



# Mental Health Wraparound Demonstration Evaluation Report to the United States Congress

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## EXECUTIVE SUMMARY

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With the 1996 Authorization Act, Congress mandated that the U.S. Department of Defense (DoD) implement a program to provide “wraparound” mental health services for children eligible for military healthcare benefits who have serious emotional disturbances considered amenable to treatment. Based on the concept of a community program that delivers individual-needs-driven planning and services to support inclusive options, it was expected that the Wraparound Demonstration would, among other goals, improve patient outcomes, reduce mental health expenditures, and improve treatment compliance.

In response to the mandate, the DoD began implementing the Mental Health Wraparound Demonstration project on March 1, 1998. The first beneficiary was enrolled in April 1998.

Congress also charged the Secretary of Defense with providing an assessment of the effectiveness of the program and formulating recommendations on whether it should be implemented throughout the military health system (MHS). In response, the DoD launched an evaluation of the Demonstration project in June 1999. This evaluation assesses the goals, objectives, and strategies of the Demonstration, including implementation and program outcomes. Data from 111 children comprised the study. The evaluation included three components: client outcomes analysis, cost analysis, and utilization analysis. Implementation analysis and quality of service assessments were not components of the Wraparound evaluation.

### *Evaluation Findings*

The Evaluation findings, conclusions, and recommendations are based on analyses of data from two sources. Service utilization (e.g., case management, therapy, hospitalization) data and cost data came from DoD-provided files. Evaluation project data were collected from seven clinical interviews per family conducted with parents and children in both the Wraparound Demonstration and the Treatment as Usual (TAU) Comparison Group during a 6-month period. The major findings are the following:

- Demonstration participants had fewer days of residential treatment than did the children in the TAU Comparison Group. Days of hospitalization and the use of polypharmacy are two measures that did not differ between the two groups.
- The children in the Wraparound Group experienced more continuity of care and received more wraparound services—such as case management, in-home treatment, and other nontraditional services—than those in the TAU Comparison Group.
- Intermediate outcomes such as degree of “wrap” judged by parents and children, the helping behavior of the therapists, and therapeutic alliance did not differ between the Wraparound and TAU Comparison Groups. The only difference in intermediate outcomes between the two groups was that parents of children in the TAU Comparison Group reported fewer contacts with their therapists. There is no evidence that the content or the quality of the services were different for the Wraparound children.
- Mental health outcome data did not differ between the two groups. Both groups showed some improvement over time in some measures, but there were no significant differences in functioning, symptoms, life satisfaction, positive functioning, or sentinel events.

- The Demonstration was more expensive—\$12,912 on average per child, compared with \$7,469 per child in the TAU Comparison Group. The increased costs resulted from longer duration of treatment for the Wraparound Group. In addition, although some of the services those children received cost less per day than inpatient care, they received more of those services.
- The TAU Comparison Group was clearly more cost effective, since the clinical outcomes are indistinguishable for the two groups and, as mentioned above, the cost outcomes favor the TAU Comparison Group.

### *Conclusion*

The findings of the Wraparound Demonstration concur with the findings of two previous programs—the U.S. Army’s Fort Bragg Child and Adolescent Mental Health Demonstration and the Stark County, OH systems reforms (Bickman, 1999; Bickman et al., 1995, 1997, 1999, 2000). Taken together, these findings are convincing that reform is needed at the treatment or services level. All three studies showed that system reform could affect system-level outcomes such as cost (usually increasing), but that it did not influence individual or family outcomes such as increased functioning or reduced symptoms.

### *Recommendations*

Wraparound studies focus on service delivery procedures. We recommend that the focus of future studies be squarely on clinical outcomes with particular emphasis on the measurement of progress and results.

Current knowledge about mental health treatment for children and adolescents suggests that no standardized treatment has been studied sufficiently. Therefore, it is critical that mental health service systems have the ability to measure symptom severity, functioning, hopefulness, and therapeutic alliance concurrent with treatment. It is necessary to conduct repeated measurement of progress over time because outcome prediction cannot be conducted with baseline data alone (Lambert et al., 2001). In addition, the child’s progress during treatment must be measured. Without ongoing measurement, there will be no way to determine if any of the reforms or innovations—at the treatment or system level—make a difference to children and families.

## **PART 1: OVERVIEW**

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The U.S. Department of Defense (DoD) healthcare program has experienced tremendous change in executing the DoD's strategy for its healthcare mission into the next century [Appendix A, Military Health System (MHS) Strategic Plan]. The most sweeping transformation has been the design, development, and deployment of TRICARE, DoD's triple-option healthcare plan. Fully operational nationwide since midyear 1998. The goal of TRICARE is to standardize the healthcare benefit for all beneficiaries regardless of their geographic location, enhance the direct care system's ability to respond to military operations medical needs, and improve the quality, cost, portability, and accessibility of services to MHS beneficiaries.

Access to and cost of mental health services provided to DoD beneficiaries has been a longstanding concern of the DoD and the U.S. Congress. While recognizing that management efforts by the DoD made significant strides in the overall reduction of psychiatric costs and utilization, the 104<sup>th</sup> Congress continued to express concern about mental health services—especially inpatient services—provided to DoD beneficiaries younger than age 20.

To help illustrate the issues, in fiscal year (FY) 1996, inpatient mental health care for this beneficiary category accounted for more than half of all mental health inpatient days and overall costs for mental health services, while representing less than half of all admissions (OCHAMPUS Information Systems Report 20A). Congress believed that opportunities still existed for improvement in the mental health services provided to adolescents and children. Of particular interest to the Congress was the appropriateness of Residential Treatment Center (RTC) admissions and an emerging theory that better coordination of less restrictive, nonresidential outpatient services may be more appropriate (Senate Appropriations Committee, S1124 Conference Report).

In 1996, Congress mandated that the DoD develop, implement, and evaluate a demonstration project that utilized a "wraparound" service system for child and adolescent military dependents. "Wraparound" refers to "a community based program designed/developed on individual-needs-driven-planning and services to support normalized and inclusive options for child and adolescent mental health patients and their families" (TRICARE/CHAMPUS Operations Manual, Chapter 20, Section L). Malysaik (1998) defines wraparound as an approach that "engages families as decision makers in a strengths-based, ecological team approach emphasizing individualized service in the most appropriate setting; strengths are identified in the family, school, and community, and actively combined to address needs in these systems" (p.11). Wraparound employs the principles of unconditional care, flexible funding, child- and family-centered services, and interagency collaboration (Yoe, Santarcangelo, Atkins & Burchard, 1996). As described above, the treatment's focus is strength based rather than problem based (Clark, Lee, Prange & McDonald, 1996; Clark, Prange, Lee, Stewart, McDonald, & Boyd 1998). Specifically, the goal of the wraparound approach is to keep the child at home and in school and to provide the family with the resources and supports it needs to make this possible (Evans, Armstrong & Kuppinger, 1996).

### **1.1 Defining Wraparound**

Congress first addressed the concept of an alternative method for identifying and providing appropriate mental health services to children with severe emotional disturbances in 1984, when funds were appropriated for the Child and Adolescent Service System Program (CASSP). CASSP was initiated to assist States in developing an infrastructure for the provision of publicly funded, community-based services (Pumariega, A.J. & Vance, H.R., p. 371-378). All 50 States have received CASSP grants to

develop a “system of care” to coordinate services across multiple health and human service agencies, such as public health systems (Medicaid in particular), schools, law enforcement, public health, and social services. Although this initiative did not specifically address the needs of military dependents eligible for healthcare services under Section 1072(2) of Title 10 of the United States Code (U.S.C.), it advanced core principles that have become a standard for programs designed to meet the needs of children and adolescents with severe emotional disturbances.

The CASSP “system of care” provided the concept for mental health services that would be:

- *Child centered and family focused*—The needs of the child and family dictate the types and mix of services provided.
- *Community-based*—The locus of services and management and decision-making responsibility should rest at the community level.
- *Multi-system and culturally competent*—Agencies, programs, and services should be responsive to the cultural, racial, and ethnic differences of the populations they serve (Systems of Care Promising Practices in Children's Mental Health, 1998).

Building on this concept, Federal legislation in 1992 (Public Law 102-321) authorized the Comprehensive Community Mental Health Services for Children and Their Families Program (Children's Services Program), the largest Federal program for child mental health. The Children's Services Program also provides grants to improve and expand systems of care for an estimated 4.5 million to 6.3 million children and adolescents with serious emotional disturbances and their families (Annual Report to Congress, 1998). According to reports, 88 percent of States and territories use some form of the wraparound approach in providing services to children and adolescents with, or at risk of developing, severe emotional disorders (Systems of Care Promising Practices in Children's Mental Health, 1998).

Although best practices for implementing and administering wraparound programs are still evolving, a focus group of mental health experts meeting at Duke University in the spring of 1998 reached consensus on the definition of wraparound, program values, essential program elements, and practice requirements (Systems of Care Promising Practices in Children's Mental Health, 1998). If the DoD expands mental health benefits to include the wraparound concept, the work by this focus group, as well as State experiences with implementing systems of care, may prove invaluable in guiding DoD in the restructuring of the benefit.

The participants concluded that wraparound is a philosophy of care that includes a definable planning process involving the child and family, resulting in a unique set of community services and natural supports individualized for that child and family to achieve positive outcomes (Burns & Goldman, 1998, p.13). The services must be culturally competent and involve families at every level—a team including the family, child, natural supports, agencies, and community services should work together to develop, implement, and evaluate individualized service plans. The team should have flexible approaches and flexible funding, and the service plan should balance formal and informal community and family resources. Resource coordinators facilitate the team process and should conduct strengths/needs assessments and manage the implementation of the service plan. Finally, outcomes should be measured at the system, program, and individual client and family levels. The group presented these values as the ten essential elements of wraparound:

1. **Wraparound efforts must be based in the community.** Children deserve to grow up where their families are—not in distant places. An important part of the wraparound process is to map services and supports where a child lives and identify the “neighborhood” for that family.

2. **Services and supports must be individualized, built on strengths, and meet the needs of children and families across life domains to promote success, safety, and permanency in home, school, and community.** Each child and family is unique and must be treated as such throughout the wraparound process. Life domains must include all aspects of a child's life, such as living situation, safety concerns, legal issues, medical and health factors, education and vocation, cultural and spiritual issues, recreation, emotional and behavioral factors, alcohol and drug abuse concerns, and social and life skills.
3. **The process must be culturally competent.** Focusing on strengths and learning about the culture and the natural resources in the family, neighborhood, and community are an integral part of the wraparound process, consistent with the principles and practices of cultural competence.
4. **Families must be full and active partners in every level of the wraparound process.** Families are the most important resource for any child. Families should be viewed as capable and the experts regarding their children's lives. The process should support empowerment, self-reliance, voice, and choice. If a child is in State custody and the goal is family reunification, a continual effort should be made to involve the biological parents in all aspects of the planning process. If the plan does not include family reunification, then the process should center on a committed caregiver (such as a relative or adoptive parent) with the child, and provisions explored for child, sibling, and parent visitations. If a child is not in State custody, the biological parents should have access to all discussions related to the child's plans and should be able to voice their preferences and make legitimate choices.
5. **The wraparound approach must be a team-driven process involving the family, child, natural supports, agencies, and community services working together to develop, implement, and evaluate the individualized service plan.** For wraparound to be successful, members of the team must develop consensus and work together in partnership to support the family and child.
6. **Wraparound teams must have flexible approaches with adequate and flexible funding.** This allows teams to develop and implement individualized plans, which can include an array of services and/or supports both categorical/formal and noncategorical/natural, informal. The concept of flexibility in wraparound goes beyond funding and includes a flexible approach in setting, location, time, and service response.
7. **Wraparound plans must include a balance of formal services and informal community and family resources.** In working with families, efforts should be made to gradually replace formal services with informal, natural supports.
8. **The community agencies and teams must make an unconditional commitment to serve their children and families.** If the needs of the child and family change, or if a family member exhibits difficult behavior, the child and family will not be rejected from services or their community. Instead, the services and supports will be changed and redesigned to reflect the needs of the child and family.
9. **A service/support plan should be developed and implemented based on an interagency, community-neighborhood collaborative process.** For effective implementation of the plan, both design and implementation must involve the resources of the entire community. If children and families have needs that cross formal systems, those systems must be involved as well. There are different and evolving ways for achieving broad community "ownership." Experience has shown that community ownership can contribute greatly to the integration of practice, program, and system

levels—ensuring greater buy-in from the whole community, improved access to all necessary formal services, more availability of informal resources and supports, and greater likelihood of sustaining the wraparound process.

10. **Outcomes must be determined and measured for each goal established with the child and family as well as for those goals established at the program and system levels.** “Outcomes should be based on achieving success, safety, and permanence in home, and community settings” (Goldman, 1999).

## 1.2 The TRICARE Triple-Option Effect

Implementation of the TRICARE triple option has made significant changes in how mental health services are provided throughout the country. Under TRICARE, use of inpatient services is generally reduced, costs are down, and utilization trends have shifted. By FY 1998 (OCHAMPUS Information Systems Report 20A, figures adjusted to completion), the age distribution for use of mental health services had shifted and the under 20 age group accounted for 42 percent of the admissions and 48 percent of inpatient costs (**Figure 1**).

**Figure 1. Mental Health Services By Age Group**

<b>Patients</b>	<b>Admissions</b>	<b>Inpatient Days</b>	<b>Total Cost</b>
Aged 1–19	7,323	62,008	\$62,994,520.35
Aged 20–65+	10,015	66,266	\$68,250,589.96
<b>Total</b>	<b>17,338</b>	<b>128,274</b>	<b>\$131,245,110.31</b>
Percent under age 20	42%	48%	48%

## 1.3 Enabling Authority

Section 716 of the National Defense Authorization Act for FY 1996 required the Secretary of Defense to implement a Mental Health Wraparound Demonstration in TRICARE Regions 7 and 8 (subsequently merged to become the TRICARE Central Region). The enabling legislation defines “wraparound” as a continuum of traditional and nontraditional services provided principally to allow a child to remain in the family home or other least restrictive and least costly setting.

The Statute required the Demonstration to provide residential and wraparound services to children and adolescents considered dependents under Section 1072(2) of Title 10, U.S.C. who have a serious emotional disturbance “. . . generally regarded as amenable to treatment.”

It also required that the Secretary of Defense provide Congress with an assessment of the effectiveness of the program and the Secretary’s view regarding whether the program should be implemented throughout the MHS. Further articulation of the structure of the Demonstration program was left to the discretion of DoD.

## 1.4 Demonstration Design

The DoD Mental Health Wraparound Demonstration was designed to:

- Determine if there is a more effective, less costly way to provide mental health services to children and adolescents with, or at risk of, severe emotional disturbances.
- Provide the DoD with data needed to address the concerns of the Congress.

- Provide the DoD with information needed to determine if changes to the TRICARE mental health benefit or the mental health and case management policy might be appropriate.
- Contribute to the research literature regarding the efficacy of wraparound services.

#### 1.4.1 Demonstration Hypothesis

The Managed Care Support Contractor's Operations Manual, Chapter 23, Section 3 (Appendix B, recodified March 2001, previously titled TRICARE/CHAMPUS Operations Manual, Chapter 20, Section L) defined the scope and specific requirements for the Mental Health Wraparound Demonstration program based on the legislative intent and the following hypothesis:

Wraparound services provided to child and adolescent mental health patients builds support for the patient which enables shorter inpatient stays through comprehensive and continued management of care, while substantially reducing recidivism for the residential phase of treatment; thereby reducing costs of inpatient, psychiatric, and residential care.

The Demonstration hypothesis was to be “. . . demonstrated through a community-based program of care developed on individual-needs-driven-planning and services, to support normalized and inclusive options for child and adolescent mental health patients and their families.”

DoD intended the Demonstration to be a collaborative effort between the MHS direct care system, the TRICARE Managed Care Support Contractor (MCSC) for the Region, the Assistant Secretary of Defense for Health Affairs [ASD(HA)], the TRICARE Support Office, and community-based resources. The project was to operate for 36 months, from February 1, 1998, through January 31, 2001.

DoD initiated the Mental Health Wraparound Demonstration Project through a March 1, 1998, modification to the contract held by TriWest Healthcare Alliance of Phoenix, AZ. TriWest is the TRICARE MCSC for the Central Region. The Demonstration was administered by Merit Behavior Care Corporation (MBC), a subsidiary of Magellan Health Services of Columbia, MD. MBC was the TriWest subcontractor responsible for managing the mental health benefit for the entire TRICARE Central Region. A target enrollment of 150 participants was established based on a 3-year CHAMPUS history identifying the average number of children and adolescents in the Region requiring RTC or inpatient hospital care. The first beneficiary was enrolled in April 1998. At the end of the Wraparound Demonstration on January 31, 2001, children still participating were placed back into TRICARE core services.

#### 1.4.2 Mental Health Services

The Demonstration was designed to permit provision of "nontraditional" mental health services, including psychiatric in-home services, respite, therapeutic foster and group homes, and crisis stabilization in group homes. The Demonstration program administrators also could provide additional nontraditional services when approved by the ASD(HA). Other differences between the Demonstration and the established TRICARE program included:

- All beneficiaries receiving services under the Demonstration were considered “enrolled” in TRICARE Prime (the TRICARE managed care option) and the enrollment fees were waived, even if a participant's family was not previously enrolled.

- The TRICARE Point of Service benefit copayment and deductible structure applied to services provided under the Demonstration.
- “Anchor Facilities” provided all case management.
- The MCSC was required to have an exclusive mental health provider network to support the Demonstration.
- The contractor implementing the Demonstration shared the financial risk.

### 1.4.3 Participant Eligibility

Publicity and recruitment for the Demonstration project was the responsibility of the military and its subcontractors. If eligible families agreed to participate, MCSC staff contacted treatment facilities cooperating with the Demonstration to have clients placed on their rolls. Section 2.2.3 of this report describes the enrollment process.

#### *1.4.3.1 Eligibility Requirements*

To be considered for the Demonstration, potential participants had to meet specific eligibility requirements established by the DoD, as well as those proposed by the MCSC and accepted by the DoD.

#### **DoD Eligibility Requirements**

A potential participant:

- Is TRICARE eligible
- Is between the ages of 4 and 16 at time of entry into the program
- Has a serious emotional disturbance generally regarded as amenable to treatment
- Lives in and expects to remain in the Region for the duration of the demonstration
- Has a valid Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) diagnosis
- At the time of referral:
  - Requires at least residential or an inpatient level of care
  - Or, is preparing for discharge from a residential or inpatient facility and is at high risk for recidivism.

### **TriWest/MBC Eligibility Requirements**

- Written permission from parent or guardian for the child/adolescent to participate in the program, and parent or guardian's commitment to participate in the treatment.
- Verification of TRICARE enrollment and that the family agrees to have their child's enrollment changed to Prime for psychiatric care while in the program.
- Potential participant is between the ages of 4 and 16 at the time of entry into the program.
- Lives in and expects to remain in the Region for the duration of the demonstration.
- Has a valid DSM-IV diagnosis.
- At the time of referral, potential participant requires at least residential or an inpatient level of care or is preparing for discharge from residential or inpatient care.
- Potential participant does not require long-term custodial care in a residential treatment or nursing facility.
- Potential participant does not have a persistent history of illicit drug use despite appropriate treatment, or poor motivation for rehabilitation.
- If a potential participant has a persistent pattern of anti-social behaviors, they appear to be the result of a treatable mental disorder.
- A potential participant has no developmental or cognitive disorder that would prevent him/her from benefiting from treatment.

#### *1.4.3.2 Exclusions*

DoD excluded participation of children and adolescents with a valid Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) diagnosis not generally regarded as either serious and/or amenable to treatment. DoD also excluded children who required mental health services related to custodial care, or mental health services that are primarily educational.

The MCSC excluded participation of children and adolescents who had been convicted or adjudicated of an offense involving sexual perpetration or predatory behavior toward others.

#### 1.4.4 Expected Outcomes

DoD outlined the measurements of success and expected outcomes that would result from the provision of the services provided under the Demonstration. It was expected that wraparound services would:

Improve patient outcomes, as evidenced by:

- Decreased use of polypharmacy
- Decreased numbers of missed appointments

- Decreased numbers of against medical advice (AMA) discharges
- Decreased numbers of elopements from inpatient care or RTCs and decreased numbers of patient interactions with the criminal justice system as compared to the control group.

Result in a reduction in:

- Family mental health expenditures
- A patient's length of stay in psychiatric inpatient care and/or residential treatment by at least 15 percent
- The recidivism rate for the residential phase of treatment, as compared to the control group.

Result in a 50 percent higher treatment compliance rate for Demonstration participants over the control group in:

- Keeping therapy appointments
- Medication compliance
- School attendance.

#### 1.4.5 Responsibilities of the Managing Entity

The MCSC was responsible for establishing and maintaining quality clinical care and a full range of mental health services. According to DoD requirements, the MCSC established an oversight committee and an exclusive provider network.

##### *1.4.5.1 Clinical Management Committee*

DoD required the MCSC to establish a Clinical Management Committee (CMC) to oversee the quality of the clinical programs used in the Demonstration. The Committee was to serve in an advisory capacity to the Case Managers and resolve potential disputes arising between a Case Manager and a local provider over the necessity for a service. The CMC was specifically excluded from acting as a clinical assessment team (MCSC Operations Manual, Chapter 23, Section 3, 6.5.2). The prescribed composition of the Committee included:

- A Director who is a board certified child/adolescent psychiatrist with at least 5 years clinical experience and who is in active practice
- A doctoral-level clinical psychologist
- A master's-level psychiatric social worker
- A master's-level psychiatric nurse
- A clinical representative from the other respective Lead Agents.

#### *1.4.5.2 Exclusive Provider Network*

The MCSC also was responsible for establishing and maintaining an exclusive mental health network that could include existing participating providers, medical treatment facility (MTF) providers, and others as necessary. The contractor was required to certify all mental health providers in the Demonstration exclusive network except MTF providers, using the same certification and credentialing procedures required in the TRICARE triple-option program.

The contractor was required to ensure that providers of nontraditional services, or of traditional services not generally covered as benefits, met national and/or local licensing standards and credentialing requirements. All network providers were to be tied to the contractor by a provider agreement. The contractor also was required to develop and maintain a current list of all network providers.

#### *1.4.5.3 Anchor Facilities*

In developing the exclusive provider network, the MCSC was required to include at least two “comprehensive mental health treatment facilities” that offered a full range of mental health services including inpatient treatment, residential treatment, partial hospitalization, and outpatient treatment. Referred to as “Anchor Facilities,” these facilities were to have the capacity to provide all necessary services within 50 miles of a beneficiary’s residence and were to provide all followup services necessary (after discharge from inpatient or RTC care) to prevent recidivism. However, if inpatient services were not available within 50 miles, such services could be provided at a distance greater than 50 miles from the beneficiary’s residence if the parent or guardian agreed and the DoD granted approval.

An additional requirement was that the Anchor Facility evaluate and agree to accept the potential participant for case management.

#### *1.4.5.4 Case Management*

In addition to the Anchor Facilities’ roles in assessing a potential participant’s suitability for the Demonstration and providing Case Management, MBC’s program structure included Care Managers at the MBC Demonstration program office who:

- Received all referrals
- Developed the background information, including medical history and parental consent
- Prepared the Master Treatment Plan
- Presented each potential participant's case history to the CMC for admission review
- Presented approved cases to the Anchor Facility for consideration
- Provided direct interface with Anchor Facilities and Case Managers, receiving at least weekly updates on treatment progress
- Provided progress reports to the CMC.

Appendix C provides a matrix of the DoD requirements for the Demonstration, as well as the MCSC interpretation of requirements and proposal to accomplish those requirements accepted by the DoD.

## 1.5 Evaluation Overview

The MCSC Operations Manual, Chapter 23, Section 3.0, established requirements for the Mental Health Wraparound Demonstration Evaluation. The evaluator was required to develop a methodology to fully assess all aspects of the Demonstration necessary to enable the Secretary of Defense to make a determination regarding the efficacy and cost-effectiveness of implementing wraparound services as a new TRICARE/CHAMPUS benefit. TRICARE Regions 9 and 10 were designated as the regions from which the Evaluation comparison group would be selected. Science Applications International Corporation (SAIC) won a contract for the Demonstration Evaluation on September 28, 1998, and teamed with the Vanderbilt Institute for Public Policy Studies (VIPPS), Center for Mental Health Policy (CMHP), to accomplish the Evaluation requirements. Dr. Leonard Bickman, Director of the CMHP and a leading expert in child and adolescent mental health research, served as principal investigator in the Evaluation.

Dr. Bickman also led the team of evaluators in the U.S. Army's Fort Bragg Child and Adolescent Mental Health Demonstration—a 57-month project implemented in August 1989 that examined the efficacy of extended services for children and adolescents—as well as the Evaluation of An Innovative Children's Mental Health System in Stark County, OH. This Demonstration can be compared to the Fort Bragg Demonstration and provides an opportunity to augment the data gathered from that project to detect variances that most affect program outcomes. The Fort Bragg Demonstration theory held that multiple intermediate levels of care would increase continuity among services. This would in turn result in less use of the more restrictive and more expensive hospital and residential care settings. Case management also was an integral part of the Fort Bragg model. But while the Wraparound Demonstration project did focus on the service system, it differs from the two previous evaluations in several significant ways:

- The MCSC implementing the Demonstration shared financial risk for provision of services to Demonstration enrollees.
- Provision of nontraditional services, in addition to those identified in the MCSC Operations Manual and in Section 2.3.1 of this Report, was permitted on approval by DoD.
- The MCSC received capitated funds to conduct the demonstration.
- Although the Central Region's geographic area is vastly larger than the Fort Bragg Demonstration area, this Demonstration was limited to a very specific, defined group of eligible beneficiaries. As a result there were fewer Demonstration participants.
- The Wraparound Demonstration eligibility criterion focused on children and adolescents experiencing more severe mental health problems than those in the other evaluations. Participants in the Fort Bragg Demonstration included young military beneficiaries receiving any level of mental health services.
- The Wraparound participants were required to have a valid DSM-IV diagnosis considered amenable to treatment, and they required at least the residential/inpatient level of care or were preparing for discharge from a residential or inpatient facility and were at high risk for recidivism.
- The locus for services in the Fort Bragg Demonstration was a single mental health provider, the Rumbaugh Clinic. That clinic was responsible for providing or arranging for the provision of all services. Services under this Demonstration were provided or arranged by Anchor Facilities or Independent Case Managers.

- The Fort Bragg Demonstration was conducted before the inception of TRICARE.

The first two differences controlled excessive costs, which caused problems in the Fort Bragg Demonstration.

However, a number of events delayed the start of some critical components of the Evaluation until the end of June 1999 (Appendix D, Chronology of Events). These delays hampered the study in several significant ways and resulted in changes to the study design, as iterated in the next section of this report.

### 1.5.1 Scope of the Evaluation

The basic goal of the Mental Health Wraparound Demonstration was to determine if there is a better way to provide mental health services to children and adolescents with or at risk of severe emotional disturbances, both in terms of outcomes for the patient and their families and also in terms of healthcare costs. The Evaluation was to assess the goals, objectives, and strategies of the Demonstration, including implementation and program outcomes, and to assess the feasibility of implementing the program MHS-wide.

#### *1.5.1.1 Initial Study Design*

With direction from DoD that funding for the Evaluation support only a very basic study, the initial study design included these components:

- Comparison research (including treatment outcomes analysis, cost analysis, and utilization analysis)
- An analysis of cost effectiveness
- A process and implementation study to assess the goals, objectives and strategies of the Demonstration as iterated in MCSC Operations Manual and to evaluate program design, development, implementation, and ongoing operational issues
- A study of the availability of services to determine if the provider network is in place and if services are present and accessible
- Quality studies to assess the case management activity, selection process, and quality of wraparound services
- An analysis of the portability of the Demonstration.

In developing the initial study design, the Evaluation Team assumed that:

- A Logic Model against which program components would be measured would be developed and used
- A total of 300 study participants would be available to participate in the Evaluation (150 receiving wraparound services and 150 at the same severity level receiving traditional services)
- Data also would be gathered through interviews of all Evaluation participants, i.e., enrollee, parent or guardian, providers of care.

### Logic Model

A Logic Model is a proven tool for evaluating a program's expected outcome, articulating a common understanding of the program and providing a plausible and sensible model of how the program is supposed to work. The purpose of a Logic Model is to ensure that evaluators have a clear understanding of program goals, the implementation chain, and the expected links between the goals and the expected program benefit so that evaluation findings are appropriately interpreted.

A Logic Model includes consideration of external factors over which the program administrators have no control and enables the measurement of the presence or absence of key program components and processes, such as identifying and selecting Wraparound participants, intake/initial assessment for the treatment plan, case management, discharge, and followup.

