems/agencies, or (d) had received services from providers but past efforts had not been successful. The youngster's emotional or behavioral problems were, or were expected to be, long term in nature and which are disabling, requiring services that go beyond usual agency capacities and required service delivery and coordination across agencies.

Participants were not required to have a specific diagnosis, cutoff score, or level of multisystem involvement to be considered eligible for services. They were however, required to meet federal criteria to be considered "Severely Emotionally Disturbed".

**Subject Selection**

A clinical trials approach was used to select subjects. Once a family was approved to receive wraparound services, they were asked if they would like to participate in the research study. They were not denied services if they declined to participate in the research project. Some families (4) declined to participate.

Because the initiative was new, certain aspects required "start up" time before service delivery could begin. As it turned out, the families were selected far in advance of the time they actually began the wraparound process. This resulted in a very adequate baseline period.

During baseline conditions, the author met with the parents of Subjects 1-3 weekly to collect the VSTCP data. The VSTCP data was collected monthly from the
juvenile detention unit where Subject 4 was placed. No direct services were provided during baseline conditions.

Subjects

Subject 1

Subject 1 was a 14-year-old male. He was the youngest in a sibship of five brothers. Both biological parents were present in the home as well as three of his older brothers. The ages of the other brothers were 16, 17, 20, and 21. The 17-year-old brother was developmentally disabled and received residential treatment at the onset of the study; he was placed out of the home for 18 months (first in a state psychiatric hospital for nine months and then to a residential treatment facility) due to severe physical aggression towards family members and a chronic mood disorder.

Subject 1's family had a long history of coercive interactional patterns which started at a verbal level but often escalated into physical aggression (Patterson, 1982). This was a long term problem that was noted since the boys were quite young. Subject 1 was extremely verbally abusive towards other family members and they in turn reciprocated with further malicious and intimidating verbal responding. There was a high rate of physical aggression between the brothers themselves and also the father.

Subject 1 and his 16-year-old brother often formed a coalition against other family members. Physical fights and assaults between various brothers occurred on a daily basis. With the exception of the mother, each family member had a history of becoming physically aggressive with every other family member at some point in time. The father was a long distance truck driver and was out of the home four days per week. He was often placed in a position to settle an ongoing problem between brothers upon his return home; he did so by threatening or engaging in corporal punishment.
Subject 1 stated that his father often hit him on the side or back of his head with his fists. At one point, Subject 1 broke into a home and stole a handgun; he used it for several weeks to threaten and intimidate his father until it could be taken from him.

In terms of relevant historical family information, Subject 1's father met his mother when she was 16-years-old. He was 17 years her senior. The two left the state after dating briefly and were illegally married in another state against the wishes of the mother's family. Her parents disowned her. She gave birth to the oldest son when she was 17-years-old. The father had five other children (through a previous marriage) that he abandoned; he did not visit, contact, or provide for these children.

As a youngster, the father was an amateur boxer and was ranked highly in national tournaments. He was coached professionally. He served three years in a federal penitentiary for counterfeiting when he was 20-years-old. His boxing career ended at that time. Due to his silence while incarcerated, the FBI was never able to confiscate the plates he used to make the bogus money. The father often told his sons stories of his counterfeiting exploits, prison escapades, close scrapes with the law, ability to con or fight other men, and other nefarious anecdotes.

The father learned to weld in prison and eventually became accomplished in that trade. For many years the family lived in the western and southern portions of the country where good jobs for welders could be found. When the oil rigs were capped in the Gulf Coast during the Iranian Oil Crisis, he lost his lucrative job as a Class 1 welder for an oil company and the mother insisted upon moving closer to her estranged family. Good paying welding jobs were hard to find once they moved and the father had to take a job driving a truck to support the family.

After reuniting with her family, the mother became involved with various fundamentalist churches. She had firm religious beliefs. During times of family crisis, she engaged in verbal responding that approximated speaking in tongues. Her speech
at those times consisted of spurious religious quotes and phrases that were often tangential, irrational, and difficult to comprehend.

Subject 1 displayed a variety of serious conduct problems. In terms of compliance, he refused to obey parental directives as well as established family rules. He came and went as he pleased, ate and slept when he pleased, and chose friends and activities that his parents prohibited. He refused to attend school at the onset of the study and spent most days roaming the streets. Previously, when he did attend school, his behavior was considered extremely noncompliant; he was often suspended.

Subject 1 engaged in deliberate property destruction at home and in the community. At home he kicked or struck walls and doors with objects. Along with his 16-year-old brother, he inflicted six thousand of dollars worth of damage to the house the family rented for eight years. They were evicted and forced into bankruptcy as a result.

The family could not immediately find another landlord that would rent to them. They were forced to live in a campground out of a small camping trailer and tents for seven months until they were able to find another house to rent. While living in the campground, Subject 1 refused to urinate in the public rest room. For six hot summer months he urinated at a spot just outside the window of the trailer where his parents slept so they would smell his excrement during the humid nights. Subject 1 was also destructive to property in the community at large. He and his 16-year-old brother broke into homes and damaged property in a similar manner; they also stole property from the homes as well as from local stores.

According to his parents, Subject 1 used marijuana almost seven days per week and alcohol whenever it was available. This pattern of usage went on for approximately one year. It seemed obvious to the parents by looking at Subject 1's eyes and observing his behavior that he was under the influence of marijuana on a daily
basis. The parents observed Subject 1 while intoxicated on alcohol several times prior to the onset of the study. Alcohol was not as readily available as marijuana. Both the drug and alcohol use were forbidden by the parents. While under the influence of substances, Subject 1 deliberately cut and burned himself in order to leave scars. Also, Subject 1 was in the process of tattooing himself using pins and ink. He had many "jailhouse" tattoos on his arms and shoulders.

Subject 1 was not eligible for special education services. His school placement was in a regular education classroom. He was not involved in any extra curricular activities and never had been. He did not have any hobbies or areas of interest besides listening to "heavy metal" music. Subject 1 displayed good social skills and could make and keep friends. He had several friends but most were prohibited by his parents because they were thought to be bad influences.

Subject 1 was placed on probation at the onset of the study. The charges were truancy, home invasion, malicious destruction, breaking and entering, curfew violation, and theft of a vehicle (two offenses). Subject 1 was actually involved in the thefts of three vehicles. The first one was stolen in conjunction with his 16-year-old brother and another young man. They took a car and went on a high speed joy ride. Being a small 14-year-old and not an accomplished driver, Subject 1 accidently sped off the rode, became airborne for about 40 ft., flew between two trees while airborne, and rolled the car several times. The car was destroyed but the boys were not injured; the police report stated that it was a miracle no one was killed. The second theft again involved the brother and a different young man; they stole the mother's car and were caught by the police heading out of town. Subject 1 was not charged with this theft. The third theft was in conjunction with yet another young man who was on probation and who wore an electronic tether. They stole a probation officer's car from a parking lot and drove several hundred miles to Lexington KY (in route to Miami FL) before
they were apprehended by the police.

Subject 1 was previously on probation for prior offenses. The prior offenses included breaking and entering, illegal entry, retail fraud, possession of stolen property, and an off road vehicle violation.

This family received fairly extensive services through the years from different agencies. The Community Mental Health Agency provided intensive home-based services consisting of family therapy and behavior management for 1 year when Subject 1 was nine years old. Services were offered for the whole family but the father declined to participate. The family was, however, stabilized as a result and remained so for nearly one year after those services ended. At that point, Subject 1 began breaking into houses and was placed on probation; he received 30 hours and community service and was on probation for sixty days. After that he was caught shoplifting and placed on probation for ninety days, spent one weekend in detention, and he and his family were ordered to participate in an intensive 30 day family treatment program designed to preserve the family unit (Michigan's Families First program). Following participation in that program, the father would not allow the family or any family members to participate in any further treatment despite the fact that the developmentally disabled son was becoming more and more aggressive. He soon required hospitalization and was placed in a state psychiatric hospital. During the next year, Subject 1's behavior also began to deteriorate according to juvenile court and school records. When he again came to the attention of the court, he too was slated for residential treatment given the fact that extensive services had already been provided and he was a danger to himself and the community.

Subject 2

Subject 2 was the 16-year-old brother of Subject 1; details of the family...
circumstances are the same and will not be repeated here.

Subject 2 also exhibited a number of serious conduct problems. He was noncompliant with parental directives and long standing rules. He selected friends that his parents did not approve of, was seldom home, came and went as he pleased, and engaged in social activities that his parents did not approve of. He refused to attend school despite his parents efforts to get him to do so. He had a history of acting out in school and was considered a major disciplinary problem by his former schools; he had a lengthy history of suspensions. He received special education services in reading and math and was labeled Learning Disabled by the school system.

Subject 2 took part in property destruction both at home and in the community. He broke into homes, damaged, destroyed and stole property alone and in conjunction with his brother. He also shoplifted from stores. Subject 2 was extremely verbally abusive towards adults and his older siblings. For over one year the parents reported that he used marijuana on a daily basis and drank alcohol whenever he could obtain it (both against his parents wishes). He was observed intoxicated on many occasions. He also deliberately cut, burned, and tattooed himself in attempts emulate youngsters that he knew were in gangs. Subject 2 could engage in appropriate social functioning and had several friends that he was able to keep.

Subject 2 was placed on probation at the onset of the study. The charges were home invasion, malicious destruction, breaking and entering, curfew violation, and theft of a vehicle (two counts). The first auto theft was in conjunction with Subject 1 and another young man. They took a car and went on a high speed joy ride. The car was destroyed but the boys were not injured. The second theft involved stealing the mother's car; he was apprehended following a high speed chase.

Subject 2 was also previously on probation for prior offenses and worked himself off. The prior offenses included breaking and entering, illegal entry, retail
fraud, possession of stolen property, and an off road vehicle violation.

Subject 3

Subject 3 was a 14-year-old male. He was the oldest of two brothers. His younger brother was 7. His mother was present in the home; his father lived in Tennessee with his wife and two other children. The father had a long history of emotional problems, substance abuse, and criminal activity. Subject 3 had not had contact with his father for nearly three years; his father had been out of the home for six years. During his last visit with his father he was abandoned in Tennessee and the local Department of Social Services had to transport him back to Michigan. Prior to the onset of this study, Subject 3’s mother approached the Children Services Unit of the Department of Social Services and stated that she would have to give him up if she could not get help.