### Evaluation Interview Modules

Widely accepted evaluation interview modules were adopted or adapted to address the requirements of the Evaluation and to gather data at two collection points—baseline upon a participant's entry into the Demonstration and again at 6 months of treatment.

In addition to this very basic study, additional studies were proposed to increase the reliability of the study results.

#### *1.5.1.2 Final Study Design*

Under the basic study design, three factors posed the greatest impediments to a fully supportable study outcome:

- The small number of potential Demonstration participants, assumed to be no more than 150
- The short lifetime of the Demonstration
- The severe funding constraints faced by the DoD in funding the Evaluation.

In addition, a series of events (described in Appendix D) had the effect of forcing changes in the basic study design. These changes included:

- Redesignation of the comparison group. Two issues resulted in the decision not to draw the comparison group from children and adolescents in Regions 9 and 10 who met the same participation requirements as those accepted into the Demonstration. First, the MCSC in Regions 9 and 10 would require additional funding to participate in the Evaluation, and second, there were concerns about the comparability of children and adolescents in Regions 9 and 10 to those in the Central Region.
- As a result, the comparison group was changed to include those children and adolescents in the Central Region who were referred to but not enrolled in the Demonstration.
- Reduction of the number of study subjects eligible to participate in the Evaluation from 300 (150 enrolled and 150 comparison) to 150 (75 enrolled and 75 comparison). Since the initial data collection point was at a participant's entry to the Demonstration, those children and adolescents enrolled in and receiving services in the Demonstration at the time data collection began were lost to the Evaluation.

- Increase in the number of data collection points for the child/adolescent and family members from two to seven (addition of five data collection points concurrent with treatment). [Although the number of study subjects was reduced, the increase in the data collection points has the effect of increasing the reliability of the findings. Data collection was completed using an Evaluation Instrument composed of three modules (Appendix E). Each module contained tools designed to capture data related to the clinical outcomes of care as perceived by the child or adolescent participating in the Demonstration and the parent or primary care giver.]
- Elimination of care providers from the data collection modules because of funding constraints.
- Although a Logic Model was developed (Appendix F), activities related to the identification of measurable outcomes as well as relevant data collection for the Logic Model quality studies were cancelled because of funding constraints

The final study design was reduced to these components: comparison research (including treatment outcomes analysis, cost analysis, and utilization analysis) and an analysis of cost effectiveness.



## **PART 2: EVALUATION RESULTS—IMPLEMENTATION**

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The DoD Mental Health Wraparound Demonstration generated a vast amount of documentation for review and analysis. Materials included:

- Chapter 23, Section 3, of the Managed Care Support Contractor's Operations Manual
- The TriWest/Merit Behavioral Care Corporation [the Managed Care Support Contractor (MCSC)] proposal to conduct the Demonstration, including correspondence, policy letters, and contract modifications
- Onsite observations
- A series of semi-structured interviews with key Demonstration personnel, including MCSC staff, Anchor Facility staff, and Independent Case Managers
- MCSC policies, procedures, and planned approach
- Administrative reports
- Clinical Management Committee (CMC) meeting minutes
- Paid claims data.

Issues such as identifying and acquiring appropriate providers and Care Managers, beneficiary and family response to the program, and implementation of systems requirements to facilitate tracking of participants were explored to:

- Identify barriers to smooth implementation and flaws in the implementation design
- Evaluate the client identification process to address the extent to which the MCSC was able to market the program and identify potential participants in the Demonstration
- Identify problems encountered and MCSC solutions
- Assess the extent to which the MCSC appropriately identified patient needs and provided interventions in the least restrictive setting as defined in the Demonstration requirements.

### **2.1 Startup and Initial Steps**

Planning and development of the Demonstration was a collaborative effort among the representatives from the Office of the Assistant Secretary of Defense for Health Affairs [ASD(HA)], the TRICARE Support Office, the Central Region Lead Agent, and the MCSC over a period of 6 months prior to implementation. Nonetheless, there were several significant barriers to implementation of the Demonstration as planned.

### 2.1.1 Identification, Credentialing and Privileging of Providers

Identifying, recruiting, and credentialing providers, both traditional and nontraditional, was generally labor intensive—and more so in rural areas or areas with few mental health providers. In some cases, developing the needed resources could result in long delays in service delivery. Difficulty recruiting appropriate providers to meet the requirements of the care plan also contributed to delays in enrolling participants.

The DoD placed significant importance on ensuring that only appropriately qualified persons provided services to Demonstration participants. Provision of nontraditional care posed challenges in identifying a service that would benefit a specific participant, identifying a professional with the appropriate skills in the community, and privileging that individual as a provider. While newly-participating licensed mental health providers of traditional services were credentialed using the same process required under the TRICARE umbrella contract, a separate process for privileging providers of nontraditional services was required. The privileging process for providers of services such as respite care, therapeutic foster and group homes, and providers of in-home therapy services ensured that these providers were appropriately licensed, regulated by the State or local government, or accredited by a recognized accreditation body. Nontraditional providers who were not licensed, regulated by the State or local government, or accredited were subject to yet another process to ensure their suitability to provide services. In addition, existing network providers participating in the Demonstration were required to meet Demonstration-specific requirements (specifically, that they were skilled in child, adolescent, and family therapy), and were required to sign an additional agreement specific to the Demonstration.

The MCSC performed all of the individual criminal background checks (CBC) for caregivers in out-of-home placement sites, performed site visits as necessary, and received and documented sites' compliance with State licensing or certification, local health and safety codes, and similar requirements.

Delays in providing services encountered in the early months of the Demonstration were overcome by the MCSC as the network of providers grew and by the addition of more personnel engaged in identifying, recruiting, and credentialing providers when necessary.

### 2.1.2 Identifying and Negotiating with Potential Anchor Facilities

At the time the Demonstration was implemented there were 12 CHAMPUS-certified Residential Treatment Centers (RTC) in the Central Region. In order to participate as an Anchor Facility, an RTC had to provide or assure ability to provide a full range of services including partial hospitalization, outpatient and inpatient care, and followup services.

The largest barrier to recruiting facilities to participate as Anchor Facilities was the per case rates proposed for reimbursement, and the assumption of risk. (**Figure 2**). Demonstration update reports have noted that facility administrators were enthusiastic about participating and liked the clinical conceptualization, but that they were “less enthusiastic about the risk-sharing requirements and the added costs of intensive case management and network development.”<sup>1</sup>

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<sup>1</sup> Personal communication dated December 19, 2001, Marion Gosnell to Pradeep Gidwani

**Figure 2. Proposed Case Rates for Demonstration Participants<sup>2</sup>**

	<b>Year 1</b>	<b>Year 2</b>	<b>Total</b>
Enrollee at admission to the Demonstration	\$21,266	\$7,089	<b>\$28,355</b>
Enrollee at discharge from a RTC with high probability of recidivism	\$9,032	\$3,011	<b>\$12,043</b>

The amounts noted in **Figure 2** reflect the final negotiations between the Government and the MCSC. They do not reflect the initial case rates established with the Anchor Facilities. The financial arrangements, like many other aspects of the Demonstration, evolved over the course of the project.

Initially, no facility was willing to participate in the Demonstration as an Anchor Facility at these case rates (Letter, Feb. 5, 1998). However, the MCSC persuaded five facilities to participate (**Figure 3**) in the Demonstration and share some limited financial risk for costs exceeding the case rate. Anchor Facilities also received fee-for-service payments for case management. To convince those facilities to participate, the MCSC used rates of \$35,000 for the first type of enrollee and \$14,876 for the second type of enrollee. These arrangements were ultimately terminated and the Anchor Facilities were handled on a fee-for-service arrangement.<sup>3</sup> However, some children and adolescents who were potential participants were not able to enroll because the Anchor Facilities refused to accept them for case management because of a history of RTC use or a high level of acuity.<sup>4</sup> (It should be noted that the MCSC is capitated and had already been paid for mental health services provided to all eligible beneficiaries. Therefore, DoD held the position that the Government would owe only any incremental costs directly attributable to the Demonstration. Case rates were established to enable a determination of what those incremental costs were and to use in establishing payment to anchor facilities.<sup>5</sup>)

**Figure 3. Anchor Facilities**

<b>Facility</b>	<b>Start Date</b>	<b>Closed Date</b>
Cedar Springs Behavioral Health, Colorado Springs, CO	May 1, 1998	
Behavioral Health Care, Intermountain Hospital, Boise, ID	May 1, 1998	
Behavioral Health Care College Meadows, Lenexa, KS	July 9, 1998	June 23, 1999
Wendy Paine O'Brien Treatment Center, Phoenix, AZ	August 6, 1998	September 15, 1999
Menninger Residential Treatment Center, Topeka, KS	October 26, 1998	January 5, 2001

## 2.2 The Client Identification Process

Unlike the U.S. Army's Fort Bragg Child and Adolescent Mental Health Demonstration, which addressed the needs of all children and adolescents in the Fort Bragg catchment area, this Demonstration encompassed the entire Central Region but included only children and adolescents between the ages of 4

<sup>2</sup> Letter dated February 24, 1998, Kennell and Associates, Inc., to Sara Marcheggiani, Marion Gosnell

<sup>3</sup> Personal communication dated December 19, 2001, Marion Gosnell to Pradeep Gidwani

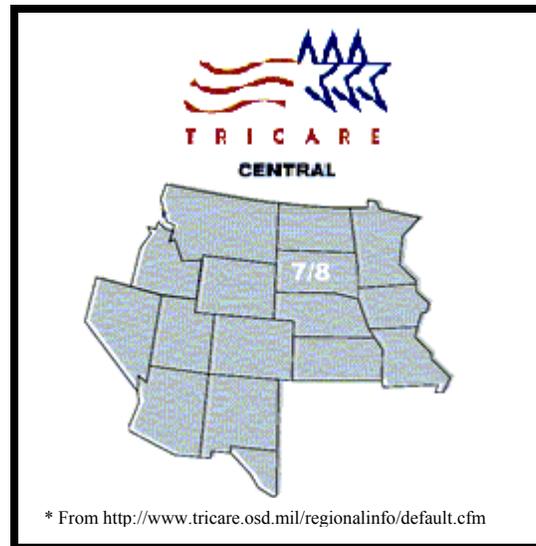
<sup>4</sup> Documentation from Anchor Facilities, interviews

<sup>5</sup> E-mail message, Jan. 25, 2001

and 16 who had a “serious emotional disturbance.” The proxy for estimating the potential number of children and adolescents with a serious emotional disturbance was whether or not they required RTC care or were being discharged from a RTC. Based on CHAMPUS/TRICARE historical data for the Central Region, about 150 beneficiaries (children and adolescents between the ages of 4 and 16) were anticipated to be at that level of acuity.

Because it covers a vast area reaching from western Arizona to eastern Minnesota, the TRICARE Central Region presented a challenge in reaching potential participants and for ensuring the availability and provision of community-based mental health services for all participants (**Figure 4**).

**Figure 4. TRICARE Central Region**



Although this TRICARE Region has been somewhat reconfigured, it is essentially rural, and contains only 5 cities with a population of more than 1 million and 10 cities with a population between 250,000 and 999,999.

However, the Region contains 27 military installations of varying sizes, and beneficiaries are located primarily near those installations. **Figure 5** lists catchment area referrals.

**Figure 5. Catchment Area Referrals**

<b>Catchment Area Referrals</b>		
Arizona	91	15%
Colorado	142	23%
Idaho	33	5%
Iowa	12	2%
Kansas	46	8%
Minnesota	4	1%
Missouri	58	9%
Montana	13	2%
Nebraska	24	4%
Nevada	28	5%
New Mexico	40	7%
North Dakota	12	2%
South Dakota	12	2%
Texas	49	8%
Utah	37	6%
Wyoming	1	0%
No State Listed	10	2%
<b>Total</b>	<b>612</b>	

### 2.2.1 Outreach and Marketing

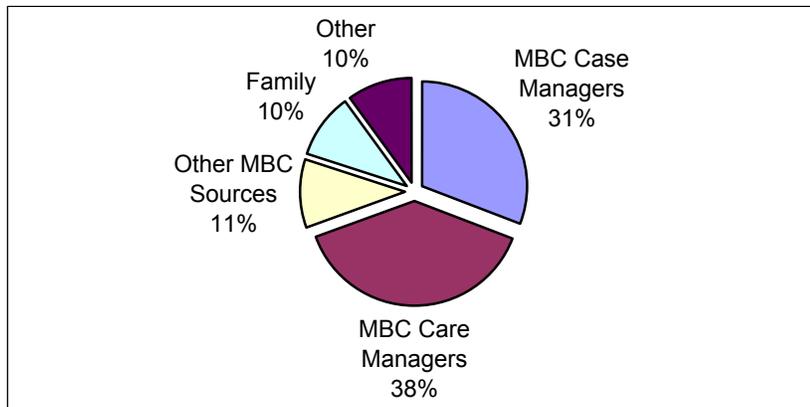
The MCSC marketing plan included requirements for orientation and training of MCSC staff, MTFs in the Region, Anchor Facilities, and all providers of services. Training site visits were conducted at each of the MTFs and Anchor Facilities, and a standard training protocol was utilized (MBC–TRICARE Wraparound Demonstration Project). Individual providers were informed about the Demonstration through MCSC standard provider relations activities and when recruited to provide services for the Demonstration.

There was no apparent outreach to the beneficiary community at large within the Region. This may have been influenced by what was perceived as a cap on enrollees at 150. Typically, parents learned about the Demonstration when approached by Demonstration staff and offered the possible opportunity for their child to participate. Similarly, although a Demonstration Fact Sheet (Appendix G) was prepared, it was not generally distributed to the beneficiary community. Families received the Fact Sheet as part of an information package once their child was considered for participation. Some parents of potential participants who were referred to the Demonstration but found to be ineligible were never aware that a referral had been made.

Although referrals to the Demonstration came from multiple sources (**Figure 6**), the overwhelming majority were received from sources internal to MBC (79 percent). The majority of potential participants (69 percent) were identified by MBC Case and Care Managers either at the time of a request for preauthorization for admission to a RTC or other inpatient setting, or when a child or adolescent was preparing for discharge from inpatient or RTC level of care. Only 10 percent of the potential participants were referred by a family member.

The "Other" category in **Figure 6** includes referrals from the MBC network providers, local Departments of Human Services, Anchor Facilities, and a few additional sources.

**Figure 6. Referrals by Source**



2.2.2 Beneficiary Cost-shares

Early in the Demonstration, some families declined to have their child participate because they anticipated that with the increased services available under the Demonstration, out of pocket costs would be prohibitive. Although the original design of the Demonstration required the use of TRICARE point of service cost shares, this requirement was never implemented. Instead, DoD applied the lowest cost shares available under TRICARE. Participating beneficiaries were considered enrolled in TRICARE Prime, and the Prime enrollment fee was waived. Demonstration cost shares for inpatient and outpatient services traditionally covered were those under TRICARE Prime. No cost share was applied to nontraditional outpatient services. However any type of "inpatient" service, including overnight respite care, was cost shared at the Prime inpatient rate (**Figure 7**) (TSO letter, 1998). Nonetheless, the increased services available under the Demonstration that were subject to a cost share had the potential to increase a family's out of pocket costs.

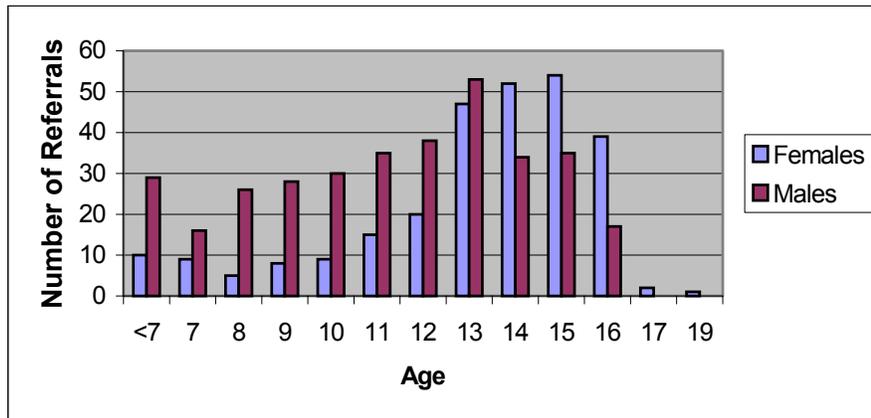
**Figure 7. Beneficiary Cost Shares**

Service	E1-E4	E5 and Above	Retiree
Annual Deductible	None	None	None
Annual Enrollment Fee	None	None	\$230 individual (waived)
Inpatient	\$20/day	\$20/day	\$40/day
Outpatient	\$6/visit	\$12/visit	\$25/visit (\$17 for group)
Therapeutic Foster Home	\$20/day	\$20/day	\$40/day
Group Home	\$20/day	\$20/day	\$40/day
Respite (overnight stay)	\$20/day	\$20/day	\$40/day
Respite (no overnight stay)	\$6/visit	\$12/visit	\$17/visit

2.2.3 Program Participants

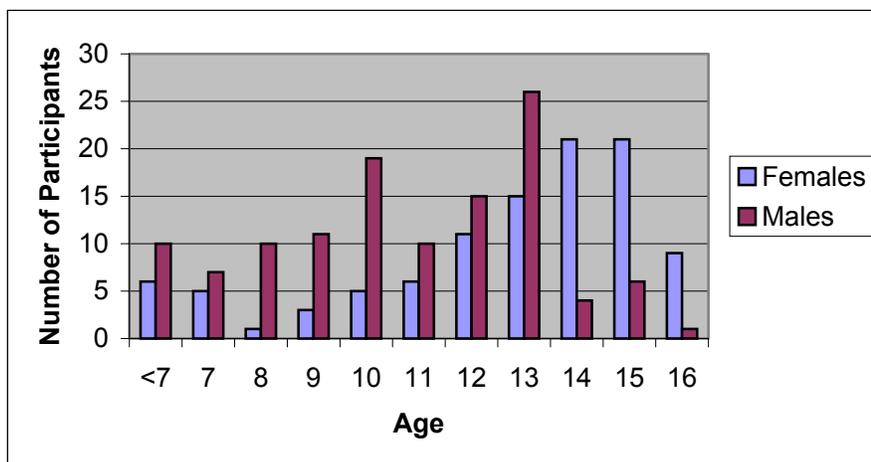
Although 612 potential participants were referred to the program, only 222 children and adolescents were ever served in the Demonstration and at no time did the active caseload reach 150 (MBC Monthly Report, Jan. 15, 2001). Specifically, 341 males between the ages of 3 and 16, and 271 females between the ages of 3 and 19 were referred to the Demonstration (**Figure 8**) (MBC Database, Dec. 2000).

**Figure 8. Referrals by Gender and Age**



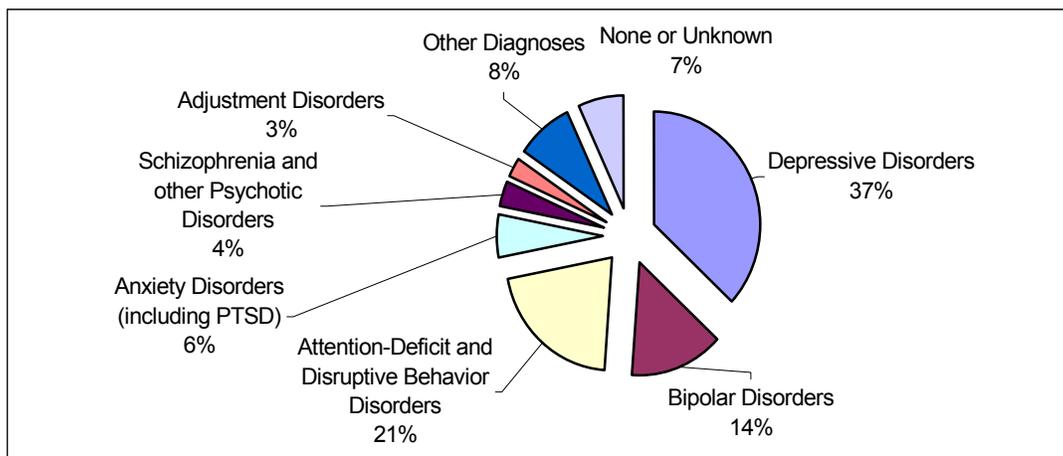
Ultimately, 113 females and 134 males between the ages of 4 and 16 were accepted into the Demonstration. Of those, 103 females and 119 males actually received services (**Figure 9**).

**Figure 9. Participants by Age and Gender**



#### 2.2.4 Referral Diagnoses

The single most frequent presenting diagnosis for children and adolescents referred to the Demonstration was major depressive disorder. **Figure 10** shows specific referring diagnoses grouped into their appropriate Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) classifications; therefore the level of severity is not apparent. For example, referring diagnoses for major depressive disorder ranged from “a single mild episode” to “recurrent, severe with psychotic features.” Mood disorders (depressive and bipolar) account for about half of the diagnoses. The “Other Diagnoses” category in **Figure 10** includes other disorders of infancy, childhood, or adolescence, impulse-control disorders not elsewhere classified, and several additional disorders.

**Figure 10. Referrals by Diagnosis**

### 2.3 Availability of Services

Although the MCSC was required to establish an exclusive provider network for the Demonstration, the existing MBC mental health provider network provided an instant resource for services traditionally covered under TRICARE. TRICARE-approved providers of acute hospital inpatient care and RTC services were already in the network, as were individual mental health providers. Many of the same institutional and individual providers were used in the Demonstration. Based on review of MCSC data, it appears that other individual providers of mental health services were recruited into the network on a case by case basis as a child or adolescent was enrolled in the Demonstration and specific needs were identified (MBC database provider file, Dec. 2000). Providers of nontraditional services also were recruited as a participant's needs were identified. Nonlicensed providers were required to be supervised by a licensed provider. Therefore, for every nonlicensed provider, it was necessary to recruit a licensed provider who would maintain oversight of the services rendered by the nonlicensed provider.

By the end of the first year of the Demonstration, there were 86 providers in the network delivering services to 56 program participants. This cadre of providers included 22 Psychiatrists, 33 master's-level Social Workers, 10 Psychologists, 8 Mental Health Counselors, 10 Paraprofessionals, 2 Case Managers, and one Mentor. By the end of 1999, the network included an additional 134 providers, and the Demonstration included 77 more participants. These numbers continued to increase over the course of the Demonstration.

**Figure 11** (MBC database provider file, Dec. 2000) provides a breakdown by State of the total number of network providers and beneficiaries served during the Demonstration. Appendix H provides additional information on the clinical discipline of the providers by State, as well as information on the number of providers and beneficiaries each year of the Demonstration.

**Figure 11. Demonstration Program Totals**

<b>Demonstration Program Totals Year-End 2000</b>		
<b>State</b>	<b>Providers</b>	<b>Beneficiaries</b>
Arizona	70	32
Colorado	81	58
Idaho	28	16
Illinois	1	0
Iowa	4	2
Kansas	52	13
Minnesota	12	2
Missouri	50	26
Montana	9	4
Nebraska	22	11
Nevada	15	9
New Mexico	20	7
North Dakota	10	3
South Dakota	12	5
Texas	24	23
Utah	18	11
Wyoming	0	0
<b>Total</b>	<b>428</b>	<b>222</b>

### 2.3.1 Access to Nontraditional Services

In addition to traditional TRICARE mental health services, a number of nontraditional services were considered covered benefits under the Demonstration, including:

- Psychiatric in-home services
- Respite care
- Therapeutic foster and group homes
- Crisis stabilization in group homes
- Art and music therapy
- Psychodrama therapy
- Recreation services
- Alcoholics and Cocaine Anonymous
- After Care programs
- Mentoring.

Additional nontraditional services, such as equine therapy, were requested and approved by ASD(HA) for some participants. However, some specific services were not available in an enrollee's area and some services were put on hold until an appropriate provider could be identified and credentialed. In addition, some nontraditional services that were requested were not approved, such as a "wilderness" program for one participant. After consideration of the wilderness program staffing requirements and safety issues, the CMC determined that the potential risks were too high and the program was not approved for use under the Demonstration (Weekly CMC Committee Meeting minutes, Nov. 4, 1999).

### 2.3.2 Access Standards

The MCSC was required to maintain the same minimum access standards for the Demonstration as those required for TRICARE Prime, including providing for emergency referrals and emergency services 24 hours a day, 7 days a week. Access to a Primary Care Manager was on a same-day basis by telephone or appointment, also 24 hours a day, 7 days a week.

### 2.3.3 Enrollment Process

The enrollment process encompassed a lengthy review to determine which potential participants would be accepted for the Demonstration and which were ineligible. Several factors posed challenges to enrolling participants in the study.

#### *2.3.3.1 Intake<sup>6</sup>*

The intake process for the Demonstration was proposed as a two-stage process: eligibility review and suitability review.

The eligibility review was conducted to determine if the potential participant met eligibility criteria. This stage was expected to be completed and eligible cases presented to the CMC within 1 week of the referral. Cases that appeared ineligible and required development were to be completed within 2 weeks of referral. However, the intake process (presented in Appendix I) proved to be extremely labor intensive. The suitability review was conducted by the CMC to determine if the Wraparound Demonstration could meet the needs of the potential participant. Once a potential participant was determined to meet the eligibility criteria, the Care Managers prepared a case presentation that documented eligibility, family background, developmental and school history, psychological and psychiatric history, current mental health status, and the Master Treatment Plan. The cases were then presented to the CMC for their review. It was expected that the Case Presentation would take an average of 1 week from initial identification through presentation to the CMC. Cases that appeared ineligible were expected to take 2 weeks to complete.

Early in the implementation of the Demonstration, the MCSC and the DoD felt that the children and adolescents being referred to the Demonstration had a higher level of acuity than expected and that more intensive participation by the CMC was warranted. As a result, the CMC, meeting every week, assumed the role of a clinical assessment team, assessing each case and making final determinations about whether a potential participant would be accepted into the Demonstration.

What appeared to be a straightforward intake process could, in some cases, take several months to complete. The single largest contributing factor to the delays in processing referrals was the failure of the family member to return signed consent forms and the agreement to participate. Another major roadblock to enrolling a participant in a timely manner was the inability to reach the parent or guardian of the

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<sup>6</sup> Mental Health Wraparound Demonstration Utilization Management Plan, February 2, 1998

potential participant by telephone or by mail. This step alone could take up to 40 days, at which point, if repeated telephone calls and letters to the parent or guardian did not produce results, the case was closed for consideration.

Early in the Demonstration, the time lag between the referral of a potential participant and the final decision by the CMC averaged 73.8 days. By the end of August 2000, the time lag had been reduced to an average of 35.4 days.

### 2.3.3.2 Denials

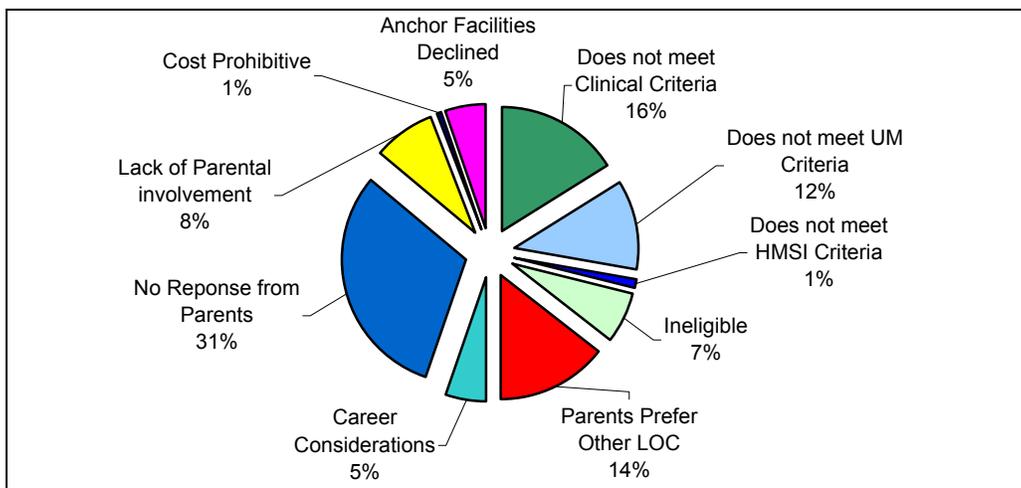
As described in Section 1.4.3.1, potential participants were required to meet specific eligibility requirements. Of the 612 children/adolescents referred to the program, only about 36 percent were ever enrolled in the Demonstration. A small number of referrals were found to be ineligible because of age, loss of CHAMPUS eligibility, or because they were moving from the Region. Some parents refused to participate, citing costs, career considerations, or a desire for another level of care.

The data are somewhat confusing when assessing the clinical reasons for denials. Thirteen percent of the referrals were denied because they did not meet utilization management or Health Management Strategies International criteria (the utilization criteria required under TRICARE). Another 16 percent were denied because they did not meet "Clinical Criteria." This category of denials has been interpreted as those cases "not amenable to treatment," although the MBC database includes a separate category of denials for "lack of parental involvement" that could also result in a denial because the case was "not amenable to treatment." Strictly using the denial category of "Does not meet Clinical Criteria," 16 percent of the children and adolescents referred to the Demonstration were denied as not being amenable to treatment. The definition for "amenable to treatment" used by Demonstration administrators was that the child:

- Had at least one legal guardian willing to participate in treatment.
- Did not have a persistent history of illicit drug use despite appropriate treatment, or poor motivation for rehabilitation.
- Did not have a diagnosis of pervasive developmental disorder.
- Did not have a diagnosis of conduct disorder without any other psychiatric presentation.
- Did not have a diagnosis of mental retardation.

Another 5 percent of those cases referred and initially accepted by the CMC were denied participation because the Anchor Facilities refused them for case management. Nonetheless, the single largest factor influencing a denial for enrollment was the parent's failure to respond when offered an opportunity for their child to participate. **Figure 12** shows the percentage of denials according to the reason for the denials and/or the reason for declining to participate.

**Figure 12. Denied Cases by Category**



**2.3.4 Case Management**

Case management is often considered the key to assuring that beneficiaries obtain appropriate services in the least restrictive, most cost-effective setting, comply with treatment protocols, and make progress. We examined the basic case management system, appropriateness of Case Managers caseload, and adequacy of the supervision of Case Managers. Documentation reviewed in this process included:

- Review of MCSC internal policies and procedures
- Care Manager and Case Manager Interviews
- Weekly Care Manager Reports.

Upon implementation of the Demonstration, there were two levels of Case and Care Management—Care Managers at the MBC Demonstration Office and Case Managers at Anchor Facilities.

**2.3.4.1 Care Managers**

The MCSC managed the intake process and the activities of the Anchor Facilities through three Care Managers. Initially, each of the Care Managers received referrals, prepared the cases for presentation to the CMC, and coordinated activities with the Case Managers at the Anchor Facility sites. As the workload grew, two of the MBC Care Managers focused on managing active cases, coordinating with field Case Managers, tracking enrollees’ progress, and providing weekly progress updates to the CMC. At this point, the third MBC Care Manager received all referrals, initiated contact with family members, and assembled and presented Case Presentation for each referral. Although there were no limits on the number of cases managed by the Care Managers, when caseloads exceeded 50, another Care Manager was employed.

**2.3.4.2 Case Managers**

Case Managers were licensed clinicians hired by and providing services through the Anchor Facilities. Wraparound training was provided by MBC during site visits to the Anchor Facilities. Interviews with Case Managers indicate that, although they were housed at an Anchor Facility, they functioned

independently of the facilities and most of their interaction was with the MBC Care Managers. There was no evidence of any onsite supervision of the Case Managers' activities.

The Case Manager's role was to ensure the appropriate implementation of the Master Treatment Plan, coordinating the provision of services with the child/adolescent, family, and the Treatment Team. However, there was no evidence that there were formal Treatment Teams or that a Team ever reviewed the Master Treatment Plan or progress toward goals, or reassessed the patient based on treatment outcomes. Rather, the Case Manager provided the interface between the participant, family, and provider. There was no evidence that the weekly updates from the Case Managers to the Care Managers pointed to the outcomes of therapy. They more or less appeared to be "shorthand" for what was happening with the client at that point in time.

There were three weaknesses identified in the requirement that all Case Management had to be provided by an Anchor Facility.

First, whether or not a potential enrollee was accepted into the Demonstration depended on an Anchor Facility's willingness to assume responsibility for providing or arranging the provision of all needed services. As mentioned earlier, 5 percent of potential participants were denied enrollment because an Anchor Facility was unwilling to provide case management because of the potential participants level of acuity or probability of readmission to a RTC.

Second, Case Managers who were required to coordinate community-based services often lived in a distant State, with little or no knowledge about the services available in the community in which a participant lived. In June 1999, more than half of the cases being managed by Anchor Facilities were enrollees who lived outside of the State (MBC Database, June 1999) in which the Anchor Facility was located (**Figure 13**).

**Figure 13. In-State and Out-of-State Cases**

<b>Anchor Facility</b>	<b>Cases Managed in State</b>	<b>Cases Managed Out of State</b>
Cedar Springs	16	3
College Meadows	0	13
InterMountain	1	5
Menninger	5	9
Wendy Paine O'Brien	12	9
<b>Total</b>	<b>34</b>	<b>39</b>

Third, the closure of several Anchor Facilities necessitated the identification and credentialing of Independent Case Managers to assume responsibility for the cases managed by that facility.

With the closure of Behavioral Health Care–College Meadows in Lenexa, KS, in June 1999, the MCSC requested that the DoD authorize the use of community-based Individual Case Managers. The DoD approved the hiring of local Case Managers on a fee-for-service basis only for those cases that:

- Were more than 50 miles away from a remaining Anchor Facility
- The remaining Anchor Facilities declined to accept.

Since the remaining Anchor Facilities declined to provide Case Management for the Demonstration enrollees at College Meadows, the MCSC identified and credentialed an Individual Case Manager for the College Meadows cases.

In September 1999, the Wendy Paine O'Brien Center in Phoenix, AZ, with 21 Demonstration enrollees, also closed. Again, the remaining Anchor Facilities were either at capacity or refused to assume case management of the Wendy Paine cases. The MCSC contracted with the Case Managers at Wendy Paine to continue as Independent Case Managers for the Demonstration. In all, 24 Independent Case Managers were recruited to provide services to enrollees before the Demonstration ended.

### **PART 3: EVALUATION RESULTS—OUTCOMES**

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Part 3 of this report compares program outcomes—including costs, clinical and functional indicators, and service use between two groups: children who received services in the DoD Mental Health Wraparound Demonstration and a usual care comparison group. The usual care comparison group is referred to as Treatment as Usual (TAU) Comparison.

It was important in the planning of the Mental Health Wraparound Demonstration Evaluation that substantial effort was placed on determining whether the DoD program, as implemented, was a good example of a wraparound project. However, as noted in Section 1.5.1.2 of this report, the implementation analysis (Logic Model) was discontinued because of funding issues. The Evaluation therefore depended on the data collected from parents about their perception of the services and the service use data to judge if the Demonstration embodied the principles of the wraparound concept.

What is the strength of evidence that wraparound can positively affect child and adolescent mental health outcomes? Myaard, Crawford, Jackson & Alessi, (2000), for example claim that the wraparound process can result in substantial changes that persist over time. Eber and Nelson (1997) indicate that improved emotional and behavioral functioning, as well as academic performance, was obtained when students received services through a wraparound approach. However, other researchers draw a much more tentative conclusion. Oliver, Nims, Hughey & Sommers (1998) conclude that the relationship between levels of wraparound expense and favorable client outcomes remains to be determined. Bourdin, Heiblum, Jones & Grabe (2000, chap.6) conclude that controlled evaluations of short- and long-term outcomes are needed before more definite conclusions can be drawn about the efficacy of wraparound services.

A review of Eber & Nelson (1997) and Myaard et al. (2000) reveals that no control group was used in either study. Given this fact, attributing any observed changes to wraparound intervention is premature. In addition, Myaard et al. (2000) was based on only four youth. One of the most frequently cited studies to support wraparound was conducted by Clark and his associates (1998). The Clark et al. study used randomly assigned participants to the wraparound and control conditions in a foster care sample. A careful reading of the results indicates that about 50 percent of the results showed no differences in outcomes. Moreover, the positive outcomes were placement in permanent homes and length of runaway status (with reduced length considered positive). The two groups were not significantly different on the proportion of runaways, rate of placement changes, and incarceration status. Mental health data showed that there was no effect of the wraparound intervention on internalizing behaviors reported by either the adult caretaker or the youth. The effect of the wraparound program on externalizing behaviors was more complex, with males seemingly to benefit from the program and females experiencing a detrimental effect. Clark et al. summarize their findings in a very tentative manner: “The findings suggest that the FIAP wraparound process holds some promise for improving placement outcomes for children who are lost within the foster care system” (p. 49).

In 1998, Malysiak concluded that while some studies suggest that improved outcomes can be the result of a wraparound process “no study has been able to correlate outcomes with some measure of integrity of the application of this approach” (p.12). In summary, the existing literature does not provide strong support for the effectiveness of wraparound. However, the picture is unclear because few studies exist and even fewer are methodologically sound. Thus, the present study has the opportunity to significantly contribute to our understanding of the effectiveness of the wraparound approach.

### 3.1 Method

The design and implementation of the Evaluation involved several stages and many measurement instruments. Baseline, concurrent, and followup modules were used to assess the effectiveness of care.

#### 3.1.1 Recruitment of Evaluation Participants

Participants in the treatment group for the Evaluation included families in the Demonstration project who were willing to participate in the Evaluation. As described in previous sections of this report, TriWest/Merit Behavioral Care Corporation, the Managed Care Support Contractor (MCSC) for the Demonstration region, identified, recruited, and screened potential candidates for the Wraparound Group and TAU Comparison Group.

The MCSC staff who were responsible for screening families referred to the Demonstration informed the legal guardian of all families after the start of the Evaluation about the study and obtained consent for Vanderbilt University staff to contact the family. Specifically, upon referral of a family for consideration for the Demonstration project, the MCSC sent a letter to the family explaining the Evaluation. The letter briefly described the Evaluation and explained to the family that unless they respond to the MCSC within 14 days of the date of the letter, contact information would be released to the Vanderbilt research team. The Vanderbilt research team utilized this contact information only to contact families to determine if they were interested in participating in the Evaluation.

#### 3.1.2 Design of the Evaluation

A quasi-experimental design was formulated and employed for the Evaluation. The TAU Comparison Group included families referred to the Demonstration but who did not participate in the Demonstration, either because they refused or were ineligible. However, participants in the TAU Comparison Group also had to meet a subset of the criteria used for Demonstration participants. **Figure 14** compares the requirements for the Demonstration versus requirements for the Evaluation. Inpatient treatment refers to 24-hour care outside the home in a medical facility—typically hospitalization to resolve a crisis such as a suicide attempt or medication problem. Residential treatment refers to 24-hour care outside the home provided in a non-medical facility. This type of treatment is usually more long-term, used in ongoing situations.

**Figure 14. Eligibility Requirements for the Wraparound Demonstration Versus the Evaluation**

Demonstration Requirements	Evaluation Requirements
<ul style="list-style-type: none"> <li>• Written permission from parent or guardian for the child/adolescent to participate in the program and parent or guardian's commitment to participate in the treatment.</li> <li>• Verification of TRICARE enrollment and that the family agrees to have their child's enrollment changed to Prime for psychiatric care while in the program.</li> <li>• Between the ages of 4 and 16 at the time of entry into the program.</li> <li>• Lives in and expects to remain in the Region for the duration of the Demonstration.</li> <li>• Has a valid Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) diagnosis.</li> <li>• Has a serious emotional disturbance generally regarded as amenable to treatment.</li> <li>• At the time of referral, requires at least residential or an inpatient level of care or is preparing for discharge from residential or inpatient care and is at high risk for recidivism.</li> <li>• Does not require long-term custodial care in a Residential Treatment Center (RTC) or nursing facility.</li> <li>• Does not have a persistent history of illicit drug use despite appropriate treatment, or poor motivation for rehabilitation.</li> <li>• If a persistent pattern of antisocial behaviors exists, they appear to be the result of a treatable mental disorder.</li> <li>• Has no developmental or cognitive disorder that would prevent him/her from benefiting from treatment.</li> </ul>	<ul style="list-style-type: none"> <li>• Has a valid DSM-IV diagnosis.</li> <li>• Between the ages of 4 and 16 at the time of entry into the program.</li> <li>• Is TRICARE eligible.</li> <li>• Requires at least residential/inpatient level of care or preparing for discharge from residential or inpatient facility and at high risk for recidivism.</li> <li>• Not planning to leave military service within 1 year.</li> </ul>

A Vanderbilt research staff member contacted parents or legal guardians of children who were at least 4 years old by telephone or mail to answer any questions and to discuss the purpose of the Evaluation, the nature of data collection, and the time commitment. All parents/legal guardians and adolescents who agreed to participate were interviewed. Informed consent or assent was obtained from both parties if the child was older than 12 years. Interviews with the parent/primary caregiver and adolescent were scheduled to start within 2 weeks to 3 weeks after receipt of the family's consent to participate by the Vanderbilt research team. In addition, we obtained data from Management Information System (MIS) and CHAMPUS insurance claims data.

The quasi-experimental design used in the Evaluation included seven waves of data collected over roughly a 6-month to 10-month period. Over the course of the Evaluation, we collected data from parents/primary caregivers, adolescents (12 years and older), and Case Managers. The original design also included data from professional therapists and nontraditional service providers, but these were cut from the Evaluation after it began as a result of budget cuts by the DoD. Data received included insurance claims data and family and provider contact information.

### *3.1.2.1 Therapeutic Alliance*

A critical element of a wraparound system of care is the resource-rich service array. Within this system, children have contact with several supportive adults in a variety of settings. These contacts comprise a network of people working in concert toward the goal of helping the child. Many of these individuals may be nonprofessionals, such as people in a Big Brother or Big Sister program. The difficulty in an evaluation of wraparound services is determining the effectiveness of therapist-client interactions. Prior evaluations could not untangle the question of whether the wraparound model itself is not differentially effective compared to usual services, or whether the services within the system were not able to bring about added change. An innovative and integral method for dealing with this issue involves measuring the quality, or potency, of the therapeutic ingredients of treatment—that is, the relational interaction between client and therapist. The therapeutic alliance is the most widely accepted element of the client-therapist interaction, cutting across all schools, brands, and modalities of therapy. The alliance involves the strength of the therapeutic relationship between a child and a therapist, consisting of affective and cognitive components. The alliance involves client perceptions of the therapist as helpful and therapy as teamwork. Thus, the therapeutic alliance involves feelings and attitudes, both positive and negative, about the therapist and the child's relationship with the therapist.

The potency measure was used to synthesize the report of therapeutic alliance between parent and provider and adolescent and provider from the perspectives of the provider, adolescent, and parent. In turn, information about services is tied to the therapeutic alliance information to create a therapeutic potency rating measured during the course of treatment. These ratings will be one of the first steps for describing treatment potency within the context of the Demonstration and comparison sites.

### *3.1.2.2 Hypotheses*

Hypotheses for the mental health outcome study appear in **Figure 15**.

**Figure 15. Main Mental Health Hypotheses for the Project**

<b>Hypothesis</b>	<b>Question</b>	<b>Measure</b>	<b>Rationale</b>
Equivalence of groups	Are outcomes influenced by case mix differences between groups?	Mental health characteristics of child and family; demographic and other differences.	Quasi-experiment is unlikely to have sample as well matched as random clinical trial.
Satisfaction and mental health outcomes	Does wraparound yield better clinical improvement?	See discussion of measures below for mental health outcome measures.	“Better outcome” means that for a given type of case, Wraparound treatment yields quicker, larger, or longer-lasting improvement.
Dose-effect	Is clinical improvement influenced by amount of wraparound treatment?	Correlation between amount of treatment and amount of improvement.	If wraparound services are effective, there should be covariation between amount of treatment and response for a given kind of case.

Note: In addition to conventional definitions of dose (bed days, sessions, hours, dollars etc.), a measure of the “effective dose” of mental health treatment will be estimated as the quantity in hours times the quality. Potency, defined in the section on therapeutic alliance, may be positive, zero, or negative.

### 3.1.2.3 Data Collection and Measures

The measurement model for this project was adapted to the nature of the services to be evaluated. In selecting a measurement model for a wraparound system of care, the following principles were applied:

- The measures selected should comprise an instrument core or battery that will produce a multidimensional profile of children’s mental health (Bickman et al., 1995).
- Multiple informants should be used as respondents (child, parent, and provider, where feasible).
- The measurement battery must be general enough so that it is usable across all service settings and child populations.
- The model must measure child outcomes, addressing functioning, symptomatology, and quality of life, and should measure other domains that can affect treatment success such as satisfaction with services and family functioning.
- The system of measurement should include child background (demographics, family characteristics, prior service use, trauma and abuse history, etc.).
- The system should include baseline measures of functioning, symptomatology, and other pertinent domains.
- The system should include concurrent measurement of functioning and symptoms as progress indicators during treatment.
- The system should include concurrent measurement of the treatment delivered and as experienced by children.

- Finally, the system should include followup administrations of baseline measures at 6 months to assess service use (such as re-hospitalizations and use of nontraditional services) and mental health outcomes over time.

Bickman *et al.* (1998) reviewed outcome and process measures within 15 child mental health domains. In this review, an ideal measurement system was characterized as feasible, comprehensive, flexible, psychometrically sound, developmentally and culturally sensitive, and as having potential for improving clinical effectiveness (certain information is relevant and useful to clinicians). The authors examined 178 measures using 29 evaluative criteria that included issues of suitability (six criteria), reliability (five criteria), content validity (four criteria), construct validity (six criteria), normative information (two criteria), developmental sensitivity (three criteria), and cultural sensitivity (three criteria). Results of the intensive review showed that certain existing measures could be compiled to create a comprehensive measurement model composed of a background module, a baseline and followup module, and a concurrent module. The core instrument for the measurement system is the Ohio Youth Problems, Functioning, and Satisfaction Scales (Ohio Scales; Ogles & Lunnen, 1997). Detailed information on the modules is described in the next section.

Because the Demonstration catchment area covered a large geographical space, it would have been prohibitively expensive to conduct in-person interviews. Thus, all data from parents/primary care givers and adolescents were collected by telephone. Provider data were collected with mailed surveys.

#### *3.1.2.3.1 Baseline and Followup Modules*

The purpose of the baseline and followup module was to assess in aggregate the effectiveness of services. The most informative and powerful measurement model uses the same instruments for baseline and 6-month measurements after enrollment in the Evaluation.

#### *Adherence Measure*

This 10-item measure assesses adolescent's report of compliance with treatment homework assignments and tasks assigned by therapist and nontraditional providers.

#### *Caregiver Strain Questionnaire (CSQ)*

The CSQ measures parental stress in areas such as financial strain, worry, and emotional strain due to caring for children with behavioral and emotional problems. We used this instrument because it demonstrated good internal consistency (Chronbach's alpha=. 93) in the U.S. Army's Fort Bragg Child and Adolescent Mental Health Demonstration, and other studies have demonstrated that parents' perceptions of stress improves with children's treatment.

#### *Child Behavior Checklist (CBCL) and Youth Self Report (YSR)*

Achenbach's Child Behavior Checklist (1991a) and Youth Self Report (1991b) are parallel-standardized instruments that obtain parent and youth reports. These instruments provide classification of childhood psychopathology based on symptoms. Each provides nine subscales of behavioral problems, three global problem scales (externalizing, internalizing and total problems), and social competency ratings. We used these instruments because they provide classification of psychopathology based on empirically-derived symptoms, allow assessment of healthy psychological functioning, provide normative data by gender, and have high test-retest reliability, inter-rater reliability, and concurrent and discriminant validity.

### *Family Background Form*

The Family Background Form is an adaptation of the U.S. Army's Fort Bragg Child and Adolescent Mental Health Demonstration Family Background Form and the Background Module for the U.S. Substance Abuse and Mental Health Services Administration (SAMHSA) Impact Study (SAMHSA, 1998). The Family Background Form is well suited to the present project, as it is based on measures for military children and families and Medicaid recipients who are in a managed care service system. The Family Background Form is a parent/primary caregiver self-report measure that was collected only at baseline and takes about 25 minutes to complete. The instrument addresses family and household composition, strain on family resources, family background (employment, finances, military experience, health and use of services), and child background (age, gender, ethnicity, health, and contact with law enforcement).

### *Family Environment Scale—Family Cohesiveness and Conflicts Subscale*

This 18-item measure assesses parent/primary caregiver and adolescent perceptions of family cohesion and conflict. Since parental involvement is a key component to the wraparound Demonstration, it is believed that insight into parent and child report of family issues is an important factor to include in order to assess implementation of wraparound and correlates to youth outcomes.

### *Ohio Scales—Parent Version (OS-P) and Adolescent Version (OS-A)*

The self-reported Ohio Scales measure problem behaviors (44 items), functioning (20 items), hopefulness and well-being (4 items), feelings of satisfaction and inclusion with services (4 items), and family functioning (2 items), according to both parents and children. We used this instrument because it assesses both functioning impairment and competency. In addition, it made the “best measures” list in a review of 178 child and adolescent mental health measures because of its rigorous conceptual development and good psychometric properties (Bickman et al., 1998).

### *Helping Alliance Scale—Adolescent Version (HAS-A) and Helper Version (HAS-H)*

This instrument is based on the Adolescent Working Alliance Inventory (1993) and Therapeutic Alliance Scales for Children (1992). It measures the strength of the relationship between an adolescent and the helper addressing the child's mental health issues, such as a therapist, teacher, mentor, minister, or coach. The instrument measures these dimensions of the therapeutic relationship: Openness, supportive caring, bond, agreement on goals, and perceptiveness of the helper. We used this measure because the helping alliance has been related to outcomes in numerous studies in the adult mental health literature. Furthermore, preliminary studies suggest a relationship between therapeutic alliance and outcomes with children and adolescents. Finally, the parallel versions of the instrument allow us to examine the helping relationship from the perspective of both participants.

### *Helping Behaviors Checklist—Adolescent Version (HBC-A), Clinician Version (HBC-C), and Non-clinician Version (HBC-NC)*

This instrument is based on the work of Weersing (1996) and has parallel versions to measure adolescents' and helpers' perceptions of behaviors that are meant to assist the child. We used this measure because it provides information about the “black box” of treatment and approaches/services used in the wraparound service system. In addition, this instrument measures the helping approaches of nonclinicians and nontraditional providers, which is an important component of the spectrum of services in a wraparound service network.

### *Mental Health Attitude (MHA) and Mental Health Efficacy (MHE)*

The MHA and the MHE instruments were administered to parents. The MHA assesses general attitudes about mental health issues using 29 statements about which parents report their level of agreement. The MHE instrument consists of statements concerning beliefs about adolescents' mental health services and parents' involvement in those services. Parents respond to these statements by reporting their level of agreement. These constructs potentially reflect parental investment in services and their belief in the efficacy of services, which are key factors in effective wraparound service implementation.

### *Parent-Helper Relationship Questionnaire—Parent/Primary Caregiver Version and Clinician Version*

This is a modified version of the Working Alliance Inventory-Short Form (WAI-S). This measure assesses the therapeutic relationship between the parent/primary care giver and the adolescent's primary therapist. Parallel versions of the measure provide information from the perspectives of both participants in the relationship. Research in children's mental health indicates that the quality of the relationship between parents/primary caregivers and their adolescent's provider is related to continuation of services. Factor analysis of the WAI-S revealed a strong general alliance factor and three other factors that correspond to Bordin's (1979) three components of therapeutic alliance—bond, agreement on tasks, and agreement on goals.

### *Perceived Social Support from Family (PSS-FA)*

The PSS-FA measures adolescents' perception of social support from their families. This measure was used because Bickman and associates (1998) rated it as the best measure of social support for children and adolescents in a review. Furthermore, it has good internal consistency; factor analysis reveals one global scale of family support and it correlates highly with identity formation, self-reliance, and work orientation.

### *Vanderbilt Satisfaction Scales (VSS)*

The VSS were developed by the Vanderbilt University Center for Mental Health Policy for the Fort Bragg Demonstration. The survey is a self-report measure designed to assess parents' and adolescents' level of satisfaction with services received (such as access and convenience, adolescent's treatment, parent services, family services, relationship with therapist, staff responsiveness, financial charges, and discharge transition). In previous studies, the authors have demonstrated adequate internal reliability and explored the validity of the scale. It was administered to parent/primary caregivers and adolescents at followup only.

### *Service Process Inventory for Families and Youth (SPIFY)*

The SPIFY is a measure with three parallel versions for parent/primary caregivers, youth, and providers. The measure was developed by Bramley, Burchard, and Tighe (1999) to assess the fidelity of the implementation of a wraparound service system. The brief measure (there are fewer than 29 items on the longest measure) was administered to parents/primary caregivers, adolescents and providers of traditional and nontraditional mental health services at baseline and followup to determine if the key elements of the Wraparound Demonstration were represented in the Wraparound and TAU Comparison Groups.

### *Services Assessment*

This instrument was used with parents/primary caregivers and adolescents at followup to measure satisfaction within nine service types: intake and assessment, outpatient services, inpatient hospital/RTC, case management, day treatment, therapeutic group home, therapeutic family home, afterschool services, and in-home counseling. The instrument was used because it covers several dimensions of mental health services, and internal consistency ranges from acceptable to excellent. It also was used in the Fort Bragg Demonstration.

#### *Student Life Satisfaction Scale (SLSS)*

This brief measure asks the adolescent to rate her quality of life. This instrument was used because Bickman and associates (1998) rated it as one of two best measures of quality of life for children and adolescents. Furthermore, test-retest reliability, internal consistency, and item-total correlation estimates are adequate and cultural bias is limited.

#### *Vanderbilt Functioning Index—Parent/Primary Caregiver Version (VFI-P) and Adolescent Version (VFI-A)*

Parallel versions of this instrument solicit reports from parents/primary caregivers and adolescents about the adolescent's functional impairment across the dimensions of antisocial behavior, problems at home, problems at school, problems with peers, and self-harm behaviors. This instrument was used because it provides information on severe functional impairment, which is suited to the Evaluation sample, and the measure items predict several dimensions of service usage.

#### *Vanderbilt Helper Background Survey—Clinician Version and Nonclinician Version*

This instrument is an updated version of the Fort Bragg Provider Survey and modified for nonclinician respondents. It measures clinician and nonclinician helper backgrounds, orientations, treatment modalities/helper circumstances (such as adult mentor), familiarity with the client and family, and treatment interactions with client and family.

#### *Vanderbilt Positive Functioning Index—Parent/Primary Caregiver Version (VPFI-P) and Adolescent Version (VPFI-A)*

The parallel versions of the VPFI measure positive activities above and beyond performing basic activities of daily living, including peer interactions, extracurricular activities, helping others, and employment. This instrument was used because one of the goals of the Demonstration was to promote clients' strengths. However, since strength assessment is not adequately addressed in the mental health services research arena, this brief measure was used in an attempt not only to learn about clients' strengths but also the performance of this measure in the field.

#### *3.1.2.3.2 Concurrent Module*

The concurrent module was designed to provide information about implementation of key elements of the Evaluation and was necessary to measure the moderating variables that potentially aid or impede children's progress in treatment. Although researchers and service providers commonly collect background information on children and families, there are no sets of scales or comprehensive instruments that have been validated for use concurrent with treatment in a variety of mental health settings. Therefore, a group of instruments was used to measure client problems and functioning, satisfaction with services, service utilization, therapeutic alliance, and helper behaviors.

*Helping Alliance Scale—Adolescent Version (HAS-A) and Helper Version (HAS-H)*

This measure was used at baseline, at followup and concurrent to treatment because it provides information about a dynamic relationship, which may vary over the course of treatment.

Since not every therapeutic encounter was documented—especially those delivered by nonprofessionals—each adolescent was asked to describe at least three adults that have helped him or her with problems since the last interview (interviews were held about every 4 weeks). The therapeutic contact was then evaluated on its therapeutic bond using the Helping Alliance Scale. The overall estimate of therapeutic potency for a child was the sum of the appropriately valenced mean multiplied by the amount of contact during a treatment episode.

Data were collected from two providers working with the adolescent at each wave. One provider served as the adolescent's primary clinical provider, and the second was a nontraditional provider (or a second traditional provider if no nontraditional provider worked with the youth).

*Helping Behaviors Checklist—Adolescent Version (HBC-A) and Helper Version (HBC-H)*

This measure was used at baseline, at followup and concurrent to treatment because it provides information about a dynamic relationship between the client and helper. The activities and approaches were expected to vary over the course of treatment, so this instrument was used to document that pattern with respect to traditional and nontraditional providers and the client.

*Ohio Scales—Parent Version (OS-P) and Adolescent Version (OS-A)*

The Ohio Scales were described previously.

*Parent-Helper Relationship Questionnaire—Parent/Primary Caregiver Version and Clinician Version*

This measure was described previously.

*Parent Report of Child-Helper Relationship Questionnaire—Parent/Primary Caregiver Version*

This measure provides information about the parent's perception of the dynamic relationship between the child and therapist. The purpose of the wraparound is to keep youths in the least restrictive environment, which for many includes the family home. Keeping a troubled youth in the home can be a challenge, and insight into parental perception of the efficacy of the therapist-client relationship over the course of therapy may be related to service use, satisfaction, and client outcomes.

*Perceived Social Support from Family (PSS-FA)*

Youth's perception of social support from his/her family was measured during the course of treatment and at baseline and followup. One of the key elements of the wraparound service system is the involvement of the family in the process, which could influence youth perception of familial support. This measure attempts to document the process over the course of treatment.