Subject 3 had an infamous history with the local school district. School officials stated that although he had "some redeeming qualities" (e.g. excellent social skills when he elected to emit them), he was poorly behaved, non-compliant, physically and verbally aggressive, defiant, and destructive of property (e.g. kicked holes in school walls). They stated that he swore, hit, kicked, jumped on other students, feigned illness, and was frequently absent from school. In further describing his behavior, the school officials used the terms rude, disrespectful, argumentive, and uncooperative. His academic work was always incomplete, he did not come to class prepared, and his grades were in the failing range. The school officials stated that this boy had a negative impact on others in his peer group and that he had leadership skills but they were displaced.

The school made several attempts to help the family but these were unsuccessful. Many of the school officials thought he should be removed from the
home and placed in residential treatment. The school stated that they had tried everything that they could to support and help the family. Their 21 different attempts to help included: (1) picking him up at home and driving him to school, (2) placing numerous phone calls to locate him, (3) asking his mother to call school when he would be absent, (4) going to the mother's workplace to inquire about him when absent or in trouble, (5) asking other agencies for additional services, (6) varying his seating arrangements, (7) providing a peer to work with, (8) providing individual support from teachers, (9) providing cooperative group placement, (10) providing individual assignments, (11) sending letters home to his mother, (12) meeting with his mother and workers at school, (13) out-of-school suspensions, (14) warnings, (15) academic contracts allowing him to advance to Middle School early, (16) study skills training, (17) allowing him to sleep for one or two class periods, (18) encouraging counseling, (19) escorting him to class, (20) safe room placement, and (21) removal from school by the police. There were several physical confrontations during disciplinary actions in which Subject 3 was restrained. Those incidents put a tremendous strain on the school/family relationship.

Subject 3 was a major problem in the community as well. He was often mean to and got in fights with other kids his age. He stole cigarettes, watches, shoes, knives, etc., from stores. He also stole an automobile and was apprehended by the police. He was non-compliant with his mother. His behavior was verbally and sometimes physically aggressive towards his mother and younger brother. He engaged in frequent tantrums at home in which he kicked holes in walls and destroyed whatever he could. He came and left his home when he chose. He refused to come home most nights. He stayed at his 14-year-old girlfriend's home or at the home of an 18-year-old male suitor/lover. He was placed on probation at the onset of the study for offenses that he committed within the previous months. The Juvenile Court Judge thought
Subject 3 should be removed from the home and placed into residential treatment. His initial probation orders stated that if he engaged in any further problem behavior, he would be immediately placed into residential treatment.

Subject 3 displayed poor judgment in sexual matters. According to his verbal reports, he had daily intercourse with his girlfriend at her home or his. These reports were substantiated by his mother and the parents of the girl. He often manipulated and took advantage of others sexually. He had a history of being sexually abused by a family friend starting at the age of nine. The perpetrator was convicted based on Subject 3’s testimony and is presently serving his sentence in prison for the offense. The local authorities (e.g. his probation officer and the police) could often not locate him for weeks at a time. He would occasionally come home briefly to get food and then leave; his mother stated that she would not have know of his location for days. Several local police officers that dealt with him on a regular basis and his probation officer thought he should be removed from the community and placed into residential treatment.

Subject 3 had a history of two psychiatric hospitalizations. He was diagnosed with: (1) Major Depression, severe, recurrent, without psychotic features; and (2) Conduct Disorder, unspecified, aggressive type, unsocialized. One of the psychiatric reports stated that he "was admitted because he had become increasingly agitated, irritable, extremely distressed and depressed to the point that he was not able to think or concentrate", and he "had been devastated with signs of hyperactivity". According to the psychiatric report, he also had experienced significant homicidal and suicidal ideation. He hit his mother and stated that he wanted to kill her and his brother in their sleep. The course of treatment in the hospital was unsuccessful on both occasions.

Subject 3’s mother had extensive juvenile court involvement when she was a teenager. Her parents were not married and they separated when she was young. She
went back and forth between parents, got in trouble with the law, and spent two years in a residential treatment center, one year in a "girls home", and then foster care. When she was 16 she met Subject 3's father and was pregnant by age 17. She stated that she became pregnant so that the court would release her from probation. She maintained sporadic relationship with the father of Subject 3 but they were never married. Within the year previous to the onset of the study the mother made 5 serious suicide attempts (e.g. slitting her wrists and overdosing on antidepressants and alcohol). The mental health agency refused to offer her services until she received intensive substance abuse treatment. Her suicide attempts always occurred while she was intoxicated. She was a binge drinker and could maintain sobriety for several consecutive months. The mother had earned her GED. She stated that she did not know how to manage her children's behavior. She had a male live-in paramour who drank to excess on a daily basis. They often got into physical fights; he became involved in physical confrontations with Subject 3 also.

Subject 4

Subject 4 was a 15-year-old male. He was part of the following sibship: (a) an older half brother (18 years) serving time in prison for Criminal Sexual Misconduct; (b) an older full sister (16) placed in restrictive residential treatment for a variety of reasons including sexual assault to younger children, physical aggression, suicide attempts, and other severe conduct problems; (c) two younger half brothers and one younger half sister that were placed in specialized foster care. Subject 4's family had over 60 Children's Protective Service complaints filed in two different counties. Most were neglect allegations. Subject 4 filed many of them himself. The mother had a chronic history of leaving her children unsupervised or under the supervision of an inappropriate caretaker. Subject 4 and his siblings were often observed playing on
busy streets at risk of being struck by traffic, starting fires, playing with flammable liquids and lighting them, caring for one another or attempting to care for one another in the absence of adult supervision (the older brother was known to give Subject 4 the mother's Haldol or Thorozene to calm him down), destroying property and generally being out of control. The home(s) of subject 4 were seen as unfit for the minor children to occupy, in that they were filthy, unsanitary and roach infested.

Subject 4's mother grew up in an extremely problematic home. Her mother served time in prison for homicide as well as child neglect. Her mother also prostituted her and her sister to local men as well as allowing the biological father to have frequent intercourse with them prior to his abandoning the family. Subject 4's mother served time in jail for issuing bad checks and child abuse. She had a long standing history of mental health involvement and was diagnosed as schizophrenic. Her parental rights were terminated approximately one year prior to wraparound involvement.

Subject 4's father and mother had a sporadic relationship. They were married for a three year period but he divorced her due to her chronic infidelity. The children were primarily in the care of the mother but the father did have custody for short periods. During the termination process of the mother's rights, the father had been out of the area for 10 years and could not be located. The courts received a tip on his whereabouts and placed a newspaper ad in a number of Arizona papers. Through the ads he was located and agreed to come back from Arizona and take custody of Subject 4 and his sister. The father worked as a mechanic and had his own business in Arizona. The father reportedly had a history of emotional problems and substance abuse. He was hospitalized following a suicide attempt and had several "breakdowns". It was reported that the father was extremely negative in his comments towards Subject 4. He was resistant to working with service providers that attempted to help him with his problem children. The arrangement did not last long and the sister was placed in
residential treatment and Subject 4 went into specialized foster care.

Subject 4 was placed on probation for Criminal Sexual Misconduct, Second Degree. While placed with the biological father he sexually abused the six-year-old daughter of the father's paramour. Subject 4 was sexually abused several times by his older brother and other undisclosed perpetrators. He in turn violated his sister, also. Subject 4 disclosed that he had sex with 10-15 other younger children that he "groomed". He preferred six to seven-year-old children of either gender as sexual partners.

While in specialized foster care Subject 4 was noted to exhibit poor social skills, manners, and social boundaries. His behavior was considered eccentric and feral by the foster parents. He displayed a tendency to isolate himself to the extent of locking himself in his room. During these times he would "fantasize" and plot out how he could get even with others. He then carried his plans out. He was extremely noncompliant towards authority. Another boy in the home went to school and told classmates and teachers that Subject 4 was a sex offender. He was teased daily and increased aggression towards peers. The increased aggression as well as his already strange behaviors and notoriety as a sexual offender resulted in his school and foster placement failing. During this foster placement he had been placed in the juvenile detention unit on four occasions.

Subject 4 was then placed in a psychiatric hospital for several months. He was diagnosed as: (a) Bipolar disorder, Manic, Severe, without psychotic features; (b) Paraphilia, not otherwise specified; and (c) Attention Deficit Hyperactivity Disorder. According to hospital reports he showed clear symptoms of both manic and depressive features. He showed a marked amount of pressured speech, flight of ideas, psychomotor agitation, poor judgment, marked lability of mood, excessive anxiety, tearfulness, delays in getting to sleep, inability to respond to redirection, and
grandiosity. He demonstrated anticipatory anxiety which "seemed to reflect underlying feelings of doubt and depression" regarding his father. Following his hospital stay Subject 4 was again placed into specialized foster care but that placement failed within two weeks for similar reasons. He was then placed in the juvenile detention center and remained there for nearly six months due to lack of a suitable placement. He could not take part in the school program at the detention center due to his severe conduct at that time.

The Development and Implementation of the Service Plan

The Resource Coordinator was responsible for facilitating, writing, budgeting, submitting for approval, and monitoring the wraparound plan. The process for arriving at the plan and the implementation of the wraparound plan itself formed the basis of the independent variable in this study; the following process was held constant across all subjects. Actual time frames or number of planning sessions tended to vary across subjects given the individual differences in team configuration and specific circumstances.

Step 1

A strengths assessment was the first step in this process. The strength assessment consisted of two parts: (1) a listing of current strengths and (2) a reframing of problem areas. The current strengths of the family are considered the most important aspect in building an effective plan (VanDenBerg, personal communication, September 27, 1994). Establishing rapport and identifying strengths were the focus of the initial sessions with the Resource Coordinator. There was no standard assessment format involved in assessing strengths. Strengths were identified through informal interviews and conversations during initial contacts with the family. The strengths, talents,
desires, interests, capacities, etc. of the family were identified in the first few meetings. Several strengths of the family were noted during these initial meetings no matter how minimal they were. Problem areas and deficits were "reframed" (Watzlawick, Weakland, & Fisch, 1974) by the Resource Coordinator and clinical supervisor and presented to the family at subsequent meetings along with the perceived strengths of the family.