*Service Process Inventory for Families and Youth (SPIFY)*

The SPIFY was described previously. It was used in the concurrent package to track any changes in therapeutic alliance.

### *Service Utilization and Medication*

This instrument is based on the instrument developed by the SAMHSA for the Impact Study, a national program to evaluate the impact of managed care in the Medicaid service sector. The instrument asks parents/primary caregivers to report on the services the adolescent received, medications taken and compliance with drug regimen, and service quality and access since the last concurrent interview. This model was used because it assesses the presence or absence and quality of services, and increases reliability of parent's reports secondary to decrease in errors associated with informant lapses in memory.

### *Student Life Satisfaction Scale (SLSS)*

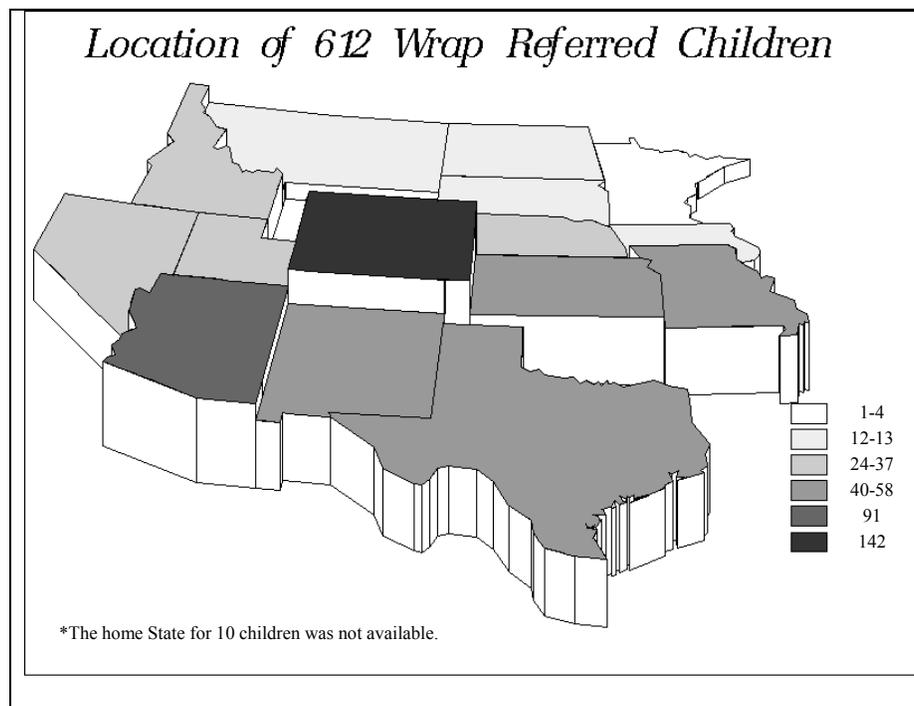
The youth's perception of quality of life was used during the course of treatment and at baseline and followup. This is a global measure to assess changes in outcomes beyond symptoms and level of functioning.

## **3.2 Mental Health Outcome Analysis**

The results of the Wraparound Demonstration Evaluation will appear in three sections:

- Sample description
- Treatment process outcomes
- Mental health outcomes.

As described previously, the Wraparound Demonstration provided “wraparound” services to Military Health Service (MHS)-eligible children and adolescents in the Central Region (previously known as Regions 7 and 8). From a pool of  $n=28,500$  children who received any mental health services at all in the Central Region during the data period (February 1998 through September 2000), 612 children and/or adolescents were referred to the Demonstration as potential participants. Referrals were received from February 1998 through September 2000. **Figure 16** shows the home States of the Wraparound-referred children; 48 percent were from Colorado, Arizona, and Missouri. No home State was listed for 10 of the children referred to the Demonstration. (**Figure 5** presents a breakdown of referrals by State.) Of the 612 Wraparound-referred children, 222 were enrolled and received some wraparound services.

**Figure 16. Location of 612 Wraparound-referred Children\***

The remaining 390 referred children continued to receive services in the core program, TAU Comparison. Of the 612 referred children, 111 were selected as eligible and also agreed to participate in the Evaluation—71 families participated in the Wraparound Group and 40 families comprised the TAU Comparison Group. The last case was accepted into the Wraparound Demonstration on October 2, 2000, and services in the Demonstration ended on January 31, 2001.

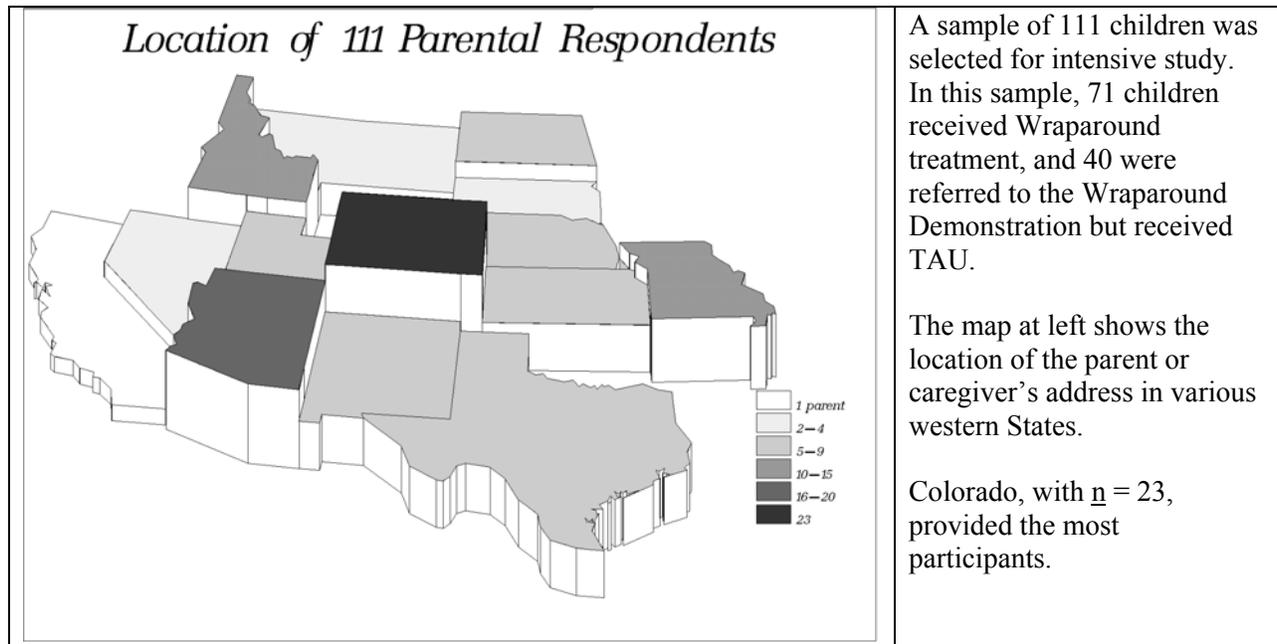
Child and family mental health outcomes are the “bottom line” of the study. However, in order to understand these results, it is necessary to understand the context in which they occur. The first step is an introduction to the study samples. In this section on mental health outcomes, the main emphasis will be on the 71 children treated in the Demonstration and included in the Evaluation. Later, in the section on utilization and cost outcomes, we will consider the 111 Evaluation participants, as well as several larger samples of which the 111 participants are a subset. For example, we will consider the sample of the 612 children referred to the Wraparound Demonstration, and the 57,351 children who, as military dependents, received any form of mental health treatment in the Central Region between April 1, 1995 and June 31, 2001. Although this data reflects diverse methods of care management, patterns that affect this scenario are not expected to differ by group.

### 3.2.1 Sample Description

The first step in the analysis of mental health results is the description of the research sample. **Figure 17** shows the region that caregivers (generally parents<sup>7</sup>) reported as their home address.

<sup>7</sup> For brevity, the word “parents” will refer to any caregiver who speaks for the child as a respondent in this study, regardless of whether or not they are birth parents.

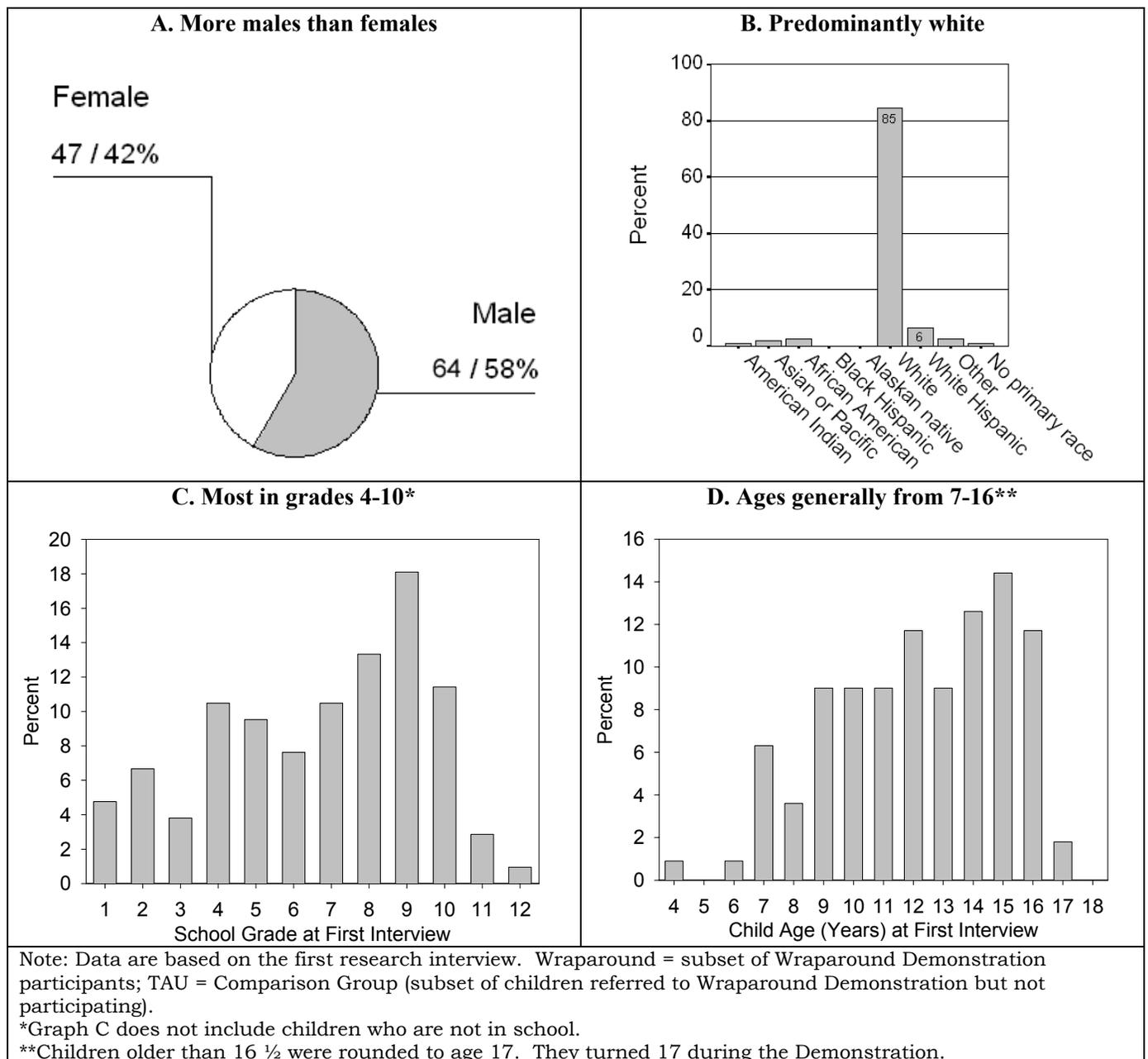
**Figure 17. Location of Respondents for the Mental Health and Utilization Study**



Participants came from the Central Region, including various western States centered around Colorado. The Wraparound Demonstration served only the Central Region, and comparison cases were drawn from the same Region in order to keep similarity between the groups as high as possible.

**Figure 18** presents some basic facts about children in the sample. The sample included more boys than girls, and most children were white.

**Figure 18. Treatment Sample of 111 Children Treated in Wraparound or Comparison**



A more detailed description of the sample follows. **Figure 19** describes basic features of the study sample of  $n = 111$  children in terms of means or percents. The children ranged from 4 to 17 years old. As noted, the sample included mostly Caucasian/white children (72 percent). On average, parent reports were available for six of the possible seven waves of mental health data, which yielded an 85 percent overall level of completeness.

**Figure 19. Basic Description of Study Children**

	Label	Mean or percent	Std Dev	Min.	Max.
1.	Gender (male)	57.7%			
2.	Wraparound Group	64.0%			
3.	Child's age at Wrap referral (years)	12.19	2.90	4.40	16.70
4.	Grade in school	6.65	2.81	1.00	12.00
5.	Height of child (inches)	60.26	7.65	42.00	77.00
6.	Weight (pounds)	114.30	47.94	32.00	285.00
7.	African American	2.7%			
8.	White	72.1%			
9.	White Hispanic	12.6%			
10.	$\bar{n}$ (of seven) adult waves available per family	5.96	1.94	1.00	7.00
11.	Proportion of seven waves present	0.85	0.28	0.14	1.00
12.	Months between first and last adult waves	6.43	2.66	0.00	11.37
13.	Mean time between waves (months)	1.29	0.19	0.97	1.89
14.	All seven adult waves of data available	73.9%			

This small sample of  $\bar{n} = 111$  would not support the study of racial differences, because the groups were too small to reveal reliable differences. A much larger sample would be needed to determine whether results for African-Americans (about 3 percent of the sample) or Hispanics (about 13 percent of the sample) are different from those for Caucasian children (72.1 percent of the sample). It will be shown later that the full sample is just large enough to answer the general questions of the Evaluation, without trying to determine whether race affects a child's response to wraparound treatment.

With the last group of sample descriptions (**Figure 19**), some limitations of this study are considered:

- The small sample may lack statistical power to detect important outcomes (see Section 3.2.2.1).
- Missing data may bias the results in ways that are confused with the effects of wraparound (see Section 3.2.2.1).
- Differences between cases in the timing of their treatment and interviews may bias results (see Section 3.2.2.2).
- Accidental differences between children's treatment in Wraparound and TAU Comparison may bias the study's results (3.2.2.3).

These possible distortions are reviewed empirically in the following sections.

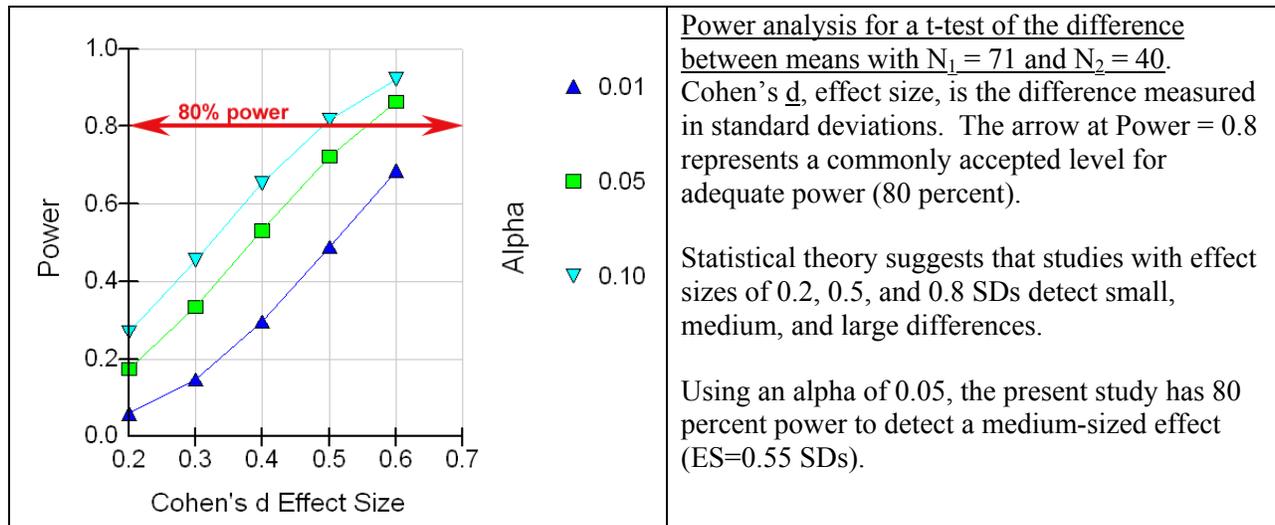
### 3.2.2 Possible Study Limitations

Any research study faces limitations. In this section, four issues will be considered: small sample size, lack of statistical power, missing data, differences between cases in the timing of treatment and research interviews, and preexisting differences between Wraparound and TAU Comparison Groups that might be confused with the results of wraparound treatment.

### 3.2.2.1 Statistical Power

The first limitation is low statistical power in a study with only 111 cases. This is a small sample—only 11 percent of the size of the evaluation sample at Fort Bragg (Bickman, 1995), or 32 percent of the size used in a similar study in Stark County, OH (Bickman, Summerfelt, and Noser).

**Figure 20. Power to Detect Differences in Means for 111 Adult Respondents**



#### 3.2.2.1.1 Power of Cross-sectional Treatment Group Differences at a Single Time

With 111 cases, subtle differences between the two groups at baseline may be difficult to detect. To evaluate this limitation, a power analysis was done for a t-test of the difference between means with  $N_1 = 71$  and  $N_2 = 40$ . This is the classical measure of statistical power introduced by Cohen [Cohen, 1988; Cohen, 1992], who suggested that 80 percent power was a reasonable minimum power level for research. Power analysis estimates the chance of detecting a result, if one occurs, for different effect sizes (ES). Effect size may be measured by Cohen's  $d = (\text{Mean}_1 - \text{Mean}_2) / \text{SD}_{\text{pooled}}$ . Cohen's  $d$  measures the size of an effect in standard deviations.

**Figure 20** (above) shows the results of a Cohen-based power analysis. According to this analysis, the Evaluation had adequate power (80 percent) to detect a medium-sized effect (at  $\alpha < .05$ , ES = 0.55 SDs).

#### 3.2.2.1.2 Power Analysis of a Longitudinal Result

When there are seven repeated measurements of each child, statistical power increases. This increase occurs because seven repeated measurements, taken *in toto*, are much more reliable than a single observation. Diggle, Liang, and Zeger (1994) in *Analysis of Longitudinal Data* (p. 30) offer a power analysis for a clinical trial with two equal-size groups of  $m$  subjects. This model can be adapted to the setting of unbalanced groups including  $n = 71$  and  $n = 40$  with that of a balanced experiment of two equal groups including 52 cases each. The Diggle et al. model was estimated with the assumptions in **Figure 21**. Results suggest that longitudinal differences as small as 0.25 SDs at the endpoint can be detected with 80 percent power.

**Figure 21. Longitudinal Power Analysis, Assumptions and Results****A. Longitudinal power assumptions**

- $n_1 + n_2 = 52 + 52 = 104$  (similar power to  $40 + 71 = 111$ ).
- Cross-wave correlations average  $\underline{r} = .80$ .
- Cases are drawn independently as individuals.
- Wave times in months are 0.00, 1.16, 2.43, 3.78, 5.11, 6.46, and 7.79 (the average times observed).
- Outcome is a test like the CBCL with an SD of 10.

**B. Result**

There is 80 percent power to detect differences in slope of 0.315 points per month, which is 2.45 points after 7.79 months. For parent's self-reported outcomes, with  $SD = 10$ , this is a Cohen's  $\underline{d}$  effect size of 0.245 SDs at the endpoint. When using youth's responses, this study can detect a Cohen's  $\underline{d}$  effect size of 0.46 SDs at the endpoint.

**C. Conclusion**

In adult responses, this study has adequate power to detect differences of about 0.25 SDs at the endpoint. This is a small (0.20 SDs) to medium (0.50 SDs) size effect.

The longitudinal power analysis suggests that the present study had adequate power to detect differences as small as 0.25 SDs.

As mentioned earlier, in this study only children aged 12 or older gave self-reports. This produced a smaller group of 58 youths in the self-report sample. Power for this smaller sample will be substantially less than for adult respondents.

Conclusions of power analysis:

- This study had marginal power to detect medium-sized cross-sectional differences with adult respondents.
- This study had adequate power to detect large cross-sectional differences with child respondents.
- Power was much better in the longitudinal analysis.
  - There was power to detect differences of .25 SDs for adult respondents.
  - There was power to detect differences of .46 SDs for child respondents.

**3.2.2.2 Completeness and Timing of Interview Data**

Missing data or differences in timing were additional limitations of the Evaluation. For example, if respondents who were having bad outcomes missed data waves, outcomes might appear better than they

really were. Also, if one group responded to questionnaires later in the course of their treatment they might appear to improve more quickly. Of particular interest are differences between Wraparound and TAU Comparison participants in missing data. Significant differences between these groups could bias outcomes in ways that mistakenly appear to be the result of Wraparound-TAU Comparison treatment differences.

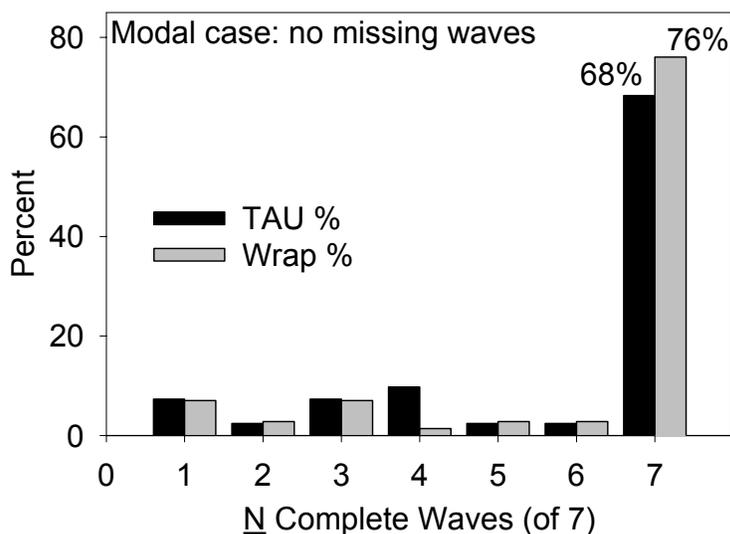
A similar potential artifact was timing. For example, suppose improvement occurs slowly and that one group had more interview delays than the other. It would be possible for the group responding later to appear to have better results, when the difference was actually in the timing of their interviews.

3.2.2.2.1 *Missing Waves in Wraparound Study*

Fifteen percent of the overall possible waves are missing. This means that of the seven waves in which a family could have contributed data, the overall completeness was 85 percent. This rate of completeness is approximate to each family contributing six of seven possible waves.

**Figure 22** is a histogram of the number of complete waves across families in each of the experimental conditions. In both conditions, the typical (modal) family contributed data at all seven waves. The average number of completed waves per family in the Wraparound Group (6.02) was not statistically different from the average number of waves completed (5.78) in the TAU Comparison Group.

**Figure 22. Number of Complete Adult-reported Waves**



The fact that there was no significant difference between treatment conditions in the number of missing waves reduces the leverage of possible attrition artifacts. While the lack of difference does not prove the absence of attrition bias (Foster & Bickman, 1996), it does make it less likely that missing data bias the results.

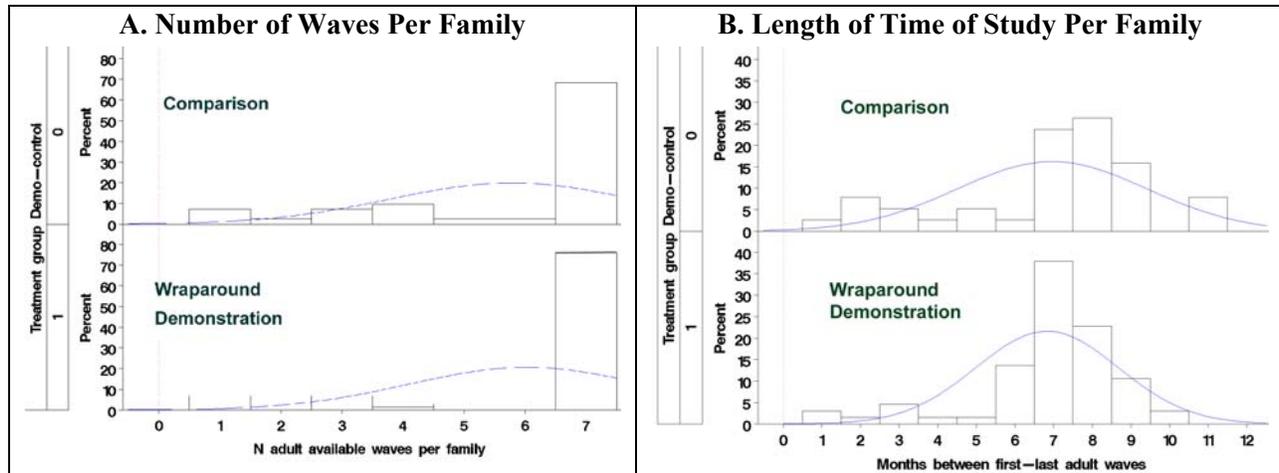
3.2.2.2.2 *Timing and Completeness of Interviews*

There was considerable variation between families in the number and timing of their interviews. For example, the number of completed waves ranged from one to seven, and the time from first to last interview ranged from 1.11 months to 11.37 months (for families with two or more interviews).

Frequency distributions for completeness and timing appear in **Figure 23**. **Figure 23A** (left) shows the number of waves per family, with seven being perfect. **Figure 23B** (right) shows the number of months it took for families to complete the study. Lengths of time of less than 6 months represent premature dropout, and lengths of time of more than 6 months to 7 months represent some delay in scheduling interviews.

**Figure 23** suggests that most families participated in all seven waves during a 6-month to 9-month period. Some families dropped out, participating in fewer waves and shorter lengths of time. Other families completed waves at a somewhat slower rate than one interview per month.

**Figure 23. Attrition and Timing**

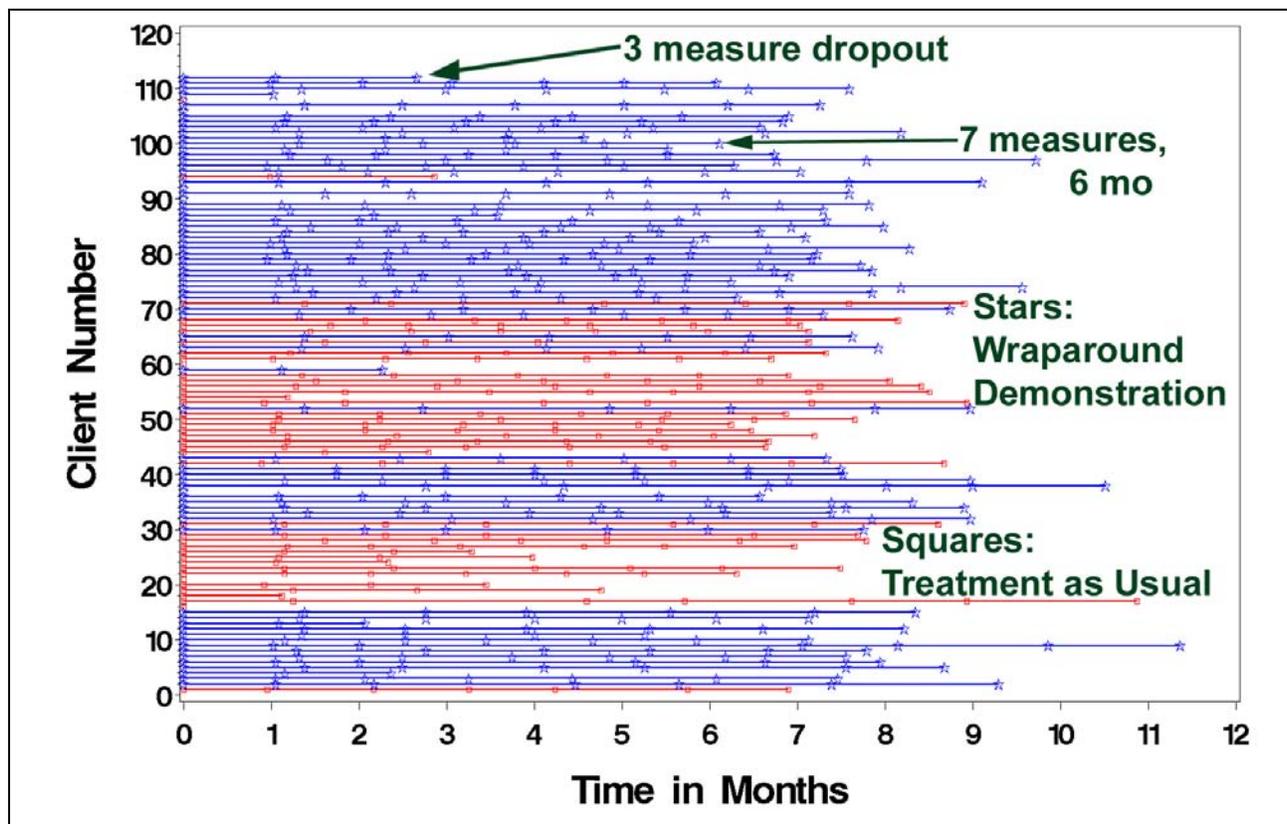


**Figure 24** shows individual details for the number of waves at which each family contributed data and the time intervals for those waves. In **Figure 24**, the horizontal X axis represents time in months and the vertical Y axis represents the family's arbitrary identification number. Each horizontal line represents one family; interview times marked with stars show Wraparound cases, and interviews marked with squares show TAU Comparison cases.

Some families dropped out. For example, Demonstration case number 112, with only 3 waves, dropped out just short of 3 months after entering the study. Another family, Demonstration case number 101, participated in all 7 interviews over a period of about 6 months. The interview rate for Demonstration case number 101 is near the maximum rate of one interview per month.

Overall, we see in **Figure 24** some considerable variations in the number of interviews and their timing within the study.

Figure 24. Individual Timelines for 112 Interviews



If the treatment groups differed in levels of completeness or the timing of interviews, it is possible that the differences would distort the study's results. Differences between Wraparound and TAU Comparison cases in completeness or timing could mistakenly be interpreted as differences in the outcome due to treatment. This possible confounding of treatment outcome with other variables is a limitation to be evaluated.

Figure 25 shows 15 indices of completeness and timing by treatment group. For each index, a nonparametric test of significance compared the Wraparound Group with the TAU Comparison Group. Differences between groups were nonsignificant for all 15 indices of timing and completeness.

**Figure 25. 15 Indices of Completeness and Timing by Treatment Groups**

Label	Wraparound Demonstration					TAU Comparison					Prob.
	n	Mean	Std Dev	Min.	Max.	n	Mean	Std Dev	Min.	Max.	
1. Months between adult waves 1–2	66	1.28	0.30	0.89	2.30	38	1.25	0.32	0.92	2.76	0.46
2. Months between adult waves 2–3	63	1.21	0.23	0.85	1.87	37	1.28	0.41	0.95	3.35	0.48
3. Months between adult waves 3–4	58	1.27	0.35	0.85	2.43	34	1.52	0.80	0.89	5.06	0.18
4. Months between adult waves 4–5	58	1.25	0.34	0.92	3.09	30	1.32	0.33	0.99	2.30	0.14
5. Months between adult waves 5–6	56	1.28	0.33	0.82	2.46	29	1.40	0.33	0.89	2.30	0.06
6. Months between adult waves 6–7	55	1.27	0.25	0.92	1.94	28	1.35	0.30	0.92	2.07	0.27
7. Months between first-last adult waves	71	6.35	2.50	0.00	9.72	41	6.45	3.00	0.00	11.37	0.34
8. n adult waves available per family	71	6.03	1.93	1.00	7.00	41	5.78	2.01	1.00	7.00	0.43
9. n adult waves missing per family	71	0.97	1.93	0.00	6.00	41	1.22	2.01	0.00	6.00	0.43
10. Mean time between interviews (months)	66	1.27	0.18	0.97	1.79	38	1.33	0.21	1.03	1.89	0.17
11. Variance in between-interview time (months)	64	0.09	0.13	0.00	0.80	37	0.19	0.43	0.00	2.49	0.23
12. Proportion of waves missing	71	14%		0%	86%	41	17%		0%	86%	0.43
13. Proportion of waves present	71	86%		14%	100%	41	83%		14%	100%	0.43
14. Only one adult wave of data	71	7%				41	7%				0.96
15. All seven adult waves of data	71	76%				41	68%				0.38

Prob: P( $\alpha$ ) two tailed nonparametric Kruskal-Wallis Test;  $p > .05$  is nonsignificant.

Finding no significant differences in timing or completeness between treatment groups suggests that it is unlikely that the differences between individuals in timing and completeness will distort outcomes by group.

The next limitation is possible pretreatment differences between the Wraparound and TAU Comparison participants. This might have occurred if the children who were accepted into the Demonstration were different from those who were referred to the Demonstration but did not participate because the parents declined or they were judged not to be eligible by the Clinical Management Committee (CMC).

### 3.2.2.3 Wraparound-TAU Comparison Baseline Family Characteristics: A Close Match

Baseline parent reports were compared for the 71 Wraparound Group cases and 40 TAU Comparison Group cases to determine whether different kinds of families or children were treated in the two groups. In a randomized experiment, it is expected that the two groups are equal in the beginning. Since this was not a randomized experiment and the participants were supposedly specially selected, there was an expectation that the groups would be different. However, when selecting this design the Evaluation team anticipated that the selection factors would not affect the equality of these groups.

**Figure 26** compares Wraparound cases and TAU Comparison cases on 90 different parent reports. These reports covered a wide range of issues, including severe behavior problems, treatment and medication, need for treatment, school performance, family socioeconomic data, and contact with social services. A nonparametric Wilcoxon test was conducted for each of these items comparing the mean or percentage of the two groups. Results found 5 statistically significant differences out of 90 tests. However, with 90 statistical tests, it is expected that 5 percent of those, or 4.5 tests, would appear significant by chance. For this reason, significance levels were corrected for the false discovery rate resulting from conducting so many tests. According to the corrected probabilities, there was only one significant difference between the groups, namely a somewhat better performance in the TAU Comparison Group for taking medications as prescribed. With only one difference among so many variables, **Figure 26** suggests that, in the main, the Wraparound Group and the TAU Comparison Groups were equivalent at baseline.

**Figure 26. Five Significant Baseline Parent-Report Means and Percents by Treatment Group**

Parent reported information	Comparison				Wraparound Demonstration				Significance	
	Mean or %	SD	Min	Max	Mean or %	SD	Min	Max	p	p-FDR
1. Youth in contact with police past 6 months?	45.0%		0	1	25.4%		0	1	0.03*	0.61 NS
2. Youth stayed overnight/longer in hospital?	90.0%		0	1	73.2%		0	1	0.04*	0.61 NS
3. Times youth took medication 1 properly past 6 months?	3.81	0.4	3	4	3.28	0.7	2	4	<.01***	<.01 ***
4. Youth part-time special class for learning disability in past 6 months?	45.9%		0	1	23.5%		0	1	0.02*	0.61 NS
5. Youth frequently skipped school past 6 months?	18.9%		0	1	5.9%		0	1	0.04*	0.61 NS

Note: This table shows results that had univariate significance among 90 Wrap-TAU comparisons. With so many tests, probabilities had to be corrected for the “false discovery rate.” The only reportable difference on all 90 variables was in parent report of medication compliance (#3).

Figure 27 compares the two groups on their mental health index scores at baseline. Those scores were the foundation for the longitudinal mental health results. (Section 3.1.2.3 describes the mental health measures). Significant baseline differences on the parent or youth-reported indices would be problematic. Such differences would leave open the question of whether differences in outcome were the results of the treatments themselves or the results of pretreatment conditions.

**Figure 27. TAU Comparison and Wraparound Cases Baseline Indices**

Index	Comparison (N = 40)					Wraparound Demonstration (N = 71)					Sig. Prob
	N	Mean	Std Dev	Min.	Max.	N	Mean	Std Dev	Min.	Max.	
<b>Parent-Reported Indices</b>											
1. Total caregiver strain: 1–5, hi bad	40	3.4	0.8	1.8	4.8	71	3.2	0.8	1.6	4.7	0.28
2. Ohio Scales functioning—hi good	39	35.6	14.7	6.0	68.0	71	38.0	14.8	8.0	79.0	0.64
3. Ohio Scale 1-month prb total—hi bad	37	48.0	25.5	12.0	113.0	71	48.8	25.8	6.0	141.0	0.84
4. Ohio Scale 6-month prb total—hi bad	40	71.0	29.3	26.0	137.0	71	64.8	27.0	10.0	142.0	0.32
5. Alliance, amount of contact with Provider Number 1	36	15.1	3.5	7.0	20.0	71	15.4	4.2	7.0	20.0	0.67
6. Positive functioning sum—hi good	33	3.2	1.9	0.0	8.0	71	3.7	1.6	1.0	7.0	0.11
7. Family Conflict Index—hi bad	40	6.8	2.4	3.0	11.0	70	7.6	2.5	2.3	11.0	0.15
8. Family Cohesiveness Index—hi good	40	8.5	2.5	4.0	12.0	70	8.1	2.9	3.0	12.0	0.41
9. Total on VFI for parent—hi bad	39	0.4	0.2	0.0	0.8	70	0.4	0.2	0.0	0.7	0.18
10. Mental Health Efficacy—hi good	40	20.4	5.0	6.0	29.0	70	22.4	4.6	9.0	30.0	0.07
<b>Youth Reported Indices</b>											
1. Ohio Scales functioning—hi good	16	52.0	10.3	27.0	69.0	40	53.0	13.8	14.0	77.0	0.80
2. Ohio Scale 1mo prb total—hi bad	16	35.0	16.5	15.0	68.0	39	36.4	29.9	0.0	138.0	0.55
3. Ohio Scale 6mo prb total—hi bad	16	48.6	19.6	15.0	87.0	40	48.9	34.1	3.0	153.0	0.68
4. Positive functioning sum—hi good	15	4.5	2.8	1.0	10.0	38	3.9	1.6	1.0	7.0	0.78
5. Student Life Satisfaction—hi good	16	12.1	4.6	1.0	19.0	37	11.9	5.2	2.0	19.0	0.95
6. Student Life Satisfaction—hi good	16	27.5	6.7	17.0	39.0	39	27.8	8.5	12.0	43.0	0.87
7. Family Conflict Index—hi bad	15	3.7	2.3	0.0	8.0	40	4.9	2.2	1.0	9.0	0.08
8. Family Cohesiveness Index—hi good	16	5.3	2.7	1.0	9.0	38	5.0	2.6	0.0	9.0	0.76
9. Total on VFI for kid—hi bad	16	0.4	0.2	0.1	0.9	40	0.3	0.2	0.0	0.9	0.10

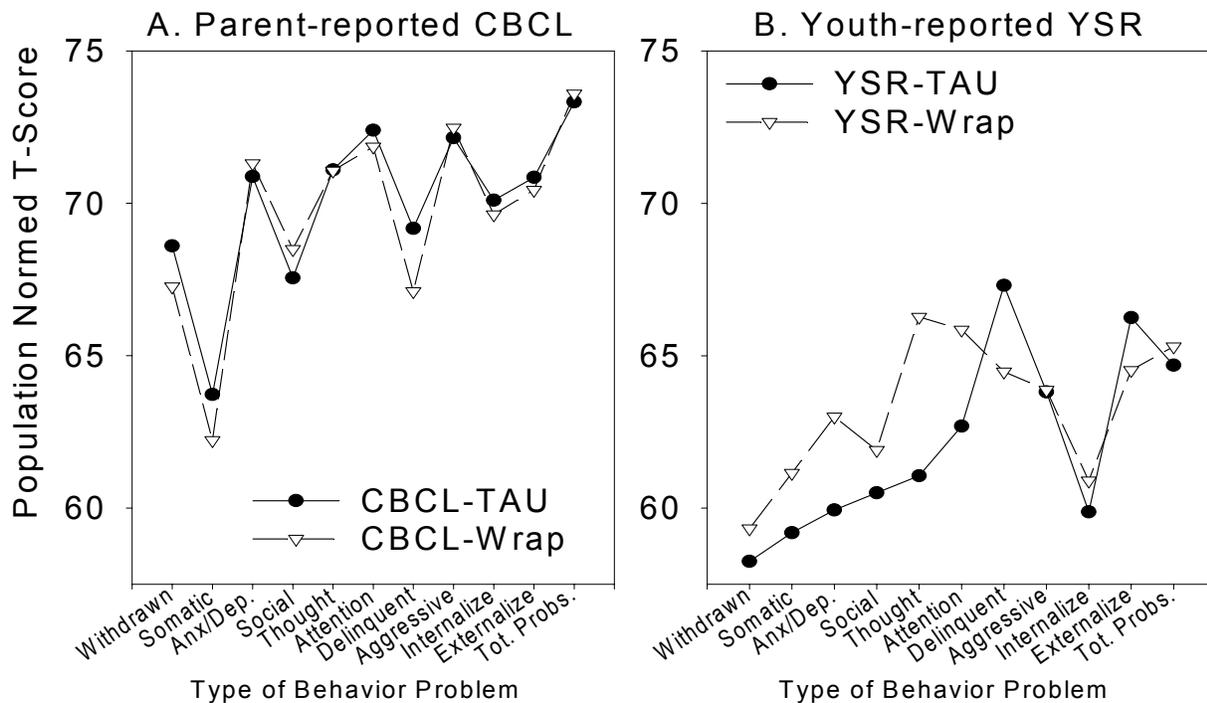
No significant differences were found between Wraparound and TAU Comparison participants on the longitudinal indices, which further suggests that the treatment groups did not differ at baseline.

The Child Behavior Check List (CBCL, Achenbach, 1991a) and the Youth Self-Report (YSR, Achenbach, 1991b) are well-researched, widely used measures of mental health and behavior problems<sup>8</sup>. Comparing the performances of the Wraparound Group with those in TAU Comparison Group on the

<sup>8</sup> The CBCL/YSR were not used as a longitudinal outcome because they are not recommended for monthly retesting.

CBCL and the YSR produced no significant differences ( $p > .05$  on all). Means appear in **Figure 28**. Levels of behavior problems appear similar in these two groups.

**Figure 28. Comparison-Wraparound Differences on CBCL, YSR**



#### 3.2.2.4 Summary: Findings of Limitation Assessment

An assessment of the limitations of the study suggested the following conclusions:

- Longitudinal parent reports were adequately powered; cross-sectional child reports were underpowered.
- Missing data rates are low, with no significant differences between the Wraparound and TAU Comparison subsamples.
- Differences in timing were minimal.
- Characteristics of Wraparound and TAU Comparison participants are very closely matched.

#### 3.2.2.5 Sensitivity to Change: Comparing the Ohio Scales with the Achenbach Checklists

The Ohio Scales are the main repeated measurement of mental health problems and functioning in this study. Because of their key role in measuring change, we compared the Ohio Scales with the well-known and well-researched Achenbach checklists. The Ohio Scales purport to measure mental health problems and the impairment of functioning that results from mental health problems. The Achenbach scales—the CBCL and YSR—have been researched in thousands of studies, but they are based on 6-month observation windows and are not recommended for repeated use in 1-month intervals. Since the Ohio Scales are new, they may be less sensitive to change than the Achenbach CBCL and YSR.

To assess this possibility, pre- and post-test data from the Achenbach checklists were compared with the Ohio Scales at 6<sup>+</sup> months on two figures:

- Inter-rater correlation
- Effect size and significance of the pre-post difference score.

The inter-rater (parent-youth) correlations appear in **Figure 29**.

**Figure 29. Parent-youth Correlations for 46 to 56 Dyads**

Time	Scale	inter-rater <i>r</i>
Pre	CBCL-YSR	0.28
	Ohio Functioning	0.14
	Ohio Problems	0.31
Post	CBCL-YSR	0.49
	Ohio Functioning	0.39
	Ohio Problems	0.43

Note: To enter the correlation, data must be available from both respondents

These inter-rater correlations are low, indicating considerable differences between parents and youth in their assessment of the youth's psychological problems. Correlations in this range ( $r = 0.5$  or lower) are the norm in studies of children's mental health. Except for the low inter-rater correlation for Ohio Functioning at the first interview, ( $r = 0.14$ ), the rest of the correlations are moderate. The instruments are comparable, with a slight advantage for the CBCL (somewhat higher on 3 of 4 inter-rater correlations).

Sensitivity to change—the ability of a test to detect client change—is an important aspect of test validity that is seldom measured. To evaluate sensitivity to change, it would be necessary to know how much each client really had changed, and then consider how well the tests performed against this gold standard. Unfortunately, there is no practical way to know exactly how much a client's mental health changes. Consequently, there is almost always lack definitive information about the ability of any test to provide valid measures of change.

An approximate comparison can be made, however, by examining the effect sizes of two tests that measure change—in this case the CBCL and Ohio Scales. While this comparison is not definitive, it provides useful information.

Cohen's  $d = \text{difference}/(\text{standard deviation})$  was again used to measure effect sizes. To calculate the effect size, both pretest and post-test scores were standardized using pretest norms so that the pretest mean score was exactly zero ( $d = 1$ ) and the post-test varied as a result of child change.

For example, the pretest mean for the CBCL was 72 ( $SD = 9$ ). These norms were used to standardize both pretest and post-test as shown:

$$CBCL1 = (CBCL1 - 72.1071429)/8.7587433$$

\* \*\*\*\*Standardize to wave 1 norms

$$CBCL2 = (CBCL2 - 72.1071429)/8.7587433$$

In the equations, CBCL1 refers to the pretest and CBCL2 refers to the post-test.

For all six tests in **Figure 30**, this calculation resulted in scores that were significantly different, and the scores changed in a healthy direction. For example,  $ES = -.52$  means that the average child's score was 0.52 SDs lower (had fewer problems) on the post-test. For the parent-rated Ohio Functioning, the average score was 0.37 SDs higher in functioning.

**Figure 30. Sensitivity to Measure Change for CBCL and Ohio Scales**

		ES	n	t	p(t)
		(Change)			
Parent	CBCL (Parent)	-0.52	45	3.44	0.0013
	Ohio Functioning (Parent)	0.37	44	-3.99	0.0002
	Ohio Problems	-0.50	45	3.71	0.0006
Youth	YSR (Youth)	-0.54	45	3.49	0.0011
	Ohio Functioning (Parent)	0.35	44	-3.03	0.0040
	Ohio Problems	-0.51	45	3.65	0.0007

Note: Functioning is scored high-is-good, the rest high-is-bad.

If all the effect sizes are rounded to the nearest tenth, they all come to 0.4 or 0.5. According to Cohen, 0.5 is a medium-sized effect. The interpretation of **Figure 30** leaves room for argument. Perhaps the two tests measured change perfectly, and the true effect sizes are .4 to .5. Or, perhaps the true change was much higher than shown in **Figure 30**, and neither test is very sensitive to change.

It can be inferred from **Figure 30** that the Ohio Scales and the Achenbach scales appear roughly similar in their sensitivity to change for this particular sample.

### 3.2.3 The Longitudinal Model

Another issue in understanding how children in the study sample changed over time is the use of the longitudinal measurement model in the study. Recent advances in longitudinal modeling made it possible to use more precise and valid statistical models than those that might have been used in the past, such as difference scores, or pre-post residuals.

Measuring results in longitudinal repeated measures offers many technical advantages over pre-post change scores, such as avoiding psychometric problems with change scores and increased statistical power (Lambert, Doucette & Bickman, in press). While longitudinal analysis uses complex software (Littell, Milliken, Stroup, & Wolfinger, 1996; Bryk & Raudenbush, 1992), the main results can be summarized.

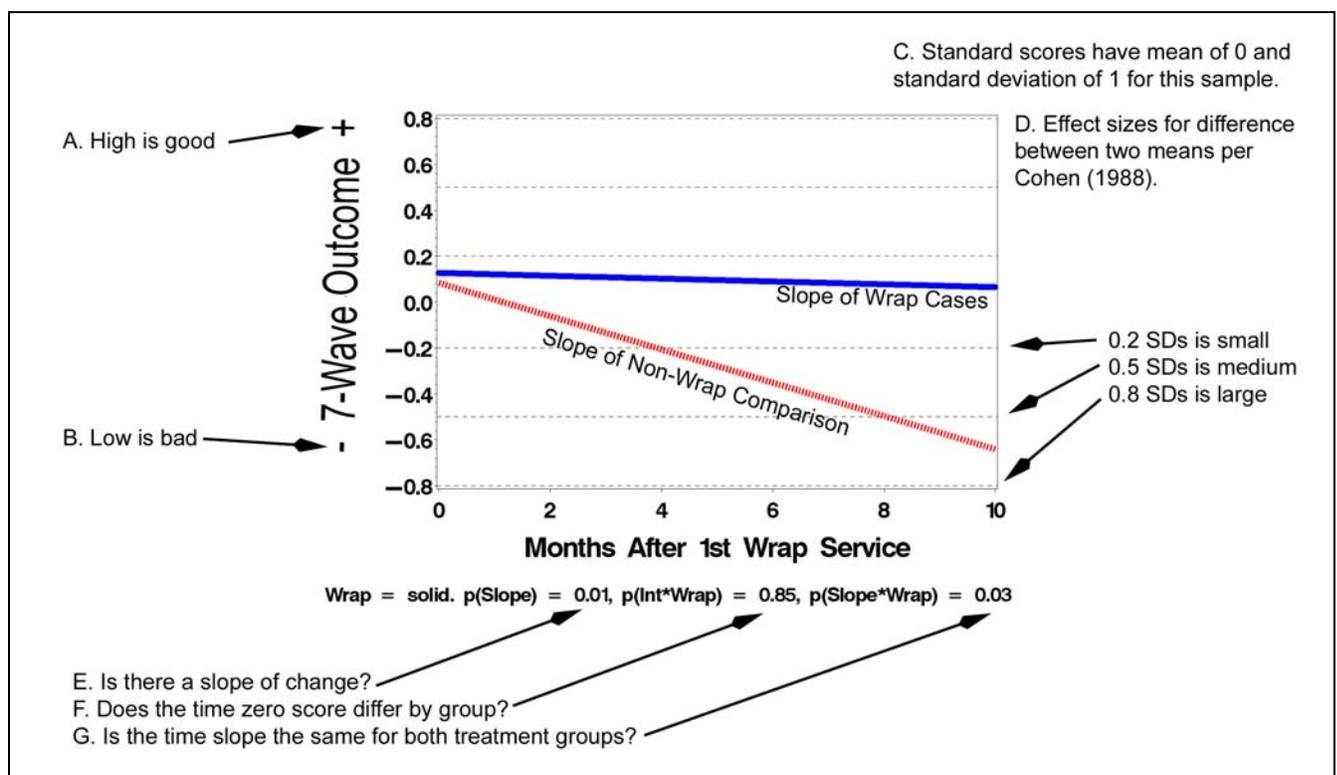
#### 3.2.3.1 Reading Longitudinal Results

Some results are presented in longitudinal graphs because they show outcomes more directly than tables of parameters would. **Figure 31** shows a generalized model of the longitudinal graphs with explanatory text. The outcome is marked to show whether high is good or high is bad (Notes A and B in the chart). To make results of the various indices comparable, charts use standard scores with the same units for every outcome (Note C). These standard scores show approximate effect sizes based on Cohen's norms (1988) (Note D), marked by horizontal lines on the chart at 0.2, 0.5, and 0.8 standard deviations.

The significance of the most important longitudinal parameters appears at the base of the chart (Notes E, F, and G). These parameters describe the results:

- The first question (E) asks whether the outcome variable changes over time<sup>9</sup>. In the example, it does ( $p = .01$ ).
- The second question (F) asks whether the Wraparound and TAU Comparison Groups start out equal. In the example, they do ( $p = .85$ ).
- The final and often most important question asks whether the slopes of change differ between the Wraparound and TAU Comparison Groups. In the example, they do ( $p = .03$ ). The change in slope is important because it is the measure of change over time for the two groups. The measure of the difference in slope is important because this is the measure of the difference between the trajectories of the two groups.

**Figure 31. Reading Results of the Longitudinal Model**



Taken together, the parameters tell a story:

- Wraparound and TAU Comparison participants started at the same level.
- The TAU Comparison Group decreased.
- This slope for the children in the TAU Comparison Group was different from the level (zero) slope of children in the Wraparound Group.
- The Wraparound Group stayed the same.

<sup>9</sup> Strictly speaking, this parameter is the slope for Group = 0 = the TAU Comparison. Explanations were simplified because strict interpretation of parameters and reference groups may be difficult for readers who are not hands-on statistical analysts.

This graphical presentation makes it possible to see the results of a complex longitudinal analysis in a single chart without referring to tables of parameters.

The figure caption explains the details of the longitudinal outcome chart. The main result appears as a level line of no change for children in the Wraparound Group (represented by a heavy line) and a slope of deterioration for children in the TAU Comparison Group (represented by a dashed line). To determine whether this difference in time slopes is significant, the parameters from **Figure 31** are examined in **Figure 32**.

**Figure 32. Longitudinal Results for Parent-rated Amount of Contact with Provider One**

Effect	Estimate	Std Error	DF	t-test	Prob	Interpretation
1. Intercept (score at time zero)	0.08	0.19	103	0.45	0.65	TAU starts at zero (average)
2. Wrap intercept difference	0.04	0.23	347	0.19	0.85	No group difference at time zero
3. Time slope	-0.07	0.03	90	-2.78	0.01	TAU decreases (slopes down)
4. Group*time	0.07	0.03	347	2.13	0.03	Wrap slope differs from TAU

Results from random coefficients hierarchical longitudinal model (HLM) (SAS PROC MIXED, linear model with random intercepts and slopes).

The parameters in **Figure 32** tell the same story as the annotated chart in **Figure 31**. Generally, readers have found the charts easier to interpret than the tables, so the main longitudinal results will be presented in this manner.

### 3.2.3.2 Choosing a Longitudinal Model: Exploratory Mixture Model

Many different longitudinal models are conceivable, so it may seem difficult to know if the model used is the right one. First, longitudinal mixture models were run without assumptions about the typical trajectory children would show during the study. By observing the most common trajectories, one can be sure that the longitudinal outcome model is consistent with the timelines most common in the sample.

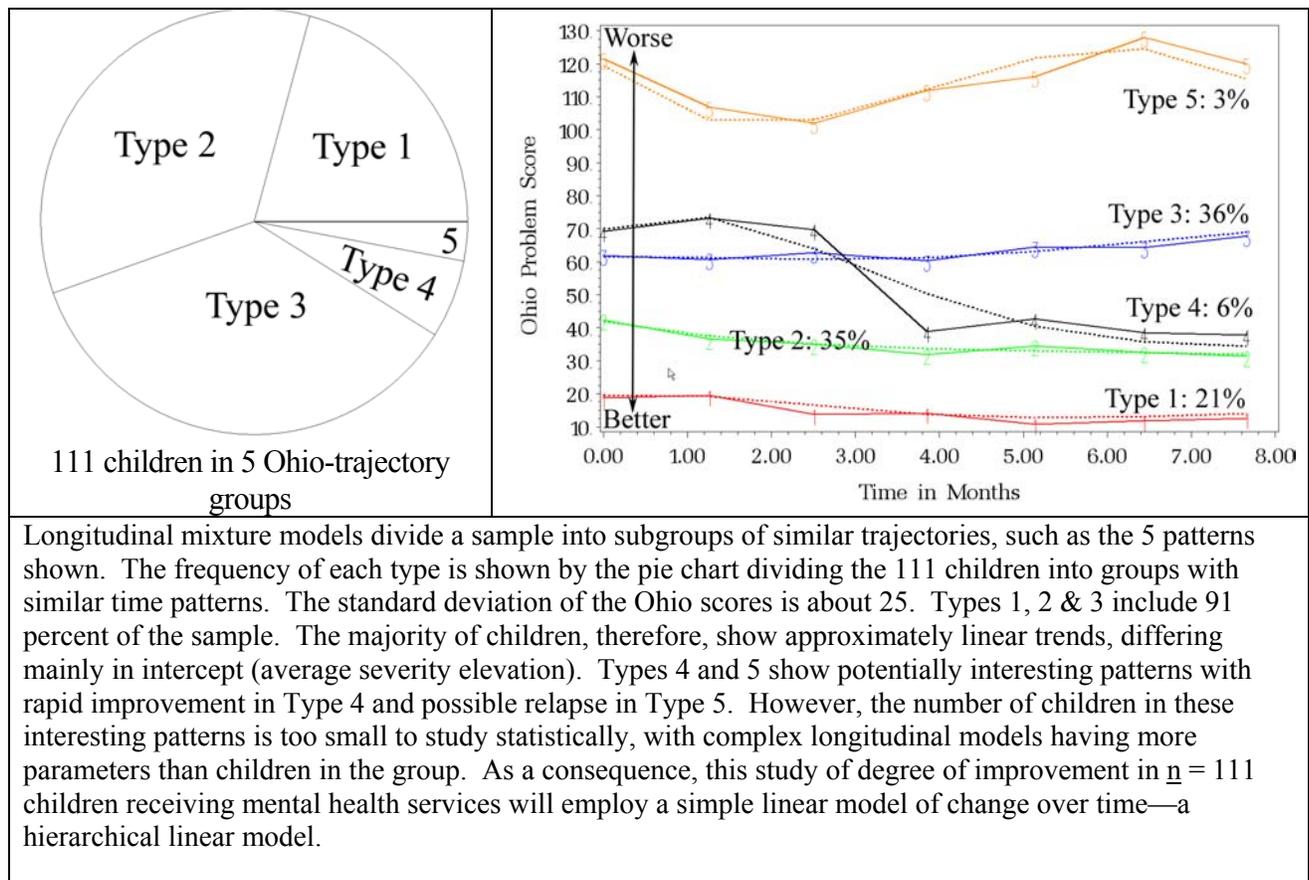
With seven repeated measurements, there are a large number of possible trajectories that children might follow during the study. This raises a question: What form of longitudinal outcome should we use in the Wraparound Evaluation? There are many possible choices. For example, initially in the Fort Bragg Demonstration (Bickman et al., 1995), which had four waves, a linear model of change over time was used (Hamner, Lambert, & Bickman, 1997). Later, a quadratic model was used to model curved change over time (Bickman, Lambert, Andrade, & Penaloza, 2000). In the latest Fort Bragg research, more complex piecewise linear models (PWLM) (Andrade, Lambert, & Bickman, 2000; Lambert, Wahler, Andrade, & Bickman, 2001) were best able to explain children's mental health trajectories.