**Step 2**

During the second step the Resource Coordinator completed two tasks. First, the basic processes, goals, and concepts of wraparound were explained to the family. The second task involved identifying a list of people that the family would include as members on their "Family Team". The goal was to identify important players in the lives of the child and family while inspiring a strong, non-judgmental family centered approach.

Strategies for determining who would be included on the Family Team follow. First, the family was asked to list 4-8 people who knew them best (e.g. friends, family, clergy, neighbors, etc.) and were important in their daily lives. If the family had difficulty with this step, this information was gathered from informal conversation. Conversation topics included hobbies that family members have, how key players have emerged in the coordinator's life, or by pointing out individuals who were proximately close and may have been overlooked (neighbors, family friends, etc.). An emphasis was placed on naturally occurring key players and building a community base. Individuals whose commitment to the family was unconditional were considered the most important. After the team members were selected, the resource coordinator made contact with all team participants prior to the first meeting and set the stage for the first meeting by briefly stating the purpose of the team. The first planning session was then
scheduled.

Step 3

The third step of the process marked the beginning of the service planning. The teams were assembled either at a family home or an agency office depending on the preference of the family. The wraparound process was explained to the team members again. The Resource Coordinator then read the strength assessment and reframed problem areas to the family team. It was explained that the strengths formed the foundation upon which the plan should be built.

Next, the team examined the "needs" of the family. The team was asked to describe what the life of a "typical/successful" youngster and family from that town or neighborhood was like in the different life domain areas. The basic question that the team needed to answer was "what does this child or family need to be more successful in this area". Each of the following 12 life domain areas were examined by the team: (1) residential (home/living conditions), (2) educational/vocational, (3) social, (4) medical/health, (5) family, (6) legal, (7) safety, (8) psychological, (9) cultural, (10) spiritual, (11) recreational, and (12) other domains. The team was then asked to "brainstorm" about what was needed in each of the different life domain areas while keeping in mind the current strengths. Two general rules were explained to the group on how this process should take place: (1) any idea was posted and considered and (2) the group could not talk about money or funding issues while brainstorming.

All brainstormed needs, ideas, goals, options, etc. were listed on poster type paper by the Resource Coordinator and displayed where ever the group could see them. After all of the life domain areas were discussed, the team voted to prioritize the most important ones. A minimum of four target life domain areas were required.

The process of meeting these needs/goals was continued by developing specific
action steps. As part of their commitment to the team, participants were asked to commit to or take responsibility for specific steps. If team members could not provide the needed service or if there were no ways to meet it through the existing services within the county, ways to "create" the service were discussed. Several team meetings might be necessary to design a wraparound plan. Both individually tailored interventions and the use of established categorical services available in the community (if appropriate and desirable by the client level team) were used in the plan.

A plan for crisis situations was also completed as part of this step. It was perhaps the most important part of the service package. Suicidal episodes, physical aggression, runaways, general periods of noncompliance, etc. were likely to continue even with wraparound services in place. It was often helpful to spell out "worst case scenarios" and plan accordingly.

**Step 4**

After the plan was designed by the Child and Family Team, a narrative of the plan and a budget was prepared by the Resource Coordinator. The plan and budget were then presented to the Community Team for review and approval. The Community team considered the following:

1. Did the plan consider the strengths of the family and build on those strengths?
2. Was the plan written in such a way as to ensure a sense of family ownership?
3. Was the plan child centered and family focused? Were the needs of the family reflected?
4. Was the plan individualized for the particular child and family?
5. Were opportunities for "normalization" within the community part of the
6. Were the services provided in the community?
7. Did the plan include strategies to meet needs across all relevant life domains?
8. Did the plan include specific methods to handle crisis situations?

After the plan was reviewed and approved, the budget set forth within the plan was considered. The Community Team reviewed the budget to ensure that an accurate and reasonable budget had been submitted. The budget and plan were considered in terms of how well they included all existing services first and flexible funding second. The Community Team reviewed the requests to determine if existing services met the identified needs of the family. The Community Team took into consideration how efficiently the budget used flexible funding. A realistic appraisal of the community's ability to financially support this plan was made.

A $65,000 pool of "flexible funds" was established from the MIFPI and Federal Block Grant monies. The "flexible funds" could be used to provide individualized services when categorical services could not be used or did not apply. Other youngsters involved with the initiative also had access to the grant money. If the needs could not be met through existing services and categorical funding, the specific plan designed to meet the needs was funded through this money. These services could be tailored to meet the specific needs that existed within any of the major life domains of the families.

Step 5

After the plan was approved, it was implemented. The implementation sometimes involved hiring paraprofessionals to serve in various capacities.
Step 6

After the Child and Family Team implemented the plan it was monitored and evaluated. The Resource Coordinator met with or contacted specific team members on a daily basis initially. The Child and Family Teams still met on a weekly basis (or more often if needed) at the start of service implementation to discuss effectiveness, problem solve, alter the plan, etc. Meetings were less frequent as progress stabilized and the need for intensive monitoring subsided. The Resource Coordinator was required to keep the Community Team informed weekly concerning implementation. After each three month period the plan had to be presented to the Community Team again for financial approval.

Experimental Design

A multiple baseline design across subjects was utilized as the research methodology (Baer, Wolf & Risley, 1968; Poling, Methot & LeSage, 1995). Although the process and techniques used to derive the interventions were held constant, the exact composition of interventions used as the independent variables were not held constant from subject to subject. Each of the child and family teams determined the specifics of the individualized interventions for each separate subject. This was crucial to the "wraparound" process.

In a multiple baseline design the effects of the independent variable are demonstrated by applying it to different baselines at different points in time. If each baseline changes when and only when the independent variable is applied, the effects can be attributed to the intervention rather than extraneous events. Furthermore, inferences are based on examining performance across several different baselines (in this case across subjects). The baseline data for each subject delineate the current level of performance and predict future performance.
Data collection during baseline conditions consisted of: (a) initial training sessions with the author and the Resource Coordinator and (b) short weekly visits to the homes of the parents at which time the weekly data sheets were gathered.

Integrity of the Independent Variable

After wraparound services had been implemented for two to three months (depending on the subject and the onset of their specific plans), descriptions of the participants, the child and family teams, the actual service plans, the results, and the costs associated with the plans of the service were evaluated by members of the Community Partnerships Group (CPG). The CPG is a group of consultants coordinated by John VanDenBerg, Ph.D. and E. Mary Grelish, M.Ed. Each consultant has been responsible for leading or has assisted in developing successful state wide, local, or agency-based wraparound efforts.

John VanDenBerg was one of the reviewers and is known as one of the founders of the wraparound approach. He is president of the CPG and is primarily known for his work in developing the Alaska Youth Initiative. He has consulted with 49 states on services to children and families and was formerly the Coordinator of Children's Services for the states of Alaska and Kansas. He was past chairperson of the National Alliance for the Mentally Ill Child and Adolescent Network, and was the past vice-president of the state mental health Representative for Children and Youth. He was trained at the University of Kansas as a child psychologist.

Neil Brown was another consultant/reviewer. Neil worked for many years in a management role at Huckleberry House, a nationally recognized crisis shelter in Columbus, Ohio. He was instrumental in developing the innovative wraparound effort in Colombia that has resulted in the county being able to return youth placed all over the state to their own county, and preventing dozens of others from being placed out of
county. He consults and trains in several states on the wraparound process.

Patricia Miles was the director of one of the largest private agencies in Alaska and one of the first to participate in the Alaska Youth Initiative. She later moved to Columbus, Ohio and aided in developing the wraparound efforts in Franklin County, Ohio. She is a consultant and trainer for CPG in many states and assists in the system reform efforts taking place in Ohio, Illinois, and Maryland.

Dependent Measures

The Vermont System of Tracking Client Progress

The Vermont System of Tracking Client Progress (VSTCP: Bruns and Woodworth, 1994; Bruns, Froelich, & Burchard, 1994) was utilized as the primary dependent measure on a continuous basis throughout the study. This system provided a means by which objective measures could be easily documented and gathered from parents and others working with the family. This measurement tool included objectively described and reliably measured behaviors that directly related to a child's risk of placement into a more restrictive setting. It was expressly designed to monitor progress of youngsters who receive intensive community based services. The instrument measured the occurrence or non-occurrence of 16 negative and 6 positive behaviors/emotions on a daily basis. Definitions of the actual behaviors/emotions and criteria for scoring are outlined in a detailed user's guide.

Parents and/or caregivers were trained to complete the checklists by the Resource Coordinator. The Resource Coordinator read through the Users Guide item by item with the parents and used practice scenarios to assess acquisition of definitions; they were also given a copy of the manual for future reference. The user's guide is written in a manner that is easily comprehended by parents and caregivers. The parent
or primary caregiver completed a daily record form called the Daily Adjustment Indicator Checklist (DAIC). This task required less than 10 minutes per day. Each week data were gathered from the parents/caregivers by the Resource Coordinator and entered into the computer program.

The computer program component of the system included a continuous data entry format and graphing system that produced graphs which could be easily reviewed and edited. Bar graphs depicting occurrences and non occurrences for any or all of the 22 behaviors are produced by the program.

Preliminary data have been collected on the VSTCP. Yoe, Bruns, and Burchard (1994) examined the external validity of the instrument. DAIC total negative behaviors scores for 20 emotionally and behaviorally disturbed children and adolescents were shown to be predictive of the client's restrictiveness of living environment one year later, with a significant ($p < .05$) Pearson correlation of .50. Burchard and Bruns (unpublished report to be included in future editions of VSTCP users guide) demonstrated a significant .59 correlation between DAIC negative behaviors scores and case management costs one year later for a cohort of 25 subjects. Compliance behavior on the DAIC showed correlations of -.54 and -.70 with restrictiveness and costs one year later. Both of these studies suggest that the scores on these instruments for both positive and negative behaviors are an effective predictor of a child's overall level of challenge.