In the Wraparound study, should we use a simple linear model, or seek a more complex, better-fitting model of change over time? To answer this, the present sample of 111 children was sorted into a few common time patterns using a longitudinal mixture model (Nagin & Tremblay, 1999; Nagin, 1999; Nagin & Tremblay, 2001). This model, still under development at Carnegie Mellon (Jones, Nagin, & Roeder, in press), is designed to sort children's trajectories of change over time into similar groups. It resembles a cluster analysis of cases, which sorts cases into common types based on their characteristics. In the mixture model, cases are clustered based on their patterns of change over time.

3.2.3.2.1 Method

The “model finding” longitudinal mixture model was run using several steps. The sample included 111 children, each with up to 7 repeated measurements on the Ohio Mental Health Problems Scale. Experimental longitudinal mixture model software (SAS PROC TRAJ) sorted response patterns for cases into clusters of similar time curves. In this exploratory analysis, a model was chosen to capture any complex curves that might occur using a combination of linear (time,  $t$ ), quadratic ( $t^2$ ), cubic ( $t^3$ ), and quartic ( $t^4$ ) trends over time. Scores were Ohio Scale weighted problem counts at a given time<sup>10</sup>. The model ignored treatment condition, treating all 111 cases as one group. Results appear in **Figure 33**, and a more detailed explanation appears in the figure footer.

**Figure 33. Longitudinal Mixture Model for Mental Health Problems of 111 Children**



Because 91 percent of the 111 children have a simple linear trajectory, rather than a complex curve hierarchical linear models were used in the outcome analyses instead of more complex time patterns.

3.2.4 Client Outcomes

Having reviewed the sample description and the longitudinal measurement model, specific results can now be examined. Treatment process outcomes will be covered first, followed by the main mental health results, the child and family outcomes.

<sup>10</sup> PROC TRAJ does not require the same number or interval of measurements over time for all subjects.

### 3.2.4.1 Treatment Process Outcomes

This section of the results describes certain processes or types of care that were supposed to be different if the Demonstration was successfully implemented. The parent reported data is covered first; these data were collected on a monthly basis. Data from the Health Care Services Record (HCSR) data set of paid claims will then be presented. The first issue to be examined is if there were differences in hospitalization during the Demonstration. It was expected that the Wraparound Group would experience fewer sessions of residential treatment and inpatient hospitalization, as one of the aims of the Demonstration was to reduce out-of-home care.

#### 3.2.4.1.1 Parent-reported Hospitalization

In this analysis, the outcome was hospitalization (no or yes) during the six concurrent time periods after the baseline interview. Because this outcome was not normally distributed, a binary longitudinal model was run with generalized estimating equations (GEE). This model attempts to explain the probability of hospitalization as a function of time and treatment condition (either Wraparound Group or Comparison Group). The GEE and hierarchical longitudinal model (HLM) are close cousins. Just as the longitudinal HLM is a time-based regression that models the lack of independence among observations using SAS PROC MIXED, the binary GEE is like a logistic regression that models within-subject effects using SAS PROC GENMOD.

While a binary-outcome GEE and continuous-outcome HLM differ in the details of their statistical assumptions, the results can be understood in a very similar way through coefficients and charts of model-based scores. Results for hospitalization appear in **Figure 34**.

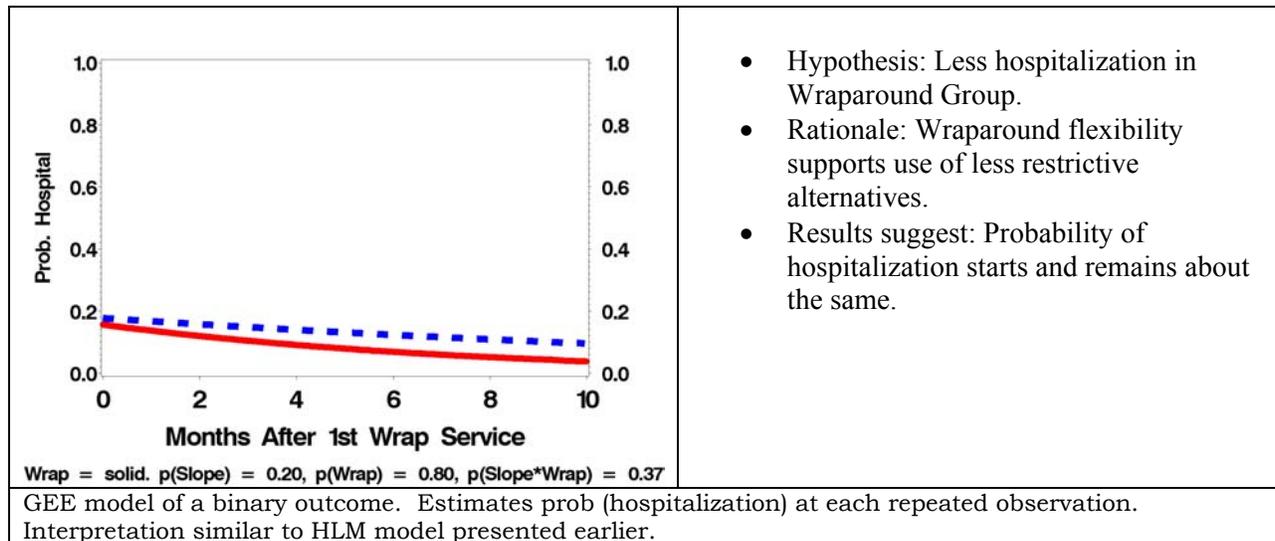
**Figure 34. Longitudinal GEE Analysis of Parent-reported Hospitalization During Wraparound**

Parameter	Est.	Error	Prob	Interpretation of parameter
Time	-0.07	0.56	0.20	Hospitalization decreased by time (NS)
Demonstration	-0.15	0.59	0.80	Hospitalization lower in Wrap at time zero (NS)
Time*Demonstration	-0.08	0.09	0.37	Less decrease in Demonstration (NS)

Note: GEE provide longitudinal models for outcomes that are not normal, such as binary outcomes (hospitalized, not hospitalized) or counts (Poisson distributed outcomes with severe skew and a mode of zero). Unlike logistic regression, GEE models “know” that observations are nonindependently nested in subjects over time.

Since the crucial Time\*Demonstration slope favors the TAU Comparison Group, we cannot attribute the lack of superiority in the Demonstration to statistical power alone. These results offer no support for the hypothesis that wraparound treatment decreased subsequent hospitalization (as measured by parent report).

As seen in **Figure 35**, there is a gradual decline in hospitalization in both the Wraparound and TAU Comparison Groups.

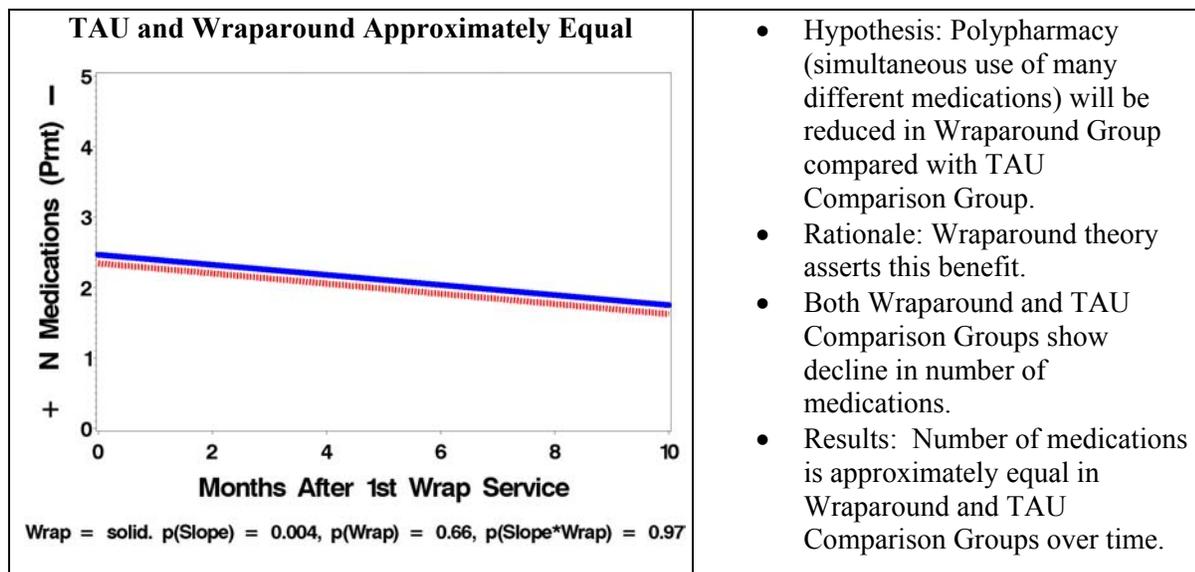
**Figure 35. Probability of Hospitalization Over Time**

**Figure 35** shows an uneven decline in rates of hospitalization in both conditions, with children in the TAU Comparison Group reaching zero earlier. (This between-group difference is not statistically significant.)

This decline in hospitalization could be a result of effective treatment, but at present, it is not known if ordinary mental health treatment in community conditions is effective (Catron, Harris, & Weiss, 1998; Catron & Weiss, 1994; Weisz, Weiss, & Donenberg, 1992; Weisz, Weiss, Han, Granger, & et al., 1995). If it turns out that treatment is not effective, these results may follow from the increased rates of referral at the time when children's symptoms are at their worst. Later, when symptoms are no longer at their worst, hospitalization becomes less likely. This explanation for seemingly spontaneous remission with ineffective treatment has been called the "clock setting cure" (Lambert & Bickman, 2000), and it stands as a possible explanation for the Fort Bragg Demonstration early decrease of problem scores followed by relapse between 1.5 years and 3 years after admission to treatment.

#### 3.2.4.1.2 Parent-reported Polypharmacy

One of the goals of the Wraparound Demonstration was reducing polypharmacy, or the use of multiple psychiatric medications—all of which have potentially harmful side effects. Polypharmacy was defined as the number of distinct medications a child took during each month. Results appear in **Figure 36**.

**Figure 36. Seven-wave Longitudinal Results for Several Medications**

This analysis asked whether the Wraparound Demonstration was successful in reducing the number of medications<sup>11</sup> that children received. Results suggest that the number of medications declined significantly—about equally for the Wraparound and TAU Comparison Groups.

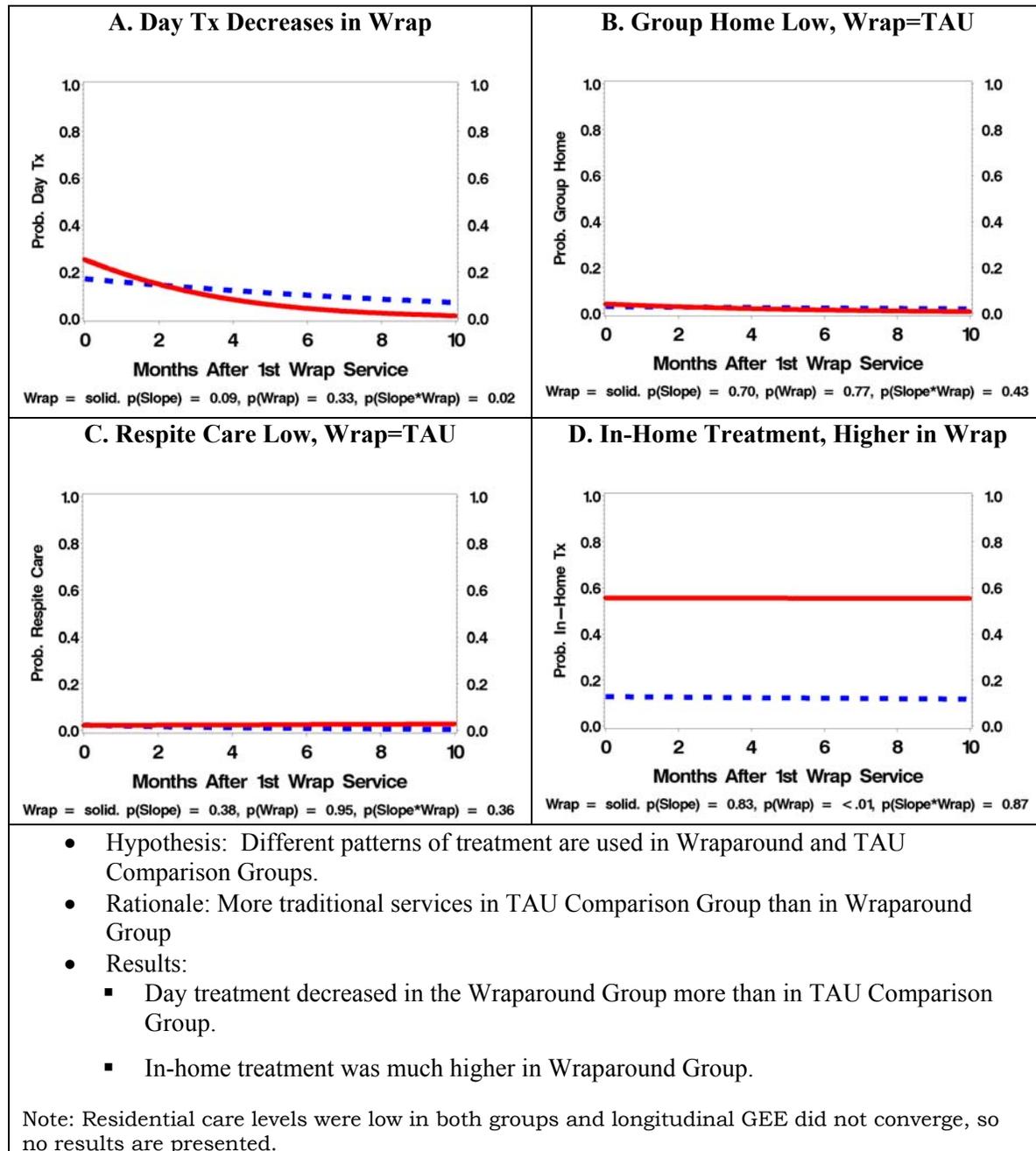
#### 3.2.4.1.3 Parent-reported Service Use

This Evaluation includes two sources of service use data: parent report and billing records. Parent reports appear in this section, and billing record results will appear later in the cost and utilization section.

In this study “wraparound” can be construed as an intent-to-treat, so it is important to determine whether Wraparound cases really received more of the services that wraparound theory prescribes. **Figure 37** presents the amount of day treatment, group home, respite care, and in-home treatment the Wraparound and TAU Comparison Groups received during the treatment period.

<sup>11</sup> DOD framed this question based on the assumption that a smaller number of distinct medications was a desirable goal.

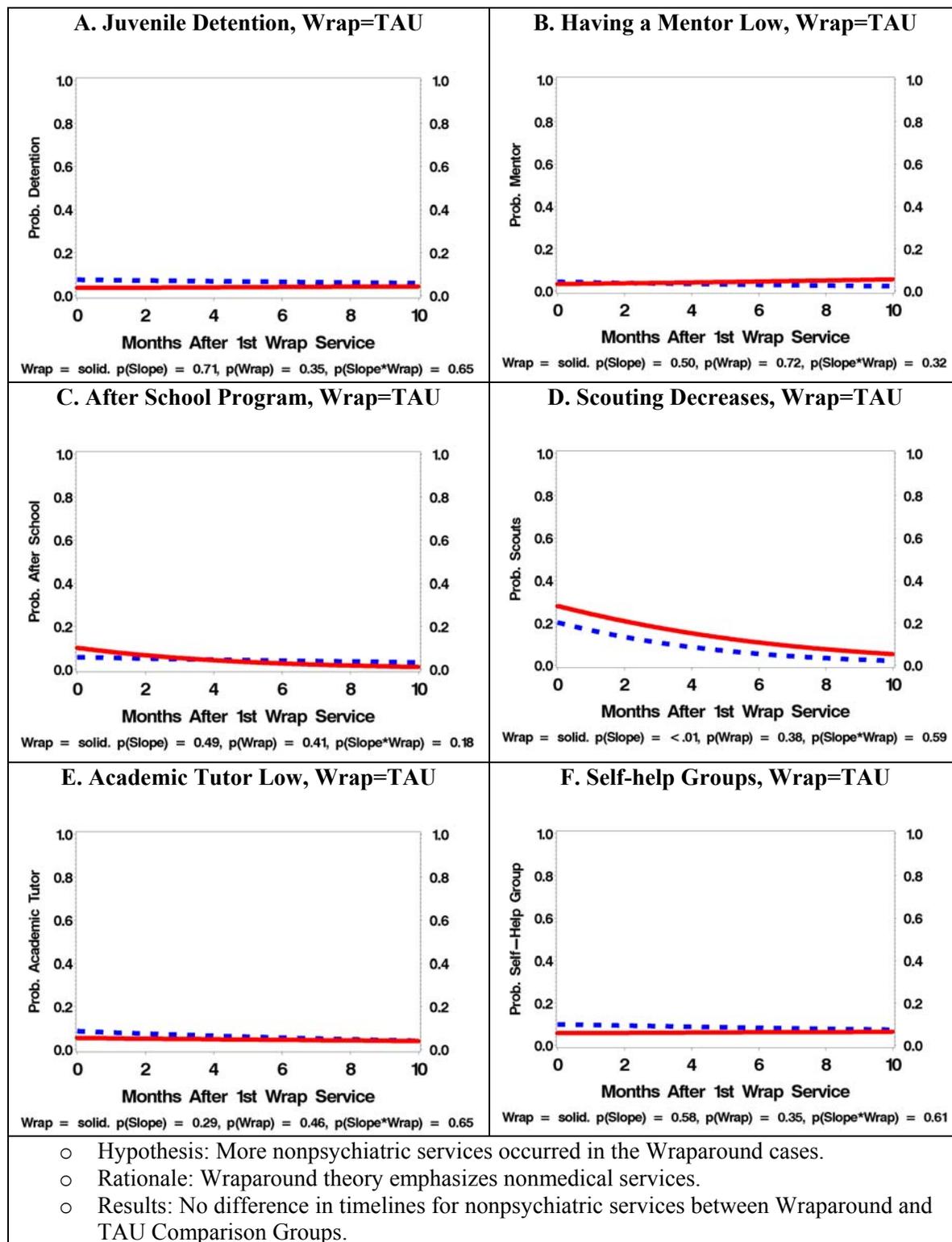
**Figure 37. Comparison of Psychiatric Services During Wraparound Per Parent Report**



3.2.4.1.4 Parent-reported Program Participation

Parent reports of nonpsychiatric services were compared to determine how much impact Wraparound had on nontraditional services. These services included detention, after school programs, Scouting, mentoring programs, self-help groups, and academic tutors.

**Figure 38. Non-psychiatric Program Participation by Parent Report**



### 3.2.4.1.5 Parent-reported Alliance Ratings

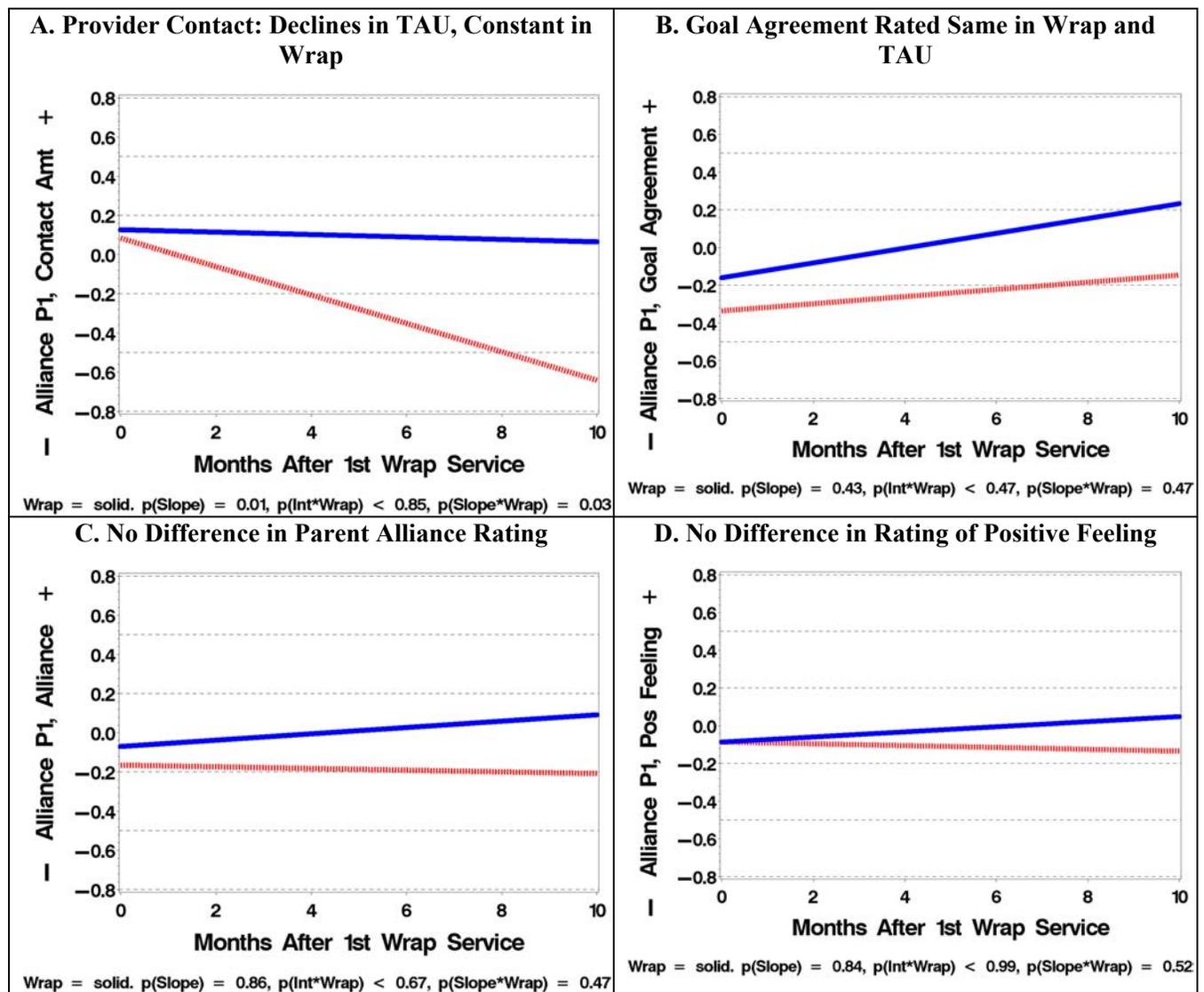
The following results concern parent ratings of therapeutic alliance, a term that refers to a constructive collaboration between clients and therapists. The Wraparound hypothesis proposes that alliance ratings should improve in the Wraparound Group. The results in **Figure 39** concern parents' feelings of alliance with the primary therapist, not the case manager<sup>12</sup>.

**Figure 39. Longitudinal Parent Reports Used to Evaluate Parent-Helper Relationship**

Outcome	Interpretation	<u>n</u>	% Com- plete	Mean	Std Dev	Min.	Max.
1. Alliance Provider #1, Contact Amount	How much contact with Provider #1	580	75%	15.0	4.4	4	20
2. Alliance Provider #1, Goal Agreement	How much goal agreement with Provider #1	502	65%	58.6	10.5	13	72
3. Alliance Provider #1, Parent/Helper Alliance	Alliance rating with Provider #1	557	72%	72.2	10.0	31	84
4. Alliance Provider #1, Child/Helper Positive Feeling	Positive feelings about Provider #1	544	70%	20.2	5.4	7	28
5. SPIFY, Wraparound Measure, Parent	How "wrapped" is treatment per SPIFY	430	55%	87.4	18.1	28	115

<sup>12</sup> Case manager alliance could not be compared because TAU Comparison cases, in general, had no case managers.

**Figure 40. Seven-wave Longitudinal Results for Parent-reported Therapeutic Alliance**



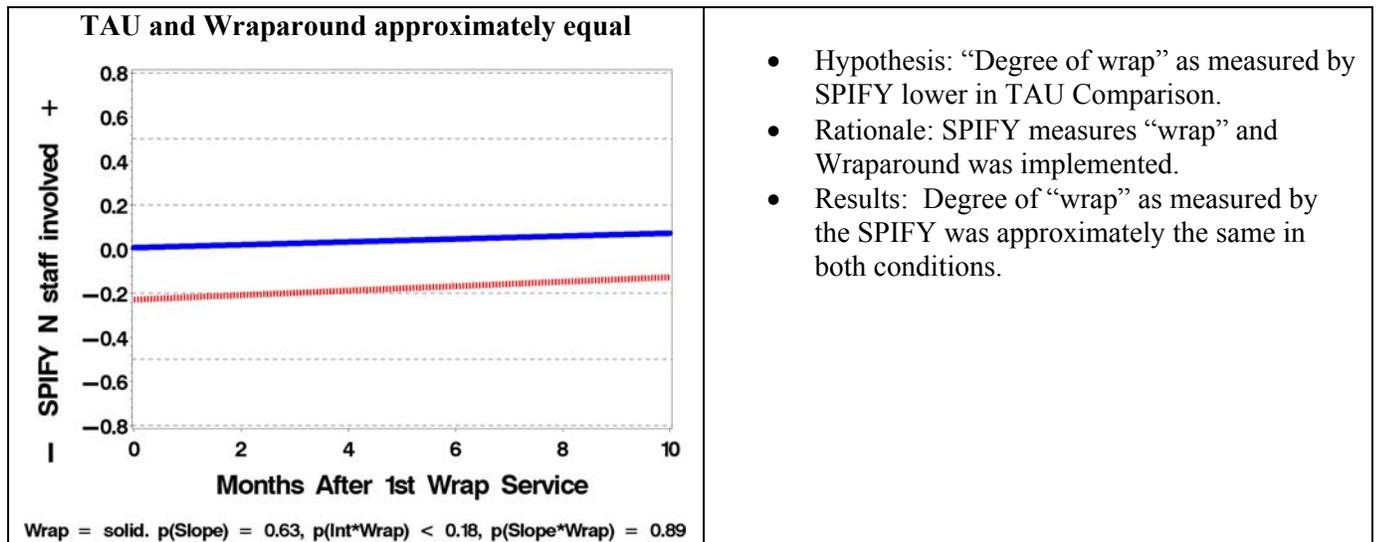
- Hypothesis: Better alliance in Wraparound Group than in TAU comparison Group.
- Rationale: More flexible services promote therapeutic relationship.
- Results suggest that
  - Amount of contact with the family’s number one mental health provider declines in the TAU Comparison Group only.
  - Alliance ratings are approximately equal in Wraparound and TAU Comparison Groups.

An analysis of potency of treatment had been planned to determine if therapeutic strength of services, beyond the amount of services, impacted outcomes. It was theorized that if wraparound services were more potent, then this should provide a more sensitive measure of the demonstration’s effectiveness. Therapeutic alliance was to be used as the measure of potency. However, since there were no significant differences between the Wraparound and TAU Comparison Groups in alliance, that analysis was not conducted.

3.2.4.1.6 *Perceived Wraparound Implementation*

An important question about implementation is whether the intent-to-treat in wraparound really leads to the conditions that wraparound theory prescribes. A measurement scale for “degree of wrap” exists in the SPIFY (described in Section 3.1.2.3). This instrument is not a well-standardized or thoroughly researched instrument, but it was preferable to use the only instrument available rather than neglect the degree of “wrap” perceived by parents in the study.

**Figure 41. Seven-wave Longitudinal Results for SPIFY Measure of Wraparound**



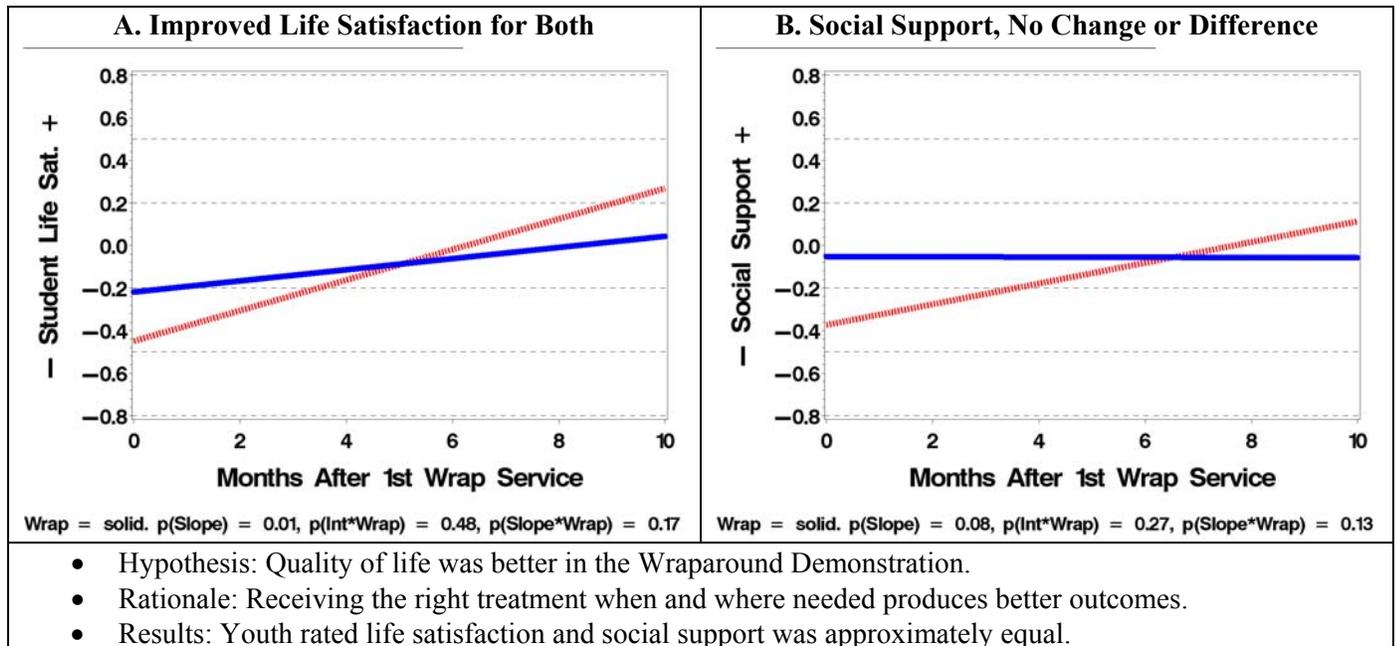
- Hypothesis: “Degree of wrap” as measured by SPIFY lower in TAU Comparison.
- Rationale: SPIFY measures “wrap” and Wraparound was implemented.
- Results: Degree of “wrap” as measured by the SPIFY was approximately the same in both conditions.

The Wraparound hypothesis suggests that relationships between parents and clinicians for children who receive wraparound services will be enhanced.

3.2.4.1.7 *Youth-reported Treatment Process*

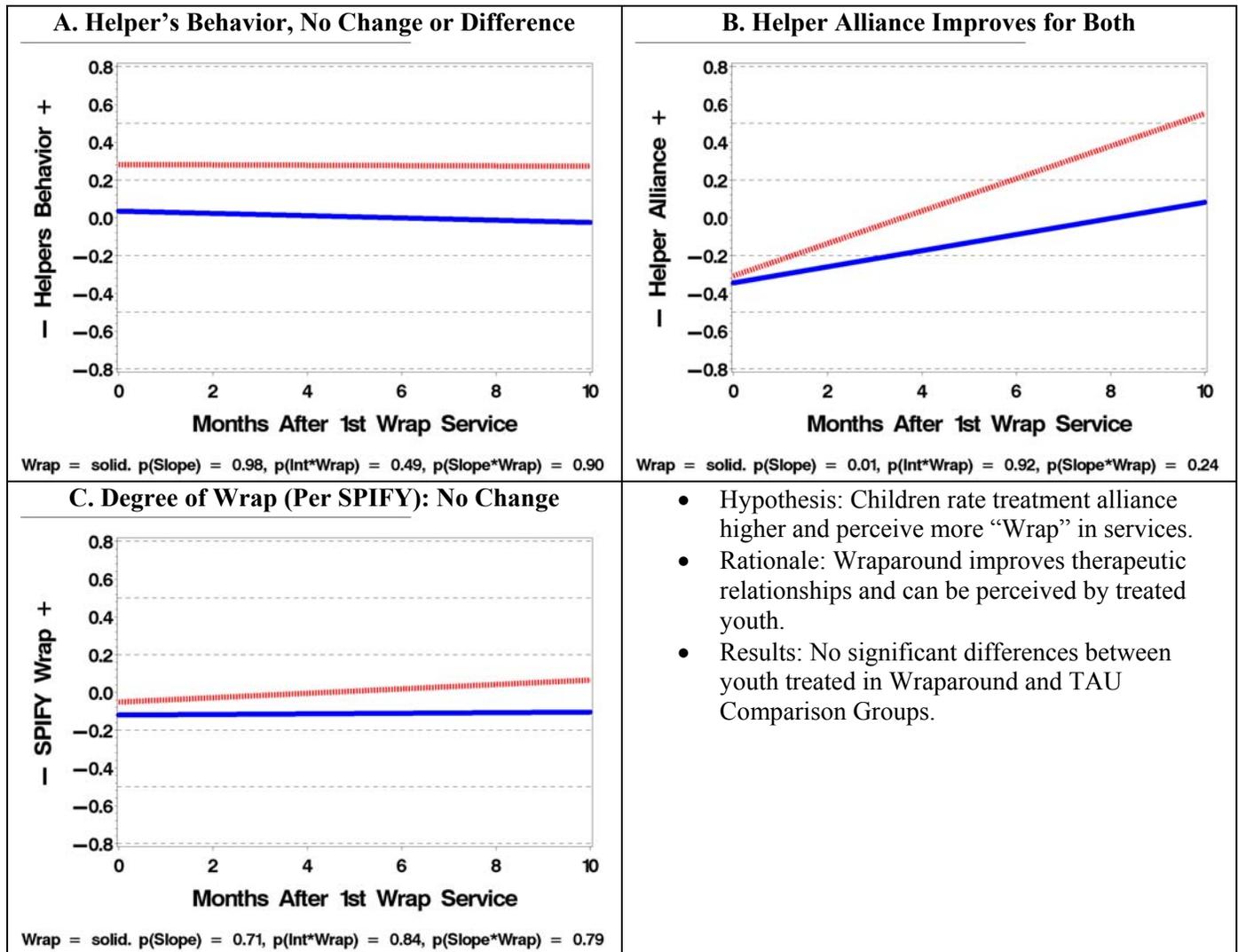
In addition to parent reports, child reports were gathered in the research. This information is valuable, but since the number of children was only 58, this leaves these analyses somewhat statistically underpowered. Also, researchers in the field expect adult reports and child reports to differ—a result that is not surprising given the different viewpoints of children and their parents.

**Figure 42. Quality of Life Reported by 58 Children**



Therapeutic alliance is an important indicator of how the child views his or her working relationship with the therapist. In this Evaluation, wraparound was hypothesized as encouraging a more positive therapeutic relationship, although some would argue that wraparound theory is not very specific on the rationale for this effect.

**Figure 43. Quality of Life and Helper Alliance Reported by 58 Children**



3.2.4.1.8 Youth-reported Helping Behavior

Another way to examine treatment process outcomes from the youth’s point of view is through questionnaires regarding children’s perceptions of the process of treatment. Children were asked about the therapeutic behavior of their number one provider with a 30-item Helping Behavior Survey. Questions concerned 30 possible treatment behaviors, such as “worked on art projects with you,” “challenged you on negative things you say to yourself,” and “encouraged you to examine the good and bad things that result from your behavior.” Helping behavior is important because the child’s mental health outcomes can only be changed through the use of behaviors that impact the child directly (Bickman, 1999).

These 30 items were asked up to seven times (when children participated in all possible interviews). An average of 5.4 reports were available from 55 children. Results will be presented briefly in light of the well-known weaknesses of having only 1.8 subjects per variable.

Only one of the 30 helping behavior items showed a significant ( $p < .007$ ) difference between Wraparound and TAU Comparison children. However, when this b-level was Bonferroni-corrected by the number of statistical tests, it was no longer significant ( $.007*30 = 0.21 > .05$ ).

### 3.2.4.2 Mental Health Outcomes

This section will review the effect of wraparound treatment on the mental health of children. Multiple methods were used to investigate the impact of wraparound on the children's mental health including parent- and youth-reported measures, scores on behavioral checklists, comparison with other evaluations, reports of sentinel events, service needs reported by parents, and other outcomes measures.

#### 3.2.4.2.1 Main Outcome Measures

There were three longitudinal outcomes, each measured on seven occasions to determine the outcome of the Wraparound Demonstration (see **Figure 44**). These outcomes, such as Ohio Scale scores, evaluated child symptoms and functioning, the "bottom line" in any study of children's mental health services.

**Figure 44. Longitudinal Parent Reports Used to Evaluate Wraparound Treatment**

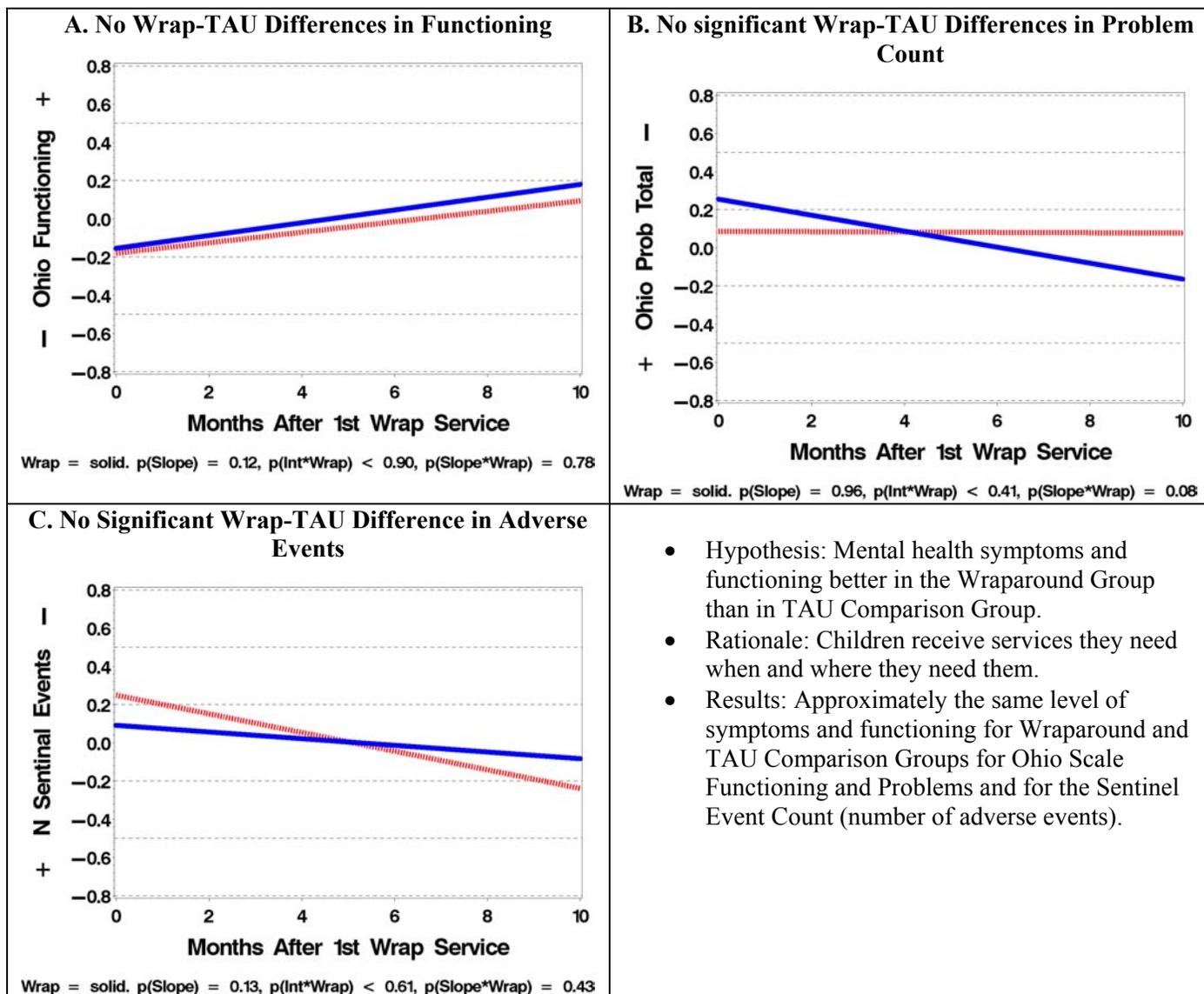
Outcome	Interpretation	<u>n</u>	% Com- plete	Mean	Std Dev	Min.	Max.
1. <u>n</u> Sentinel Events <sup>a</sup>	How many indicators of serious disturbance	58	52%	1.24	1.26	0	6
2. Ohio Scale Problem Total (1 month)	How many behavioral or psychological problems	655	84%	43.3	25.5	0	141
3. Ohio Scale Functioning	Is the child impaired or functioning well	653	84%	39.8	16.8	6	80

<sup>a</sup> Sentinel events added to study design during baseline data collection.

#### 3.2.4.2.2 Parent-reported Mental Health Outcomes

The next result is arguably the most important result of the Evaluation. As shown in the lower right of **Figure 45**, the study asks whether mental health outcomes are better for children treated in the Wraparound Group.

**Figure 45. Parent-reported Seven-wave Longitudinal Results for Children’s Mental Health**



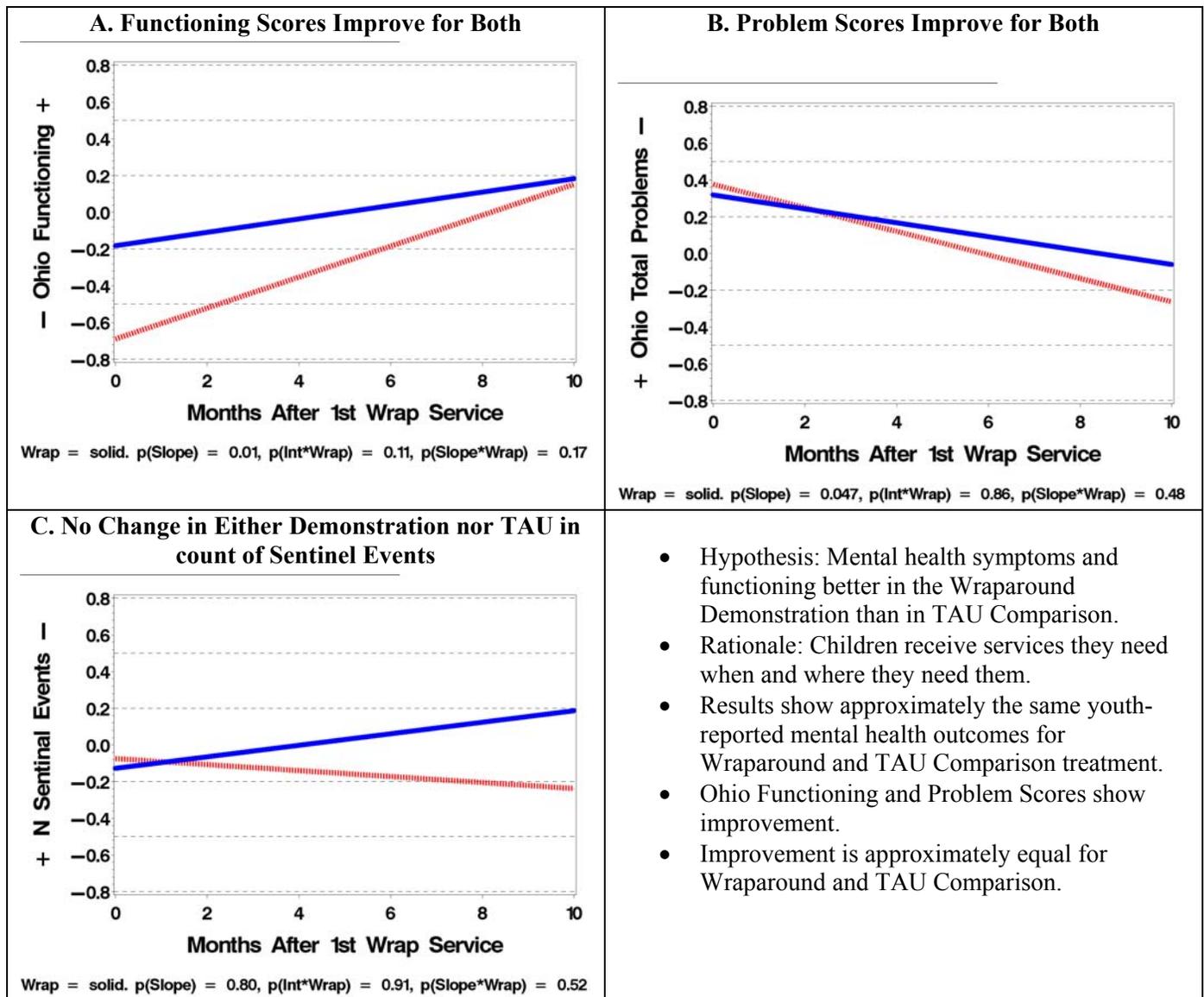
Results in **Figure 45** suggest that mental health outcomes were quite similar in the Wraparound and TAU Comparison Groups. According to the hypothesis, we expect the TAU Comparison model line (dashed) to start about equal with the Wraparound model line (solid), and during the months in wraparound treatment, children in Wraparound should slope more steeply in the desired direction (fewer problems, better functioning, fewer sentinel events). Longitudinal tests of significance at the base of each chart suggest that the differences between the Wraparound and TAU Comparison Groups are as small as differences expected by chance alone. The results presented in **Figure 45**, therefore, offer no support for the outcome hypothesis.

3.2.4.2.3 Youth-reported Mental Health Outcomes

The next result, shown in **Figure 46**, tests the same hypothesis using reports by youth who were 12 years of age or older. This analysis, with N = 41 (Demonstration) and N = 17 (TAU), may be somewhat underpowered; the analysis is only sensitive enough to detect medium to large differences. Results

resemble those reported for parents. That is, there were no differences between youth treated in the Wraparound Group and those treated in the TAU Comparison Group.

**Figure 46. Mental Health Outcomes Reported by 58 Children**



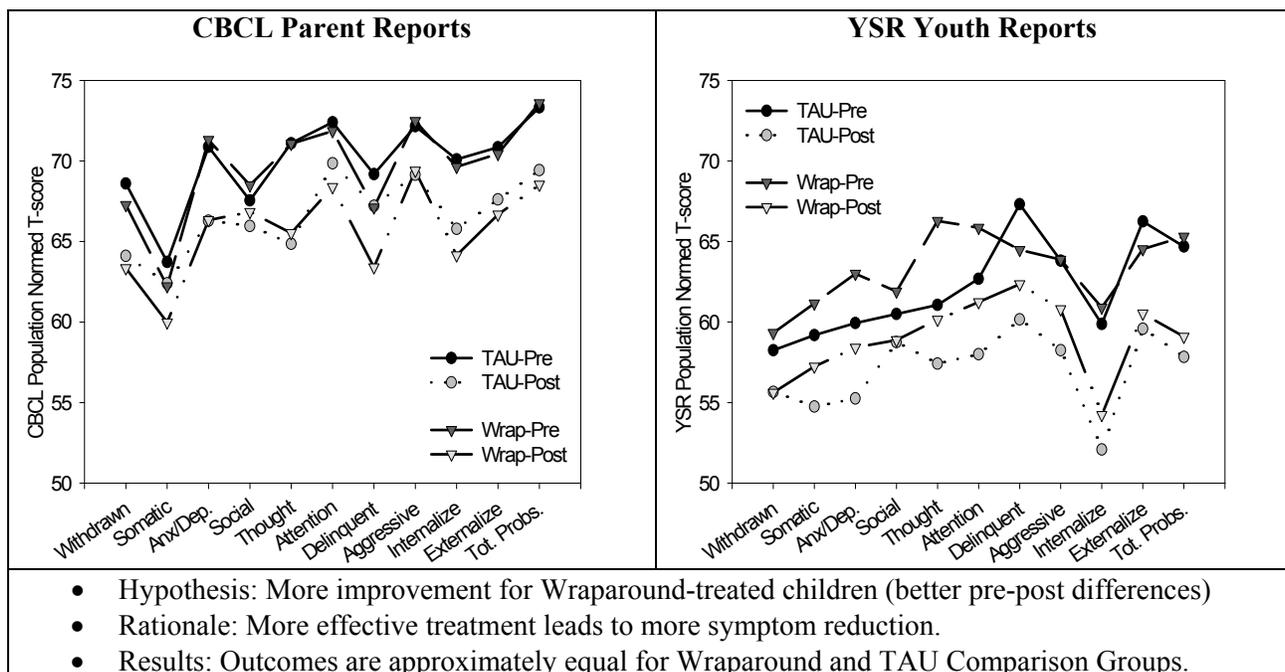
3.2.4.2.4 CBCL-YSR Mental Health Outcomes

The mental health outcomes results presented so far demonstrate the strength of the longitudinal design. The Achenbach behavior checklists—the Child Behavior Check List (CBCL) and Youth Self-Report (YSR)—are well researched and widely used to evaluate mental health and behavior problems in children and youth. In this Evaluation, they were administered only twice (at 6-month intervals), rather than in the statistically more powerful seven-wave longitudinal design, since the checklists are not recommended for repeated administration in less than 6 months. The CBCL and YSR provide narrow-band problem scores (“Withdrawn” to “Aggressive” in **Figure 47**), two wide-band scores (Internalizing and Externalizing Problem scores), and a total score (“Total Problems”). Scores in the figure are population standard scores, which have a mean of 50 and standard deviation of 10 in the general population of children in

school. Thus, scores in the 50s are normal, and scores 65 or higher are typical of clinical samples of children in treatment. The mean CBCL Total Problem Score (T = 74) for this sample is somewhat higher than scores in whole-clinic samples, such as the Fort Bragg Demonstration, where the CBCL Total Problem T was 65 (Bickman et al, 1995, p. 45, Table 3.4).

CBCL-YSR scores often are presented as clinical profiles, showing a child’s scores on all scales. **Figure 47** shows pre-post mean scores for Wraparound and TAU Comparison children, producing a total of 4 profiles for the CBCL and 4 for the YSR. As usual, when comparing parent and youth reports, parent reports (CBCL, left figure) are more pathological than youth self-reports (YSR, right figure). In order to interpret the figure and determine which changes are reportable results, a repeated measures analysis of variance on each of the CBCL scores was conducted.

**Figure 47. CBCL and YSR Scores**



Significance tests for the repeated measures analyses of variance appear in **Figure 48**. The analysis answers three questions:

- Were Wraparound and TAU Comparison means equal at the first interview?
- Did scores change over time for the whole sample?
- Was there more average change in the Wraparound Group or TAU Comparison Group?

In **Figure 48**, numbers less than 0.05 indicate significant results. As usual, differences in the figure are reported only when the significance test indicates they are not due to chance.

The probabilities in columns one and four suggest that the Wraparound and TAU Comparison Groups were well matched, since there are no significant ( $p < .05$ ) differences between their CBCL or YSR scores in the first interview. The generally significant differences in columns two and five suggested that the

average child improved on most CBCL-YSR scales, as shown by statistical significance in **Figure 48** and lower post-scores in **Figure 47**.

If the pre-post change were greater for children in Wraparound, we would see significant probabilities in columns 3 and 6. The lack of significance in columns three and six suggests that change was about equal for children in Wraparound and TAU Comparison.

**Figure 48. Probabilities that CBCL or YSR Differences Were Due to Chance**

CBCL Scale	CBCL (Parent report)			YSR (Youth Self-report)		
	1. Prob	2. Prob	3. Prob	4. Prob	5. Prob	6. Prob
	Intake	Time	GroupTime	Intake	Time	GroupTime
Withdrawn	0.42	<.01	0.58	0.67	0.14	0.53
Somatic	0.43	0.26	0.81	0.39	0.02	0.69
Anx/Dep.	0.86	<.01	0.72	0.27	0.04	0.88
Social	0.67	0.38	0.44	0.67	0.14	0.74
Thought	0.99	<.0001	0.80	0.07	0.02	0.50
Attention	0.81	0.02	0.32	0.28	0.05	0.75
Delinquent	0.23	0.06	0.22	0.38	0.04	0.31
Aggressive	0.89	0.01	0.35	0.98	0.01	0.42
Internalize	0.82	<.01	0.35	0.71	<.01	0.64
Externalize	0.81	<.01	0.30	0.58	0.01	0.58
Tot. Probs.	0.88	<.0001	0.25	0.84	<.01	0.88

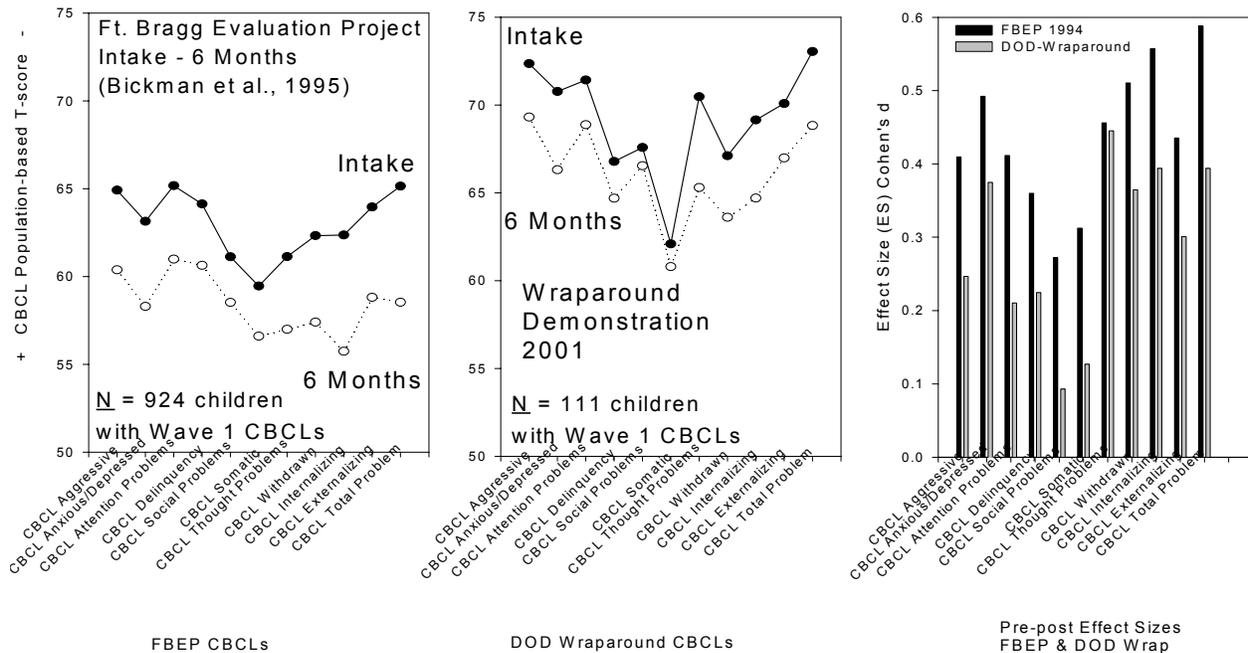
The results were therefore approximately the same for the Wraparound and the TAU Comparison Groups.

- CBCL and YSR levels at intake were similar for Wraparound and TAU Comparison children ( $p > .05$ ).
- CBCL and YSR scores generally declined to lower problem levels (CBCL: 8 of 11; YSR: 9 of 11) on the post measure.
- The decrease in scores was approximately the same ( $p > .05$ ) for Wraparound and TAU Comparison-treated children.

#### 3.2.4.2.5 Comparison with the Fort Bragg Mental Health Demonstration

In this section, we try to gain some perspective by comparing the preceding CBCL-YSR results with those of the Fort Bragg Demonstration (Bickman et al, 1995). While both the present Wraparound Demonstration and the Fort Bragg Demonstration concern treated military dependent children, participants in the Fort Bragg Demonstration represented a “whole clinic” sample, whereas the Wraparound Demonstration concerns treated children with worse than average mental health problems. CBCL scores from the Fort Bragg Demonstration and the present study appear in **Figure 49**.