In terms of concurrent validity, the DAIC has been shown to correlate significantly with the Child Behavior Checklist (Achenbach and Edelbrock, 1991). DAIC total negative behavior scores for a sample of 25 clients showed a .65 correlation with the CBCL Total Behaviors T-scores, including a .43 correlation with CBCL Internalizing T-scores and a .64 correlation with CBCL Externalizing T-scores (Burchard and Bruns, unpublished report to be included in future edition of VSTCP
Reliability of the Dependent Measure

Interobserver agreement data were obtained via paraprofessionals who worked with Subjects 1, 2, and 3. These subjects had workers present during the day who sampled a substantial amount of their behavior (eight or more hours per day) and could therefore complete the DAIC in a valid manner. Subject 4 did not have a paraprofessional worker and therefore no reliability data were gathered on that particular baseline. Interobserver agreement was calculated using the interval agreement method described by Page and Iwata (1986).

The Child and Adolescent Functional Assessment Scale (CAFAS)

The CAFAS (Hodges, 1994; Hodges, Bickman, & Kurtz, 1992) is a clinician rated instrument used to assess level of functioning/functional impairment in children and adolescents. The CAFAS produces a total score as well as separate scores for its component subscales. The five subscales consist of: (1) Role Performance (i.e., how effectively the youth carries out societal roles), (2) Thinking (i.e., the ability to engage in rational thought processes), (3) Behavior Toward Self and Others (i.e., appropriateness of youngster's daily behavior), (4) Moods/Emotion (i.e., regulation of emotional states), and (5) Substance Use (i.e., the extent to which it is inappropriate and disruptive). There are two additional scales that assess the caregiver. The two scales are: (1) Basic Needs (e.g., caregiver's ability to provide basic needs of the youngster such as food, shelter, clothing, medical care and safety) and (2) Family/Social Support scale (e.g., the extent to which relationships and skills within the family meet the youngster's developmental needs). Each scale in the instrument yields a separate score; the total score is the sum of the first five component scales.
An interview specifically designed to solicit CAFAS information from parents is included as part of the instrument. Parents were interviewed prior to the onset of services and then after onset of services on a quarterly basis. After the relevant information was solicited, the severity level was assessed for the previous three months. For each scale and severity level, there are a set of items with explicit criteria describing behavior. The most severe categories and examples are reviewed first. If any item described the functioning within that period, the youngster received the score associated with that level. If none of the items in the most severe category match the youngster's behavior, the rater moves to the next severe category. If none of those items describe the youngster's behavior, the rater moves on to the remaining categories in like fashion. Levels of impairment across all five scales include: (1) "minimal or no impairment" equates to a total score of 0, (2) "low impairment" ranges from scores of 0-10, (3) "moderate impairment" ranges from scores of 20-30, (4) "high impairment" ranges from scores of 40-60, (5) "very high impairment" ranges from scores of 70-80, and (6) "extreme impairment" includes scores of 90 and above.

Detailed training materials are also included as well as a means to train and evaluate rater reliability. Hodges, Watson, and Peregord (1994) found the CAFAS to demonstrate excellent interrater reliability for the total score (Pearson correlations of .92 or higher), good reliability (ranging from .79 to .90) for the three scales on the child (i.e. Role performance, Behavior Toward Self and Others and Substance Abuse), and fair to good reliability (.73 or greater) for the Emotions/Moods scale and the Caregiver scales.

Financial Costs

The total expenses for each wraparound plan were tallied each month. These
expenses included a breakdown of all the categorical services offered (all worker costs per hour across agencies were gathered) as well as any individualized services and expenses that became part of the plans. Total wraparound costs were compared to projected psychiatric/residential costs (had the subject actually gone into placement). The Community Team specified particular institutions where each subject would have been placed. Those institutions were contacted and per diem costs were obtained. Community Team costs were not added into the figures.

Descriptions of the Specific Wraparound Plans

Subjects 1 and 2

As mentioned earlier, Subjects 1 and 2 were brothers. Their service plans were similar but not identical. Subject 1 began receiving services 4 weeks prior to Subject 2; his services were also more restrictive in many ways.

The initial Child and Family Team that designed the wraparound service plan for the two boys was the same. It included the two parents, the oldest brother, the brother who was placed in residential treatment, two aunts (mother's sisters) and one uncle, a former minister from the church where the mother (and sometimes the boys) attended, one of Subject 2's teachers, a counselor from Subject 1's school, the probation officer, the case manager/behavior analyst from Community Mental Health, and paraprofessional aides that were later hired as part of the plan. The meetings were facilitated by the Resource Coordinator who was not a voting member of the team. The team prioritized the following life domains: (1) safety, (2) behavioral, (3) social/recreational, and (4) educational/vocational.

The first service that Subject 1 received was one month in juvenile detention; the probation officer on the team ensured that he remained in detention until plans were in
place for his release. Subject 1 was allowed to attend Child and Family Team meetings while he was detained; he was transported by a special court worker and attended the meetings in leg irons and handcuffs. The unanimous first concern of the team was the safety of the boys and the community given their high rate of aggression, substance abuse, auto theft (and wrecks), and self-injury. The parents stated that the boys would sneak off at all hours of the day or night and that they needed help in monitoring them. They felt that they could not sleep without the boys leaving during the night or destroying their property. The team unanimously voted for 24-hour supervision of the boys; no family members or friends were available to help around the clock in this area. Several possible aides were known to the agencies and an ad was also placed in local newspapers to obtain a larger sample. After interviewing and checking police/CPS records, a pool of aides was established. The family made the final interview and selected enough aides to provide 24-hour supervision; the father requested female aides as he did not wish to have his wife home alone with a male aide. His request was honored. The family received 24 hour supervision for the boys for two months at their request. There were many times when both parents were home; at those times aides were not necessary. During the third month of service implementation, staffing was reduced to 60 hours per week; 40 hours during the week and 20 hours during the weekend. During the eighth month, the hours were reduced to 20 hours per week.

After the pool of aides was trained and ready to begin, Subject 1 was released and Subject 2 was placed in detention which initiated his first wraparound service. He remained in detention for one week (VSTCP data was obtained for both boys from the detention center during their respective stays). As an additional safety and motivational factor, Subject 1 wore an electronic tether upon his release from the detention unit (the tether remained in use until month 10 of service implementation).

The team voted to institute a more organized approach to managing the boy's
behavior. A behavior management program was designed by the behavior analyst and the parents. Once designed and reviewed, the program had the approval of the parents and remaining members of the wraparound team except the boys. The parents agreed to implement the plan with the help of the aides. Four areas were targeted: (1) compliance, (2) peer interactions, (3) adult interactions, and (4) responsibilities. The boys were rated at first every 1/2 hour on a "good", "fair", or "poor" basis (this interval was gradually increased with only one or two ratings per day by the end of the study). One warning was delivered contingent upon violations before prearranged punitive consequences occurred contingent upon further violations. "Goods" were earned if no warnings were received, "fairs" were earned if a warning was delivered and heeded, and "poors" were earned if warnings were given but not heeded. The consequences depended on the behavior that occurred (or didn't occur) and ranged from loss of activities/privileges or allowances to extended timeouts at a "holdover site" located either at a nearby church or the county jail, to "community service", or to juvenile detention. Scores were tallied on a daily behavior sheet and allowances and privileges were earned or lost accordingly. The boys could earn a maximum of $3.00 per day. Privileges included later bedtimes, activities within the home (TV, stereo, videos, telephone, etc.) or supervised activities away from home. A special list of approved activities was put together by the boys and one of the aides on the case. It included activities such as playing basketball, weight lifting, swimming at the community pool, arcade games, fishing, etc. that were available in the community.

The team examined the recreational domain and determined that neither Subject 1 or 2 had many appropriate recreational interests or hobbies. They were encouraged to come up with some interests that they may have wanted to pursue but never had the opportunity to. Subject 1 stated that he would like to: (1) race go carts, (2) race fourwheelers, or (3) learn to play the guitar. Subject 2 stated that he would like to: (1)
go hunting, (2) go fishing, (3) race remote control cars, (4) record "rap" songs or (5) get a "trick" bike and learn to do tricks on it. Some options were ruled out by the parents. The team encouraged developing interests that could be done on an individual and daily basis. It was decided to facilitate guitar lessons for Subject 1 and to assist Subject 2 in acquiring a trick bike. Both boys were given loans that they had to pay back using their allowances. The necessary items were purchased (and eventually paid back) and guitar lessons were arranged. The team also wanted to encourage more appropriate social or athletic activities. Different options were discussed but these boys were not suited for team sports or social clubs. Locally there was a Tae Kwon Do academy that was considered exemplary. The boys were enrolled and required to attend for six weeks; they ended up staying enrolled voluntarily for six additional months and earned high yellow belts and competed in tournaments.

In the educational/vocational domain, Subject 1 required a classroom aide for two months who accompanied him to school and then from class to class to prevent truancy/runaway. After two months the aide made random visits to the school to monitor his progress. When school was in session, each boy carried a "school sheet" to each class and had the teacher rate his behavior during the period and indicate the homework assignment for that day. The scores on the school sheets became part of the daily behavior management program. During the summer months, a tutor was hired and worked with the boys 20 hours per week on remedial reading and math. Both boys were required to seek part time jobs by the wraparound team. Subject 1 was only 14-years-old. Although extended efforts were made, no jobs could be found. Subject 2 was hired at a restaurant part time and became one of their best part time employees. Subject 2 did not require a classroom aide. Both boys were behind 5-6 years academically. During the summer months a tutor worked with them for three hours per day four days per week; the tutor used direct instruction materials and focussed on
Subject 3

Subject 3's initial wraparound team consisted of his mother, his aunt (mother's sister), Subject 3 himself, his probation officer, a CMH worker, the school principal, the assistant principal, the teacher, and the male suitor. The proportion of school personnel was high by the school's insistence. There was a great deal of controversy over Subject 3 (the school was ready to expel him) and also a great deal of tension between the school and the family. The family was willing to accept the team makeup. Subject 3 was labeled Emotionally Impaired and was protected by special education laws whereby he could not be expelled easily much to the school's disdain.

The educational domain was seen as crucial by the team. A behavior plan was designed for the school and the school insisted that Subject 3 be accompanied by a classroom aide that remained at arms length. An aide was hired but the school insisted that the aide did not possess suitable credentials (e.g. a teaching certificate). The school issued several other complaints about the choice of this particular aide (who had worked extensively with delinquents before and was the foster father of Subject 4). The complaints were issued despite the fact that Subject 3 was attending school and doing much better than before. The stage was set for conflict in this domain.

The residential and safety domains were intertwined. At first, Subject 3 refused to stay home and insisted on his former lifestyle. In order to keep him home, the team voted for 24-hour-supervision. Paraprofessionals were brought in and Subject 3 was monitored around the clock. A professional staffing change was made and the CMH behavior analyst was brought in on the case. A behavior management program had been instituted but it became evident to the team that a tighter program was necessary. Some of the aides did not work well with this particular family and staffing changes
took place at that level also. Within a short period a fairly tight individualized program was in place at the home. The family received several months of intensive supervision; later one aide worked with the family on a full time basis. This lasted for the duration of the study.

Recreational activities were lacking and became a priority of the team. The team insisted that Subject 3's former recreational pursuits were no longer acceptable. Subject 3 wanted to play baseball. Subject 3 was an all around good athlete; arrangements were made for him to join a baseball league. Later a pass was acquired for him to swim at the community pool. He also became interested in Tae Kwon Do (it was a prestigious activity in that area) and earned a high yellow belt and several trophies at competitions.

Subject 3's family was prone to crisis (e.g. suicide attempts, financial problems, etc.). Crisis plans were established which specified who the family could call for help at various times. This family also received emergency financial help at many junctures (e.g. car repairs and late rent payments that resulted in eviction notices).

Subject 4

Prior to being involved with the wraparound initiative, Subject 4 had been removed from a placement with his biological father due to criminal sexual conduct, was removed from two specialized foster care placements due to his behavior, was placed in a private psychiatric unit and put on a regimen of heavy medication, and was then placed in the juvenile detention because there was no placement option available. As mentioned earlier, the parental rights of his mother were terminated. An expensive out-of-state residential treatment center that specialized in treating sexual offenders was being considered but the facility had no immediate openings.

Most of Subject 4's anxiety and sadness had to do with not knowing what was
going to happen to him next. He had also experienced the loss of two long term workers that he had known and trusted for years; they were not allowed to contact him even to explain why they were no longer on his case. In his analysis, he was abandoned by those closest to him. The court removed the workers from the case because they strongly advocated that Subject 4 not be placed with his biological father. Despite their recommendations, the court placed him with the father and eventually the problems began.

In a final attempt to avoid long term placement, the court referred Subject 4 into wraparound and made amends with one of Subject 4's long term worker's. The other worker had moved out of the area. The residential domain was crucial for Subject 4. A new specialized foster home was made available to him. He started visiting the home for short periods on weekends. The visits went well and the sadness decreased somewhat. A Child and Family Team was formed that consisted of the worker mentioned above, the foster parents, the probation officer, the Resource Coordinator and Subject 4. However, Subject 4 was still very noncompliant at the detention center and also continued to have problems with his peers.

Subject 4's history of sexual offending was a major safety concern for the team. The residential and safety domains were somewhat intertwined. A safety plan was designed around everyone's concerns about sexual offending. The foster parents had a biological son who was seven years old. That was within Subject 4's preferred age range for sexual partners. It was arranged for John VanDenBerg to attend a Child and Family team meeting for Subject 4 while consulting in the area. Following this consultation, a detailed safety plan was designed. The highlights of the plan follow. Subject 4 was to be closely supervised and monitored at all times. It was Subject 4's responsibility to keep the foster parents informed of his whereabouts at all times. He was required to ask permission before leaving certain parts of the home and entering
others. He was not allowed to be with the foster parent's son unsupervised at any time. Children under 14 were not allowed upstairs (where Subject 4's bedroom was located) at any time. No kids (foster or biological) were allowed in the basement; it was off limits. Subject 4 was not allowed in the son's room at any time for any reason. Only one person was allowed in the bathroom at any time. Subject 4 was to have no physical contact with anyone under 14. Subject 4 was not allowed to give gifts, compliments, favors, etc. to the biological son other than on birthdays or Christmas (e.g. no grooming behaviors). The foster parents were given a thorough explanation of grooming in general and specifics of how Subject 4 groomed his victims in the past. Even though the biological son had not been victimized, he was assigned a therapist who specialized in treating sexual abuse. The therapist met with him weekly to develop rapport and provide educational information to him on how sexual offenders groom victims; those contacts spanned several months and were periodic thereafter. The biological son could contact the therapist at any time. He was also informed that Subject 4 had engaged in that type of behavior in the past. Subject 4 never violated any aspect of his safety plan; no reports of any inappropriate behavior were made by any family member. The plan was made successively less restrictive over the course of the study.

The social domain was also considered important by Subject 4's team; he did not have friends. To an individual his age, friends are very important. The foster family and team facilitated any attempt to help socialize Subject 4. He was encouraged to go to the roller rink and to school activities. He did so and slowly became more accepted socially. Despite the fact that he was eccentric, he was also gregarious. He met a 17-year-old girl and they were allowed to date with a chaperon or attend public school functions. He was later allowed to visit her at her home. They abided by rules set forth around touching, hugging, and kissing. It was a very normal teenage
relationship, and being such, it didn't last forever.

Subject 4 was exceptionally bright and enjoyed mathematics and computers. He was enrolled in a computer course at the community college but it fell through due to lack of student interest. In order to build on his strengths in this area, it was arranged for him to work after hours with a Management Information Specialist (MIS) at the Community Mental Health agency on computer applications. They became close and the MIS specialist eventually became a respite worker who spent 12-20 hours per week with Subject 4. The MIS specialist and his wife became a surrogate extended family for Subject 4 and considered adopting him.

In the medical domain, the plan revolved around reducing Subject 4's medication. He was placed under the care of the CMH psychiatrist and medical director. When he was placed in foster care he was prescribed 600 mg Lithium q.a.m. and 300 mg Lithium 12 hours later. He was also prescribed Prozac 40 mg. B.I.D., Ritalin 20 mg. T.I.D., and Catapres 0.1 mg B.I.D. The Prozac was reduced and discontinued, followed by the Lithium, the Ritalin, and then the Catapres. Within three months, he was medication free, calm, and controllable.

In the psychological/emotional domain, Subject 4 was assigned an individual therapist who worked with him on his history of being sexually abused and issues surrounding his father and his abandonment. Subject 4's father refused to contact him and the court accepted his release of parental rights three months into the wraparound.

In the behavioral domain Subject 4 was placed on a home and school behavior management program. Within two months he earned his way off his behavior management program at home but continued to carry a school sheet to school throughout the school year. The foster father and mother made at least weekly contact with the school to ensure he was doing well and were available throughout the school day for additional assistance if needed.
RESULTS

General Trends Across Baselines

Transforming Data From the VSTCP

The VSTCP measures 22 different areas of problem behavior relevant to SED youngsters; it is a broad assessment tool and not all areas apply to all individuals. Not all of the areas were intrinsically relevant to each of the subjects in this study. Each area is sampled daily on the DAIC. The daily samples are entered into a computer program which produces bar graphs depicting the entered data for each of the 22 areas.

The nature in which the VSTCP displays data was not conducive to a multiple baseline analysis such as the one employed in this study. Traditionally, line graphs are used in such an analysis (Poling, et al. 1995). For the purposes of this study, the effects of the independent variable also needed to be assessed across individuals and behaviors by visually inspecting the data in order to make those comparisons. Because: (a) not all areas of the VSTCP were relevant to these subjects, (b) line graphs were desired, and (c) there was a need to facilitate easy visual inspection of the baselines, data from five areas of the VSTCP were transformed to line graphs and then juxtaposed vertically in order to perform a multiple baseline analysis across subjects and behaviors. The five transformed areas were: (1) compliance, (2) peer interactions, (3) physical aggression, (4) alcohol and drug abuse, and (5) extreme verbal abuse. The transformed data appears in Figures 1-5. However, each of the 22 different areas are presented for each subject in Appendixes A-D in the original VSTCP format; the results for each subject are also presented separately in the following section.
Figure 2. Days Per Week With Appropriate Peer Interactions 85% of the Time or Greater
Figure 3. Number of Days Per Week Physical Aggression Occurred.
Analysis of the General Trends in the Data

In a multiple baseline design, the effects of an intervention are demonstrated by introducing the intervention to different baselines at different times. If each baseline changes when and only when the intervention is introduced, the effects can be attributed to the intervention rather than extraneous events. In each of the following five areas, the effects of wraparound services are clearly demonstrated using a multiple baseline design across subjects. Dashed lines on the graphs indicate points at which the paraprofessional aide's hours were reduced by at least 20 per week.

Compliance

Figure 1 depicts the effects of each of the individual wraparound service plans on compliance as measured by the VSTCP. The DAIC asks the rater if the youth's response to requests and general activity were acceptable 85% of the time over the course of a day. The item is scored yes if both of the following occurred 85% of the time: (1) the youth did what he or she was asked and (2) the youth spent his or her time in ways in which the rater considered acceptable.

It can be seen from Figure 1 that each subject was considered extremely noncompliant during baseline conditions. Compliance improved dramatically for all subjects at the exact point in time that each service plan was initiated. These results are maintained throughout the study. This effect is attributed to the robust nature of the consequences in effect for each subject as part of their behavior plans couched within each separate wraparound plan. Each behavior plan heavily targeted compliance. The specific effects obtained clearly demonstrate the influence of the services on compliance across all four subjects.
**Peer Interactions**

Figure 2 depicts the effects of each of the individual wraparound service plans on peer interactions as measured by the VSTCP. The DAIC asks the rater if the youth had good peer/sibling relations 85% of the time during the course of the day. It further specifies that the youth must have gotten along well with his or her brothers and sisters and any other children for 85% of the time that they were together and that scoring should be based on the youth's behavior that was directly observed by the rater or based on reports from a reliable source. It can be seen from Figure 2 that each subject displayed problematic behavior with respect to peers during baseline conditions. At the onset of each wraparound service plan, peer interactions greatly improved for each subject. These improvements persisted throughout the study. Like compliance, peer interactions were also targeted within each plan.

**Physical Aggression**

Figure 3 depicts the effects of each of the individual wraparound service plans on physical aggression as measured by the VSTCP. The DAIC asks the rater if the youth hit, struck, bit, pushed, shoved, or scratched a person with intent to harm them. In order to score the item yes, physical contact with the other person must have been made in some way, either directly or with an object (even if thrown). Intent to harm was also included. Intent was defined as trying to harm another person on purpose. Physical aggression was not scored if the youth was only trying to provoke or annoy the person or if the youth hit the person by accident. The item was scored despite the fact that the youth may have apologized or regretted what happened. The item was scored even if the rater believed the youth had a right to aggress (in self defense) but was not scored if aggression occurred when children were playing or kidding and neither person was upset or angry. If the act was not directly observed, the rater
should have been 85% sure that it happened. Subjects 1-3 had high rates of physical aggression during baseline conditions; Subject 4 did not. When wraparound services were introduced for Subjects 1 and 2, physical aggression was virtually eliminated. When wraparound services were introduced for Subject 3, there was a substantial effect but aggression was not eliminated. Subject 4 did not engage in physical aggression throughout the course of the study.

**Alcohol/Drug Use**

Figure 4 depicts the effects of each of the individual wraparound service plans on alcohol and drug use as measured by the VSTCP. The DAIC asks the rater if the youth used drugs or alcohol without permission. The item is scored yes if rater was 85% sure that the child used alcohol or drugs, even if the use was not directly observed. If, within each family, it was acceptable for a youth to use aspirin or over the counter medications without asking, that type of use was not scored. If medication was taken as prescribed, that also was not scored. Use of tobacco products was not scored. Abuse of any drug was scored (e.g. if a child had permission to take cough syrup but took the entire bottle rather than the stated dose). Selling drugs was considered different from abusing drugs and not scored here. Subjects 1-3 had high rates of drug/alcohol use during baseline conditions; Subject 4 did not. When wraparound services were introduced for Subjects 1-3, drug and alcohol and drug use was eliminated. Random drug tests were taken for Subjects 1-3 throughout the course of the study as part of their service plans. Court levied consequences were in effect for positive drug screens.

**Extreme Verbal Abuse**

Figure 5 depicts the effects of each of the individual wraparound service plans
on extreme verbal abuse as measured by the VSTCP. The DAIC asks the rater if the youth spoke to another person in an extremely malicious, abusive, or intimidating manner. The item was scored only if the behavior seemed extreme; casual remarks or "put downs", insults, or name calling were generally not scored. The youth must have spoken to another person and that person must have been aware that he or she was spoken to. Extremely abusive comments directed at objects or no one in particular were not scored. Subjects 1-3 had high rates of extreme verbal abuse during baseline conditions; Subject 4 did not. When wraparound services were introduced for Subjects 1-3, extreme verbal abuse was nearly eliminated in Subjects 1 and 2 and substantially reduced for Subject 3.

Results Relating to Specific Subjects

Subjects 1 and 2

The effects of wraparound services on Subjects 1 and 2 are clear judging by visual inspection of Figures 1-5. All 22 areas of the VSTCP are presented for Subject 1 and 2 in Appendixes A and B, respectively. As can be seen from Appendixes A and B, the additional areas of self injury and school attendance were improved in both boys with the onset of wraparound services.

Subject 3

The effects of Subject 3's wraparound services on the areas measured in Figures 1-5 are clear. However, Subject 3 showed more variability than Subjects 1 and 2. Compliance and peer interactions did not improve to the same extent that it did with the other subjects. Subject 3 remained somewhat more aggressive physically and verbally.
Appendix C shows that school attendance improved substantially when wraparround services were in place. Property damage and theft are low rate but important areas and they both showed improvement with the onset of wraparound. Subject 3's sexual acting out was significantly altered. Prior to his service plan he had essentially been living between his girlfriend's and male suitor's homes. This high rate of sexual behavior was known to his mother, the parents of the girl, and the family of the male suitor; the high rate of sexual contact was allowed to occur by those adults. Appendix C also shows that police contact averaged about 1 per week during baseline; during wraparound the police did not contact the family.

**Subject 4**

Subjects 1-3 had similar problems at the onset of services; the nature of Subject 4's repertoire was somewhat different. He was similar to the other subjects in that he was very noncompliant and had very poor peer interactions during baseline. As can be seen from Figure 1 and 2, he was also similar in that when wraparound services were implemented, he showed immediate and distinct improvements in those areas. In contrast to the first three subjects he was not physically aggressive, did not use drugs or alcohol, and was not extremely verbally abusive. Because his behavior was not problematic in those areas, they did not change. It can be seen in Appendix D that Subject 4 did have problems with self-confidence, anxiety, and being sad. Those problem areas did improve immediately and significantly with the onset of his wraparound plan; the other subjects did not have problems in those areas.

**Interobserver Agreement**

With Subjects 1-3, paraprofessional aides were present in the homes for at least eight hours per day throughout the course of the study; these aides served as the
reliability observers. Subject 4 did not have an aide involved in his plan; interobserver agreement was not obtained with Subject 4. With Subject 3, there was a high turnover of paraprofessional staff early in the study; interobserver agreement did not occur until week 36 with Subject 3. The aides were trained to score the VSTCP and were required to do so approximately 1 week per month.

Interval agreement (Page & Iwatta, 1986) was calculated using the following formula: agreements/(agreements + disagreements) \times 100. In order for interobserver agreement to be sampled, the aide must have been present for at least 8 consecutive hours on the day of the sampling. The specific eight hour shifts were during the highly active waking hours in which most of the daily activity occurred. Although it was not a perfect arrangement, it was the best option available in this naturalistic field study. The paraprofessional aides used for this purpose worked 5 days per week; the agreement statistics reported were all based on samples obtained 5 days per week versus 7. The DAIC protocols from the parents and the observers were compared on a point by point basis. Responses on the DAIC were scored either yes or no. If a discrepancy occurred between observers on any given day, a disagreement was scored.

It can be seen from Table 2 that interobserver agreement ranged from 60-100%.

Functional Impairment

Figure 6 depicts the levels of functional impairment measured by the CAFAS across the course of the study. It can be seen from Figure 6 that a "prebaseline quarter" was included. The time period for this quarter consisted of the three months prior to the onset of DAIC measurement. This time period was included to further document both the seriousness and the long standing nature of the problems evidenced by the subjects. During this prebaseline quarter, the Total CAFAS Score for all subjects was 110. That score is well into the extreme range of impairment.
Table 2

Interobserver Agreement

<table>
<thead>
<tr>
<th>Subject 1</th>
<th>Compliance</th>
<th>Peer Interaction</th>
<th>Aggression</th>
<th>Drug/Alcohol</th>
<th>Verbal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 15</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 18</td>
<td>80%</td>
<td>100%</td>
<td>80%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 23</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 26</td>
<td>80%</td>
<td>80%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 29</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 32</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 35</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 42</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 43</td>
<td>80%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>80%</td>
</tr>
<tr>
<td>Week 48</td>
<td>80%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 52</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subject 2</th>
<th>Compliance</th>
<th>Peer Interaction</th>
<th>Aggression</th>
<th>Drug/Alcohol</th>
<th>Verbal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 15</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 18</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 23</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 26</td>
<td>80%</td>
<td>80%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 29</td>
<td>80%</td>
<td>80%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 32</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 35</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 42</td>
<td>80%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>80%</td>
</tr>
<tr>
<td>Week 43</td>
<td>80%</td>
<td>80%</td>
<td>100%</td>
<td>100%</td>
<td>80%</td>
</tr>
<tr>
<td>Week 48</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 52</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subject 3</th>
<th>Compliance</th>
<th>Peer Interaction</th>
<th>Aggression</th>
<th>Drug/Alcohol</th>
<th>Verbal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 36</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 40</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Week 47</td>
<td>80%</td>
<td>100%</td>
<td>60%</td>
<td>100%</td>
<td>60%</td>
</tr>
<tr>
<td>Week 50</td>
<td>80%</td>
<td>60%</td>
<td>100%</td>
<td>100%</td>
<td>60%</td>
</tr>
<tr>
<td>Week 53</td>
<td>80%</td>
<td>80%</td>
<td>80%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>
Figure 6.

Total CAFAS Scores Across Subjects.
During the first quarter, CAFAS scores remained the same for Subjects 1-3. Subject 4 was placed in juvenile detention during that quarter. His scores were lowered as a result of being in a restrictive setting. This was essentially a baseline quarter. Services did not begin until the following quarter.

During the second quarter, CAFAS scores were substantially reduced for Subjects 1-3. The onset of services occurred for these subjects during the start of this period. Subject 4's scores also continued to improve; he was still placed in juvenile detention during this quarter. Looking at the 18 month period overall it can be seen the wraparound process resulted in substantial reductions in CAFAS scores and the reductions were maintained throughout the period.

During the third quarter, scores remained low. Subject 1's scores continued to decrease. Subject 1 and Subject 4 had scores of 30 during this quarter which placed them in the moderate range of impairment. Subject 3's CAFAS remained the same while Subject 2's went up 10 points.

During the fourth quarter services had been thinned considerably for Subjects 1 and 2. Their CAFAS scores increased but not to pre wraparound levels. The increase was especially apparent in Subject 1 who increased 50 points. Subject 3's scores went down 10 points while Subject 4's scores went up 10 points.

During the follow-up quarter, Subject 1's scores came down considerably again. Subject 2's scores increased another 10 points. Subject 3 and 4 remained the same. Looking at the 18 month period overall, it can be seen that the wraparound process resulted in substantial reductions in CAFAS scores and the reductions were maintained throughout the period.

Integrity of the Independent Variable

The consultant group that reviewed each case and wraparound plan were asked
the following five questions: (1) Is this a representative example of a wraparound case? (2) Is this a representative example of a child and family team? (3) Was the process used to develop the service plan representative of the wraparound model? (4) Was this a representative wraparound plan? and (5) Were the expenditures for services in this case representative of this type of service plan?

The consultants answered yes to all the questions across all four subjects.

Cost Analysis

Table 3 presents a detailed account of the financial expenditures involved with all four wraparound plans and compares them to predicted placement costs.

Detailed financial records were kept by the fiduciary agency for each subject's individualized service plans. All payments for individualized services came from the fiduciary agency.

In terms of agency workers on each case, hourly rates and number of hours worked on each case were totaled monthly. The rate per hour was determined by calculating the specific salary and benefit package for each agency worker into a simple hourly rate. Each month the number of hours each worker spent on each specific case was obtained; these totals were summed across agency workers.

The total wraparound cost per month was a sum of the individualized services that were provided and the agency worker cost.

The Community Team member whose agency would have been responsible for placement costs specified where the youth would have been placed had wraparound services not been in place. The various institutions were contacted and daily rates were gathered. It was projected that Subjects 1-3 would have been placed at a residential treatment center with a daily rate of $155.00. It was further projected that Subject 3
would have spent approximately 3 months in a public psychiatric hospital at a rate of $376.00 prior to being moved into residential treatment. Subject 4 would have been placed out-of-state at a residential treatment facility that specialized in treating sexual offenders at a rate of $230.00 per day. The projected placement costs for each subject were started at the same day as actual wraparound services were initiated.
<table>
<thead>
<tr>
<th></th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individualized Service Cost</td>
<td>$2,522.00</td>
<td>$4,459.00</td>
<td>$4,051.00</td>
<td>$3,852.67</td>
<td>$5,451.88</td>
</tr>
<tr>
<td>Agency Personnel Cost</td>
<td>$1,317.76</td>
<td>$1,139.79</td>
<td>$1,098.72</td>
<td>$1,043.96</td>
<td>$1,126.10</td>
</tr>
<tr>
<td>Total Wraparound Cost</td>
<td>$3,839.76</td>
<td>$5,598.79</td>
<td>$5,149.72</td>
<td>$4,896.63</td>
<td>$6,577.98</td>
</tr>
<tr>
<td>Predicted Placement Cost—subject 1</td>
<td>$4,805.00</td>
<td>$4,650.00</td>
<td>$4,805.00</td>
<td>$4,650.00</td>
<td>$4,805.00</td>
</tr>
<tr>
<td>Predicted Placement Cost—subject 2</td>
<td>$4,805.00</td>
<td>$4,650.00</td>
<td>$4,805.00</td>
<td>$4,650.00</td>
<td>$4,805.00</td>
</tr>
<tr>
<td>Total Placement Cost</td>
<td>$9,610.00</td>
<td>$9,300.00</td>
<td>$9,610.00</td>
<td>$9,300.00</td>
<td>$9,610.00</td>
</tr>
</tbody>
</table>

Cost Totals—During Wraparound

<table>
<thead>
<tr>
<th></th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individualized Service Cost</td>
<td>$44,620.33</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agency Personnel Cost</td>
<td>$11,110.41</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Wraparound Cost</td>
<td>$55,730.74</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predicted Placement Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Wraparound Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cost Savings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$39,129.26</td>
</tr>
</tbody>
</table>

Table 3
Cost Comparisons Between Wraparound Services and Projected Placement Costs

Subjects 1 and 2

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Table 3

Between Wraparound Services and Projected Placement Costs

Subjects 1 and 2

<table>
<thead>
<tr>
<th>May</th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td>$4,051.00</td>
<td>$3,852.67</td>
<td>$5,451.88</td>
<td>$6,681.75</td>
<td>$7,369.03</td>
<td>$3,729.00</td>
<td>$4,074.00</td>
<td>$2,430.00</td>
</tr>
<tr>
<td>$1,098.72</td>
<td>$1,043.96</td>
<td>$1,126.10</td>
<td>$1,071.34</td>
<td>$1,043.96</td>
<td>$1,071.34</td>
<td>$1,043.96</td>
<td>$1,153.48</td>
</tr>
<tr>
<td>$5,149.72</td>
<td>$4,896.63</td>
<td>$6,577.98</td>
<td>$7,753.09</td>
<td>$8,412.99</td>
<td>$4,800.34</td>
<td>$5,117.96</td>
<td>$3,583.48</td>
</tr>
</tbody>
</table>

$4,805.00 | $4,650.00 | $4,805.00 | $4,805.00 | $4,650.00 | $4,805.00 | $4,650.00 | $4,805.00 |
$4,805.00 | $4,650.00 | $4,805.00 | $4,805.00 | $4,650.00 | $4,805.00 | $4,650.00 | $4,805.00 |
$9,610.00 | $9,300.00 | $9,610.00 | $9,300.00 | $9,610.00 | $9,300.00 | $9,610.00 | $9,610.00 |

Projected Placement Cost | $94,860.00
Total Wraparound Cost | $55,730.74
Total Cost Savings | $39,129.26

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Table 3 Continued

Subject 3

<table>
<thead>
<tr>
<th></th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individualized Service Cost</td>
<td>$350.00</td>
<td>$4,071.00</td>
<td>$6,929.39</td>
<td>$5,400.00</td>
<td>$7,899.75</td>
<td>$8,759.56</td>
</tr>
<tr>
<td>Agency Personnel Cost</td>
<td>$296.38</td>
<td>$1,177.79</td>
<td>$1,209.02</td>
<td>$1,167.96</td>
<td>$1,293.32</td>
<td>$1,313.41</td>
</tr>
<tr>
<td>Total Wraparound Cost</td>
<td>$646.38</td>
<td>$5,248.79</td>
<td>$8,138.41</td>
<td>$6,567.96</td>
<td>$9,193.07</td>
<td>$10,172.97</td>
</tr>
<tr>
<td>Total Placement Cost</td>
<td>$2,632.00</td>
<td>$11,280.00</td>
<td>$11,280.00</td>
<td>$4,650.00</td>
<td>$4,805.00</td>
<td>$4,805.00</td>
</tr>
</tbody>
</table>

Cost Totals—During Wraparound

<table>
<thead>
<tr>
<th></th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individualized Service Cost</td>
<td>$38,667.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agency Personnel Cost</td>
<td>$10,520.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Wraparound Cost</td>
<td>$49,187.28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subject 4

<table>
<thead>
<tr>
<th></th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individualized Service Cost</td>
<td>$1,605.50</td>
<td>$2,025.00</td>
<td>$2,365.00</td>
<td>$2,325.00</td>
<td>$2,325.00</td>
<td>$2,325.00</td>
</tr>
<tr>
<td>Agency Personnel Cost</td>
<td>$546.27</td>
<td>$546.27</td>
<td>$423.06</td>
<td>$477.82</td>
<td>$477.82</td>
<td>$477.82</td>
</tr>
<tr>
<td>Total Wraparound Cost</td>
<td>$2,151.77</td>
<td>$2,571.27</td>
<td>$2,788.06</td>
<td>$2,802.82</td>
<td>$2,802.82</td>
<td>$2,802.82</td>
</tr>
<tr>
<td>Total Placement Cost</td>
<td>$6,900.00</td>
<td>$7,130.00</td>
<td>$6,900.00</td>
<td>$7,130.00</td>
<td>$7,130.00</td>
<td>$7,130.00</td>
</tr>
</tbody>
</table>

Cost Totals—During Wraparound

<table>
<thead>
<tr>
<th></th>
<th>March</th>
<th>April</th>
<th>May</th>
<th>June</th>
<th>July</th>
<th>Aug</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individualized Service Cost</td>
<td>$17,855.90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agency Personnel Cost</td>
<td>$4,300.38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Wraparound Cost</td>
<td>$22,156.28</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cost Savings

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted Placement Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Wraparound Cost</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Cost Savings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
### Subject 3

<table>
<thead>
<tr>
<th></th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td>929.39</td>
<td>$5,400.00</td>
<td>$7,899.75</td>
<td>$5,968.33</td>
<td>$2,197.06</td>
<td>$3,634.00</td>
<td>$1,257.50</td>
<td>$960.00</td>
</tr>
<tr>
<td>209.02</td>
<td>$1,167.96</td>
<td>$1,293.32</td>
<td>$1,061.21</td>
<td>$1,134.73</td>
<td>$1,057.42</td>
<td>$1,087.74</td>
<td>$1,034.68</td>
</tr>
<tr>
<td>138.41</td>
<td>$6,567.96</td>
<td>$9,193.07</td>
<td>$7,029.54</td>
<td>$3,331.79</td>
<td>$4,691.42</td>
<td>$2,345.24</td>
<td>$1,994.68</td>
</tr>
<tr>
<td>280.00</td>
<td>$4,650.00</td>
<td>$4,805.00</td>
<td>$4,805.00</td>
<td>$4,650.00</td>
<td>$4,805.00</td>
<td>$4,650.00</td>
<td>$4,805.00</td>
</tr>
</tbody>
</table>

- **Indicated Placement Cost**: $58,362.00
- **Wraparound Cost**: $49,187.28
- **Cost Savings**: $9,174.72

### Subject 4

<table>
<thead>
<tr>
<th></th>
<th>June</th>
<th>July</th>
<th>August</th>
<th>September</th>
<th>October</th>
<th>November</th>
<th>December</th>
</tr>
</thead>
<tbody>
<tr>
<td>025.00</td>
<td>$2,365.00</td>
<td>$2,325.00</td>
<td>$2,635.40</td>
<td>$2,250.00</td>
<td>$1,500.00</td>
<td>$1,600.00</td>
<td>$1,550.00</td>
</tr>
<tr>
<td>546.27</td>
<td>$423.06</td>
<td>$477.82</td>
<td>$450.44</td>
<td>$450.44</td>
<td>$450.44</td>
<td>$505.20</td>
<td>$450.44</td>
</tr>
<tr>
<td>571.27</td>
<td>$2,788.06</td>
<td>$2,802.82</td>
<td>$3,085.84</td>
<td>$2,700.44</td>
<td>$1,950.44</td>
<td>$2,105.20</td>
<td>$2,000.44</td>
</tr>
<tr>
<td>130.00</td>
<td>$6,900.00</td>
<td>$7,130.00</td>
<td>$7,130.00</td>
<td>$6,900.00</td>
<td>$7,130.00</td>
<td>$6,900.00</td>
<td>$7,130.00</td>
</tr>
</tbody>
</table>

- **Indicated Placement Cost**: $63,250.00
- **Wraparound Cost**: $22,156.28
- **Cost Savings**: $41,093.72

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
DISCUSSION

As can be seen from Figures 1-6, clear and convincing changes were immediately obtained and consistently maintained contingent upon the implementation of wraparound services across all subjects. There are several reasons why the changes were so distinct.

The Strength and Integrity of the Independent Variable

Rosenblatt (1996) emphasizes that both the strength and the integrity of the wraparound services must be insured in any evaluation of the process. All of the elements of the wraparound process described by VanDenBerg and Grelish (1996) were present in this system. First, the services and supports that became part of the plans were highly individualized to meet the needs of the families as opposed to reflecting the priorities of the existing service systems in the county. Second, although the community was not culturally diverse, the particular social and philosophical values of the families were observed and respected.

Third, parents were treated as partners and included in every level of development and delivery of the wraparound process. As with most partnerships, there were numerous disagreements. Various coalitions between team members often emerged within the decision making processes and then changed or disappeared altogether. Sometimes coalitions formed between family members and professionals in opposition to another family member. When disagreements arose, agencies did not always have total control nor did parents. Care was taken to keep the process democratic.

Fourth, the wraparound efforts were clearly based in the community. Subjects
1-3 were at extreme risk of placement. Their safety and the safety of the community was a major concern. There was a great deal of pressure from key stakeholders (the courts, schools, community members) to immediately impact problem behavior. Subject 4 was placed in a juvenile detention unit awaiting placement in a specialized residential facility for sexual offenders just prior to receiving wraparound services. He was also at imminent risk of long term placement and the wraparound was a "last ditch effort." There was great pressure on his child and family team to succeed. For kids who are at imminent risk of placement, there is a crucial time period where they are vulnerable and immediate changes must occur or they will be removed from the community.

Fifth, the wraparound teams had access to immediate flexible funds if needed. If an expenditure was crucial and could not wait for approval from the Community Team, the CMH supervisor could approve up to $1,000 per case if needed. An agency charge card was used for urgent or emergent situations. Over the course of the study, less than $300.00 was used in this manner.

Sixth, the plans were implemented on an interagency basis. Many child and family team meetings were necessary to develop the plans. Initially teams met weekly through planning and initial implementation. When plans were running smoothly teams met biweekly. The Community Team also met biweekly at the start of the process and then monthly when the initiative was up and running. Although four families took part in the study, there were twelve families total that received wraparound services during this time period. Smooth interagency transactions were necessary especially between mental health and the juvenile court. The court took great care in writing probation orders that would accommodate the needs of the wraparound teams. Court imposed consequences were very rare but when they were needed, they were delivered quickly in part due to the "community kid" status of those youngsters involved in wraparound.
These effects would not have occurred without both a strong juvenile court and mental health presence.

Seventh, the services were unconditional. There was never even discussion of rejecting a child or family from the initiative.

The Role of Behavior Analysis

Behavior analysis played a critical role in the success of all of these cases. The specific behavior plans employed robust contingencies. The plans were simple to implement but employed more powerful consequences than parents normally would have on hand. If parental consequences failed, were refused by the youngsters, or if probation violations occurred, immediate detainments at "holdover sites" or juvenile detention units were possible. Daily monetary earnings based on behavior functioned as powerful forms of reinforcement.

The human service culture within this particular community was quite behavioral. The community was approximately forty miles away from Western Michigan University which has a strong Applied Behavior Analysis program. Many key individuals in the county were trained by the university. The behavior analyst responsible for these cases had a 15-year history of working with this population (in residential and community settings) and knew the importance of working in close conjunction with both families and other systems. This particular behavior analyst was very skilled at developing rapport with both youngsters and parents. The aides were trained and supervised by the behavior analyst and had extensive experience working in the human service field. Strong social skills, patience, dedication, and flexibility are crucial variables that must be present in individuals filling those types of positions. This initiative was very fortunate to find the right individuals for the job. Many were rejected.
The Nature of the Subjects

Most subjects exhibited either very high or low rates on several dependent measures during baseline conditions. They were appropriate candidates for wraparound services who were truly at risk of placement at the onset of the study. Although not all youngsters who receive wraparound services present the same constellation of high or low rate behaviors as this particular group, many do. According to several demographic studies reviewed earlier in this document, approximately two thirds of SED children meet criteria for conduct disorder and perhaps an additional disorder as well. Such was the case with this particular subject pool.

When youngsters similar to these reach the point of being at risk of placement, the areas of compliance, peer interactions, physical aggression, alcohol/drug use, and extreme verbal abuse are typically high. A clinical trials approach was used in subject selection. If the mix of the subjects presented with a varied patterns of problem behaviors, the results may not have been as distinct. There was a certain amount of "luck of the draw" involved in getting fairly homogenous subjects.

Comparisons of This Study to the Current Wraparound Literature

Comparing the current study to the existing literature is difficult. As with this study, many others report positive adjustments across their SED subjects (Clarke et al. 1992; Bruns et al. 1995; Yoe et al. 1996; Clarke et al. 1996). The research designs employed in the previous studies did not allow for the same level of analysis as the single subject design used in this study. The subject matter of the wraparound "process" concerns the nature of change over time and it cannot be fully understood and appreciated unless it is tracked continuously over time. The individual responses to
treatment in the existing literature are obscured by the grouping of data necessary for the inferential statistics employed within the studies. The particulars of the wraparound plans and subjects used in the studies, the integrity of the wraparound process and its implementation, and the nature in which dependent measures changed over time are not available from the existing literature. Little is known about the specifics of the plans used as independent variables within the current literature. The studies seem to follow the general wraparound tactics but the extent to which plans differed from each other even within each study is not clear. It is obvious from these data that the effects of the wraparound plans happened quickly and that they were dramatic. It was also clear at what level they were maintained over time.

Behavior change is a continuous process; it occurs through time as a function of its determining variables and it should be measured on a continuous basis (Johnston and Pennypacker, 1980). The continuous measurement of the dependent measure that was featured in this study promoted the understanding of the wraparound process with much more clarity and detail than the between-subject studies that currently exist. As the dependent measures were tracked through time, a picture of the wraparound process for each family was captured. It was obvious that the strength of the interventions derived from the wraparound process were great in each case. There were dramatic effects that occurred immediately and persisted throughout the course of the study, even as the services were thinned. Individual responses to treatment were clear. It was also clear that although substantial changes occurred, the subjects still exhibited moderate and severe levels of impairment at the end of the study.

Limitations of the Current Study

Kazdin (1982) states that when objective assessment is employed, continuous data are gathered, stable data before and after treatment are obtained, marked effects are
evident, and several subjects are used, it is difficult to explain the results by referring to the usual threats to internal validity. The main limitations of this study concerned the objectivity of the dependent measure. The primary measurement instrument, the DAIC, was essentially a daily rating or verbal report made by parents concerning the behavior of their youngsters. It had some inherent problems. In that verbal behavior is multiply controlled (Skinner, 1957; Michael, 1993), it was not entirely clear that the behavior of the youngsters controlled the parent's ratings. It is possible that parents reported improvements for other reasons than changes in the youngster's behavior.

Because the data were based on ratings versus direct observations of behavior, subjectivity entered into the results at some level. The "85% of the time or greater" criteria used in some of the measures allows room for personal judgment. Because the DAIC grouped an entire 24 hours of behavior into one rating, information was necessarily lost. However, this was a naturalistic field study. Precise measurement tactics would not have been tolerated by the families. This measure was simple and parents cooperated with it. Interrater agreement was not precise but it did indicate a certain amount of reliability in the data. The two observers may not have based their ratings on the same instances of behavior but the overall agreement on what happened enhances the believability of the results.

On the whole this study demonstrated that the wraparound process, when implemented with integrity and strength, can result in substantial changes that persist over time. Clearly, more rigorous single subject replication studies are needed with this population before conclusive statements can be made with any degree of confidence. This study represents an initial attempt at using a multiple baseline design to evaluate the wraparound process. The "one-kid-at-a-time" wraparound process appears to be well suited to this particular single-case design.
Appendix A

Daily Adjustment Indicators for Subject 1

122
Daily Adjustment Indicators

**RUNAWAY**

**ALCOHOL/DRUG USE**

**SEXUAL ACTING OUT**

**EXTREME VERBAL ABUSE**

Copyright 1992

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Appendix B

Daily Adjustment Indicators for Subject 2
Appendix C

Daily Adjustment Indicators for Subject 3
Daily Adjustment Indicators

SEXUAL ABUSE/ASSAULT

SUICIDE ATTEMPT

FIRESETTING

CRUELTY TO ANIMALS

Copyright (R)
Appendix D

Daily Adjustment Indicators for Subject 4
Appendix E

Human Subjects Institutional Review Board Approval
To: Mvaard, Michael J.
From: Richard Wright, Interim Chair
Re: HSIRB Project Number 94-11-38

This letter will serve as confirmation that your research project entitled "The effects of wraparound services on the adjustment of behaviorally maladjusted youth" has been approved under the full category of review by the Human Subjects Institutional Review Board. The conditions and duration of this approval are specified in the Policies of Western Michigan University. You may now begin to implement the research as described in the application.

Please note that you must seek specific approval for any changes in this design. You must also seek reapproval if the project extends beyond the termination date. In addition, if there are any unanticipated adverse or unanticipated events associated with the conduct of this research, you should immediately suspend the project and contact the Chair of the HSIRB for consultation.

The Board wishes you success in the pursuit of your research goals.

Approval Termination: Feb. 23, 1996

xc: Alessi, PSY
Appendix F

Permission to Use Copyrighted Material

152
BIBLIOGRAPHY


Brown, E.C., & Greenbaum, P.E. (1995). Reinstitutionization after discharge from residential mental health facilities: Competing-risks survival analyses. In C. Liberton, K Kutash, and R Friedman (Eds.), The 7th annual research conference proceedings, a system of care for children's mental health: Expanding the research base (pp. 272-276). Tampa, FL: Florida University of South Florida Mental Health Institute, Research and Training Center for Children's Mental Health.


Expanding the research base. (pp.75-77). Tampa, FL: University of South Florida Mental Health Institute, Research and Training Center for Children's Mental Health.


Burchard, J. D. & Clarke, J. D. (1990). The role of individualized care in a service delivery system for children and adolescents with severely maladjusted behavior. The Journal of Mental Health Administration, 17, 48-60.


Coie, J.D., & Dodge, K. (1988). Multiple sources of data on social behavior and


Family Studies, 1, 129-140.


Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Kutash, K & Ducnowski, A.J. (1996). Strategic target number seven of the national agenda for achieving better results for children and youth with serious emotional disturbances: Creating comprehensive and collaborative systems. Tampa, FL Research and training Center for Children's Mental Health Institute, University of South Florida.


Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.
Child and Adolescent Psychiatry. 29, 847-853.


Silver, S.E., Duchnowski, A.J., Kutash, K., Friedman, R.M., Eisen, M., Prange,


Mental Health Institute, Research and Center for Children's Mental Health.


Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.