**Figure 49. Pre-post CBCL Scores at Fort Bragg Demonstration and Wraparound Demonstration**



**Figure 49** presents average CBCL scores at intake and 6 months for both projects. They suggest that CBCL scores in the Wraparound Demonstration were somewhat higher than those in the Fort Bragg Demonstration (Total Problem T-Score was 73 in this Wraparound Demonstration and 65 in the Fort Bragg Demonstration). To see if there were significant differences between the Fort Bragg Demonstration and this Wraparound Demonstration, repeated measures analyses of variance (ANOVAs) were run on each CBCL score. This time the grouping category was “Site,” Fort Bragg Demonstration-Wraparound, rather than Wraparound-TAU Comparison.

**Figure 50. CBCL Differences Between Fort Bragg Demonstration and Wraparound Demonstration**

CBCL Scale	1. Site		2. Time		3. Site * Time	
	F Value	Prob	F Value	Prob	F Value	Prob
1. Aggression	243.1	<.0001	52.2	<.0001	2.1	0.15
2. Anxious/Depressed	246.9	<.0001	76.8	<.0001	0.1	0.71
3. Attention	273.9	<.0001	48.1	<.0001	2.9	0.09
4. Delinquency	79.9	<.0001	35.3	<.0001	2.2	0.14
5. Social	314.9	<.0001	16.5	<.0001	3.0	0.08
6. Somatic	67.2	<.0001	16.9	<.0001	2.4	0.12
7. Thought	312.4	<.0001	77.4	<.0001	0.9	0.33
8. Withdrawal	147.1	<.0001	66.2	<.0001	1.9	0.17
9. External						
Subtotal	203.7	<.0001	63.0	<.0001	3.9	0.049
10. Internal Subtotal	208.8	<.0001	85.9	<.0001	3.3	0.07
11. Problem Total	319.2	<.0001	103.6	<.0001	5.1	0.02
Overall MANOVA	49.17	<.0001	12.39	<.0001	1.57	0.10

Note: Significance effects from repeated measures MANOVA. Effects answer three questions:

1. Site: Were overall mean scores for the Fort Bragg Program and the Wraparound Demonstration different?
2. Time: Were post-test means different from pretest means at both sites?
3. Site by time: Were mean pre- and post-test changes different at the Fort Bragg Program and the Wraparound Demonstration?
4. For Fort Bragg Program there were 924 children with Wave 1 CBCLs; in the Wraparound Demonstration, there were 111.

Significance tests appear in **Figure 50** for 3 effects of interest:

- CBCL Scores were generally higher in the Wraparound Demonstration project ( $p < .0001$ ).
- In both projects, 6-month post scores were lower than intake scores ( $p < .0001$ ).
- The site differences in pre-post improvement scores were generally not significant<sup>13</sup>.

These results lead to the following conclusions:

- CBCL Behavior Problem scores for children in the present study were more severe than those in the Fort Bragg Demonstration (by about .8 SDs, a large effect), but the change over time was about the same.

#### 3.2.4.2.6 Outcomes Involving Critical Sentinel Events

This section examines the presence or absence of certain “sentinel events,” critical events that suggest a child has serious problems. Some sentinel events did not occur in the research sample of  $n = 111$ , such as

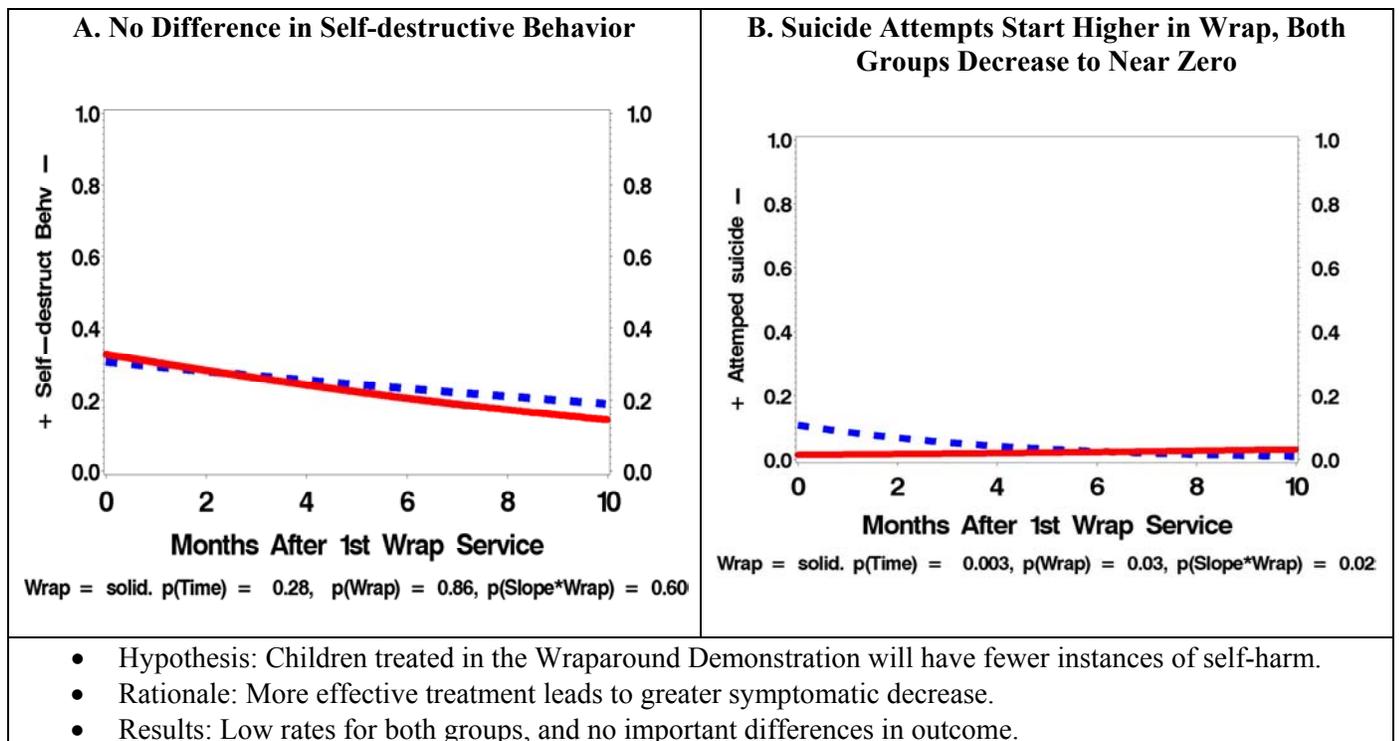
<sup>13</sup> The difference in improvement on Total Problem T-Score appears significant ( $p < .02$ ), but is nonsignificant at the Bonferroni corrected level of  $.05/11 = .005$ . Bonferroni-correcting the total score may be too conservative, since it includes the other scores. The overall MANOVA was nonsignificant ( $p = .10$ ). These hard-to-resolve details were interpreted as “generally not significant.”

completed suicide, completed homicide, or pregnancy. Since these outcomes are 0–1 indicators, we used the longitudinal binary GEE to estimate the probability of each event over time.

As before, the hypothesis states that the Wraparound and TAU Comparison Groups should start out about the same at time zero (when Wraparound treatment started) and that the Wraparound children should then slope more steeply in the desired direction. As usual, the solid line shows model scores for the Wraparound Group and the dashed line shows the model for the TAU Comparison Group.

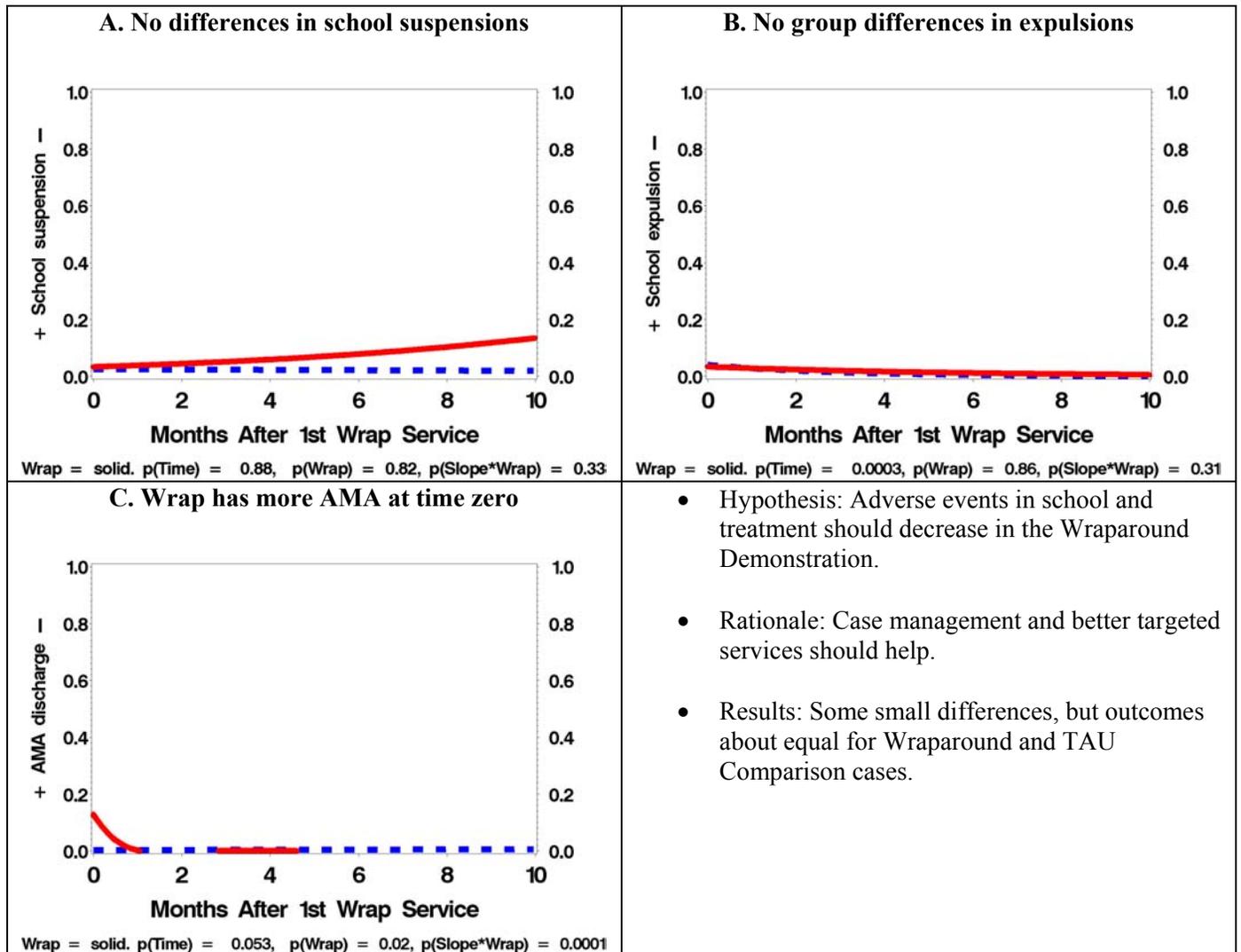
The first group of events concerned self-harm. For self-destructive behavior (such as superficial cuts without suicidal intent) there were no differences between the Wraparound and TAU Comparison Groups. For more serious self-harm, namely suicide attempts, the TAU Comparison Group started somewhat higher and both groups ended at near-zero rates after 10 months. Since this difference occurred at time zero, it is not a clear-cut difference in outcome.

**Figure 51. Sentinel Events Related to Self-harm**



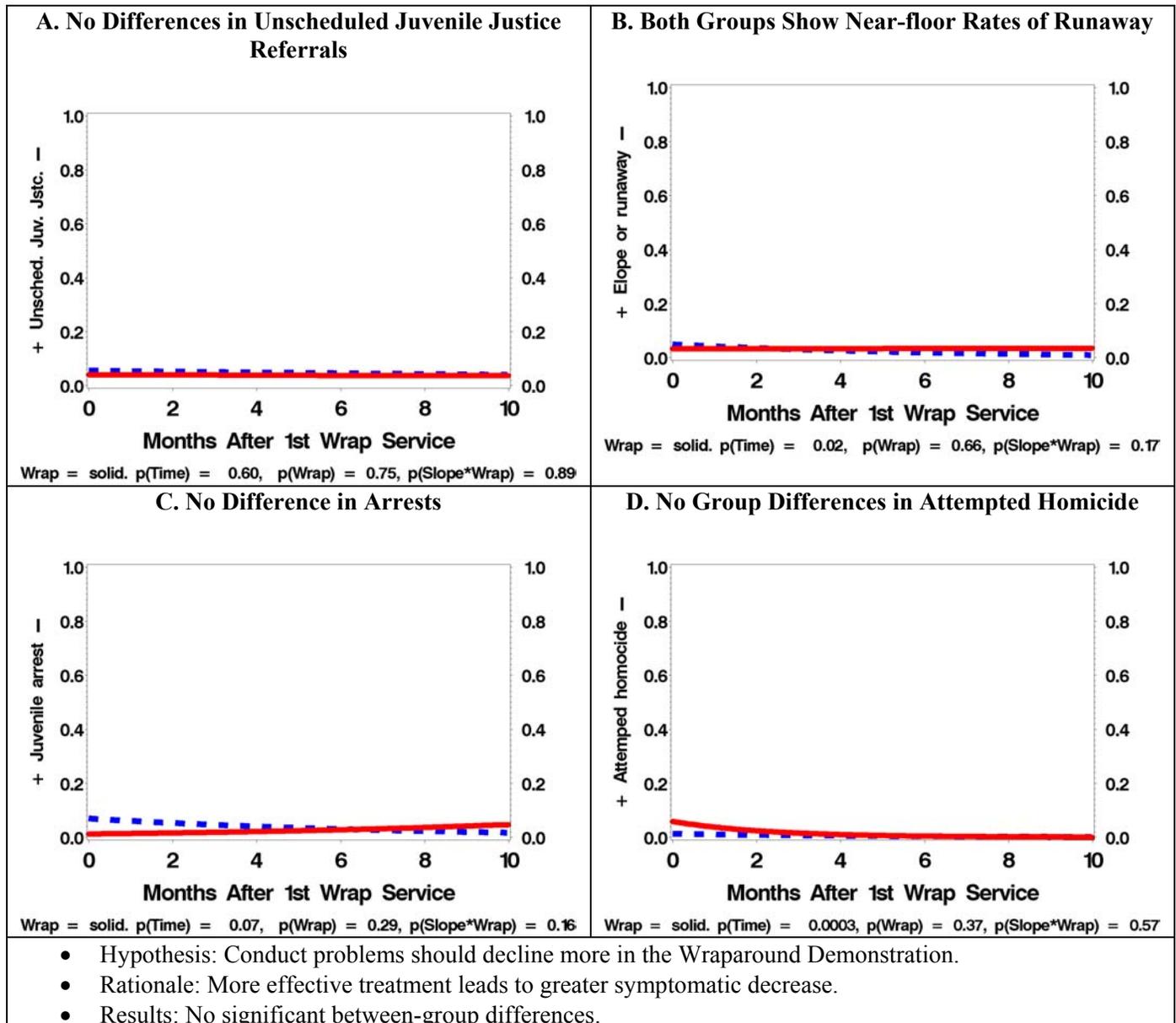
The second group of sentinel events concerned education and treatment, with critical adverse events including suspensions from school, expulsions from school, or treatment termination against medical advice (AMA). For school suspensions and expulsions there were no significant group differences. For AMA discharges, the Wraparound Group started at a slightly higher rate at time zero, after which the rate of AMA terminations for both groups was near zero. While it is possible that this higher rate in the Wraparound Group at time zero is an adverse response to the Wraparound Demonstration, it also may be simply a random mismatch between groups at the time Wraparound treatment started, so it is not reported as a confirmed result.

**Figure 52. School and Hospital Sentinel Events**



The third group of sentinel events concerns criminal conduct and confinement, such as arrest, other unscheduled referrals to juvenile detention, runaway, and attempted homicide. Rates were low for these critical events, and there were no significant differences in outcome between the TAU Comparison and Wraparound Groups.

**Figure 53. Conduct-related Sentinel Events**



3.2.4.2.7 Six-month Service Needs Reported by Parents

In the first and last interviews, each parent gave estimates of how much service they felt their child needed. According to the Wraparound hypothesis, children in the Wraparound should start with the same need for services in the beginning, but demonstrate less need later due to successful treatment.

Based on 10 estimations of need, pretest scores did not differ between groups ( $p > .05$  for all 10). Generally there was no change over time in either group [as shown in the table by  $p(\text{change})$ , the significance of pre-post change]. And, the group by time interaction (last column in **Figure 54**) was nonsignificant in every case.

These results suggest that the need for treatment reported by parents was high, generally around four on a one to five scale, and that it changed little during the study for either group.

**Figure 54. Pre-post Estimates of Need for Child Services**

Parent-reported need for child mental health services	TAU Comparison			Wraparound			P(Group by Time)
	Pre	Post	P(change)	Pre	Post	P(change)	
1. Strong need, direct services for youth	4.5	4.1	0.06	4.5	4.5	1.00	0.06
2. Strong need, children's mental health info	4.1	4.3	0.72	4.4	4.4	0.64	0.91
3. Strong need, personal counseling	4.0	4.3	0.27	3.9	4.1	0.30	0.77
4. Strong need, emotional support	4.4	4.4	0.83	4.2	4.3	0.44	0.78
5. Strong need, respite care for youth	3.4	3.5	0.63	3.3	3.5	0.18	0.82
6. Strong need, service referral for youth	4.1	3.8	0.28	4.2	4.3	0.79	0.23
7. Strong need, parent skills info	3.8	3.8	0.55	3.6	3.9	0.01	0.05
8. Strong need, B-MOD info	4.0	4.2	0.52	4.2	4.2	0.69	0.46
9. Strong need, family crisis counseling	3.7	4.0	0.79	3.8	3.8	0.65	0.98
10. Strong need, financial help info	4.0	4.1	0.40	3.8	3.7	0.81	0.34

Note: Ratings on 1–5 scale, 5 indicating more need

These results lead to the following conclusion:

- Hypothesis: Children in the Wraparound Group should show a decreased need for service after receiving wraparound treatment.
- Rationale: Getting the right treatment when and where needed would lead to a decreased need for further treatment (leading to cost savings, less restriction, etc.).
- Results: Parent-rated need for treatment showed little change in either group.

#### 3.2.4.2.8 Other Mental Health Outcomes

This section will close with reports of remaining mental health outcomes for children and families. Pre-post scores were available for two other outcomes, shown in **Figure 55**:

- Total on the Vanderbilt Functioning Index (VFI) as rated by parent (high bad). Critical adverse behaviors that indicate poor functioning.
- Positive functioning sum (high good). Experimental scale to measure functioning in positive terms.

More detailed reviews of these measures appeared earlier in the Section 3.1. These measures offer additional tests of the Wraparound hypothesis—tests based on the same hypotheses as used for the Ohio Scales or the CBCL—that children's functioning and symptoms would improve more in Wraparound.

**Figure 55. Other Pre- and Post-test Outcomes for Parent Reports**

Measures of Child Functioning	TAU Comparison			Wrap Demonstration			Prob
	pre Mean	post Mean	P (change)	pre Mean	post Mean	P (change)	TAU vs. Wrap p(Group by time)
1. Total on VFI for parent— hi bad	0.39	0.26	<.01	0.35	0.29	<.01	0.11
2. Positive functioning sum— hi good	3.24	3.52	0.53	3.91	3.76	0.56	0.37

**Figure 55** presents pre-post means and significance tests for these two measures of functioning. For the VFI, children improved significantly in both Wraparound and TAU Comparison Groups, but the amount of improvement was approximately equal ( $p = .11$ ).

For the experimental positive functioning scale, there was no evidence that children improved or evidence of group differences. Since the positive functioning scale is experimental, the failure to find improvement cannot be interpreted—results might be due to scale insensitivity or to a real absence of positive growth in the children.

- Hypothesis: More improvement in child functioning in Wraparound.
- Rationale: Getting the right treatment in the right setting produces better results.
- Results: Roughly equal results for Wraparound and TAU Comparison Groups.

#### 3.2.4.2.9 Family Outcomes

Mental health programs such as Wraparound or the continuum of care are sometimes described as family-oriented or as beneficial to families. While these ideas are often presented in terms too general to test, some accepted measures of family functioning do exist. Pre-post scores were available for six other outcomes shown in **Figure 56**. The measures are:

- Caregiver Strain Questionnaire (high bad). Amount of stress on parents from caring for a troubled child.
- Family Environment Scale—Family Cohesiveness Index (high good). Family environment and coordination.
- Family Environment Scale—Conflict Index (high bad). Amount of conflict among members of family.
- Mental Health Efficacy (high good). Knowledge of mental health treatment and ability to influence child's treatment.

More detailed reviews of these measures appeared in Section 3.1.2.3. The measures offer additional tests of the Wraparound hypothesis.

**Figure 56. Other Pre-post Outcomes for Parent Reports**

Measure of family outcome	TAU Comparison			Wrap Demonstration			Prob
	pre Mean	post Mean	p (change)	pre Mean	post Mean	p (change)	p (Group by time)
1. Total Caregiver Strain—hi bad	3.29	2.85	0.01	3.22	2.90	<.01	0.46
2. Family Cohesiveness Index—hi good	8.35	9.15	0.08	7.51	8.48	<.01	0.75
3. Family Conflict Index—hi bad	6.61	7.21	0.16	7.76	6.94	<.01	<.01
4. Mental Health Efficacy—hi good	21.08	22.12	0.32	22.36	23.32	0.08	0.94

Regarding Caregiver Strain, both the Wraparound and TAU Comparison Groups showed significant improvement that was approximately equal ( $p = 0.46$ ). Regarding Family Cohesiveness, the Wraparound Group showed improvement, but not significantly more than the TAU Comparison Group ( $p = .75$ ). Regarding Family Conflict, there was significantly more improvement in the Wraparound Group. And regarding Mental Health Efficacy, neither group showed significant change.

These results may be interpreted as showing a slight advantage for Wraparound over TAU Comparison.

- Hypothesis: Better family outcomes in Wraparound.
- Rationale: Case management and in-home treatment increase treatment responsiveness to the whole family.
- Results: More improvement in Family Conflict in Wraparound, but equal outcomes for Caregiver Strain, Family Cohesiveness, and Mental Health Efficacy.

### 3.3 Service Utilization and Cost Analysis

Data from the HCSR are used for service utilization and cost analysis. Only costs for mental health care were considered. HCSR data reports the volume and type of services children received in the Central Region and the dollar amount providers billed for those services. HCSR data represent claims paid to the network of providers who supplied the healthcare services. HCSR claim data were summarized and passed to Vanderbilt University staff. Summaries were completed for services children received between April 1, 1995 and June 31, 2001. This period includes the 3 years preceding the start of the Wraparound Demonstration and ends 1 month before the last wraparound service was received by any child (due to requirements for this report). The summary was done per child per month of care. On average, the HCSR data contained information on about 48 months of service use and mental health expenditures per child (only services received in the Central Region were available at the time of this writing). The HCSR data did not include:

- Medication expenditures
- Administrative costs of administrating and managing the Wraparound Demonstration
- Costs related to the Evaluation (see Appendix J).

Previous studies on wraparound/system of care expenses have shown that administrative costs of such a program are about 5 percent to 9 percent of total yearly expenses (Oliver, Nims, Hughey, and Somers, 1998).

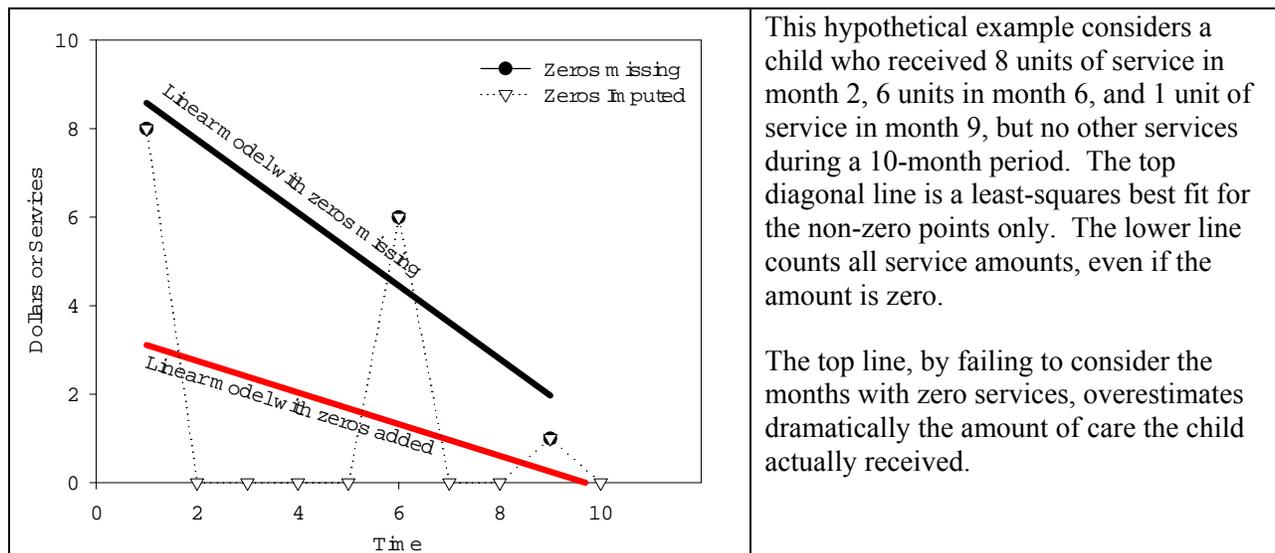
### 3.3.1 Service Utilization and Cost Analysis Methodology

To be able to use the summarized HCSR, two data adjustments were completed: Impute zeros for months in which no Central Region mental health services were reported, and impute missing case management costs.

#### 3.3.1.1 Imputing Zeros in HCSR Data

In its original form, the summarized HCSR data reports only months in which a child received mental health services in the Central Region. Data in this form, when used in regression models, may overestimate the amount of cost or utilization by ignoring months when service use was zero rather than considering them as such.

**Figure 57. Linear Model of Care With and Without Zeros**



As shown in **Figure 57**, if we consider only the months during which services were received, and ignore months when services were not, the resulting model overestimates the amount of care received. To prevent this misrepresentation, zeros were imputed for months with no reported services.

#### 3.3.1.2 Case Management Imputation

As per discussion with the Demonstration providers, because of a known coding error the HCSR data underreported case management provided to children in the Demonstration (services were split into two CPT codes). Based on the assumption that each child in the Wraparound Demonstration had case management service every month during his or her participation in the program, we imputed the missing case management units. In total, the case management imputation added 59 case management units, with a total cost of \$22,207. This sum very closely approximates the amount reported by the MCSC as reported under the other, nonsummarized, CPT code for case management.

### 3.3.1.3 Service Costs Per Unit for the Research Sample

Dollar costs for one unit of service were calculated for the research sample by dividing the monthly dollar costs for the research sample by the monthly unit totals. For example, while inpatient costs (row one in **Figure 58**) appeared to vary over a wide range, the average cost was \$388 per bed day.

**Figure 58. Empirical Rates for One Unit of Service**

	N	Unit	Std			
	Obs	Rate	Dev	Min	Max	Restrictive
1. Acute Inpatient Care	195	\$388	\$140	\$0	\$761	R
2. Residential Treatment Center	94	\$347	\$77	\$0	\$420	R
3. In Home Therapy	446	\$96	\$24	\$23	\$300	
4. Other MH Services	55	\$88	\$28	\$13	\$150	
5. Nontraditional Services	150	\$66	\$25	\$17	\$275	
6. Psychiatric Assessment Evaluation	279	\$64	\$34	\$0	\$148	
7. MH Diagnosis	545	\$56	\$63	\$0	\$466	
8. Psychiatric Medical Mgt	162	\$52	\$22	\$0	\$113	
9. Family Therapy	465	\$47	\$20	\$0	\$100	
10. In Office Treatment	709	\$43	\$20	\$0	\$175	
11. Medic Mgt	586	\$34	\$10	\$0	\$75	
12. Group Therapy	55	\$24	\$9	\$5	\$38	
13. Case Management <sup>a</sup>	927	\$12	\$2	\$0	\$14	

$n = 111$  Evaluation children (71 in the Wraparound, 40 TAU Comparison). Rates are HCSR dollar cost divided by the number of units of service.

<sup>a</sup>Case management is billed by the month, but here appears as \$12/day in a form comparable with other services. "Restrictive" services were defined as those taking the child out of the home at night. Some services may be considered invasive, e.g. in-home therapy and case management but we know of no consensus on this. Electroconvulsive therapy is generally considered invasive, but it was not used with this sample.

Costs varied across cases within service type; empirical rates were used in calculations. Rates were averaged across all 111 participants [Rate = Dollars/(Count of units)]. The list in **Figure 58** presents services in order of unit cost. The first two services listed in **Figure 58** (inpatient and residential) are the most expensive and restrictive.

### 3.3.1.4 Wraparound Theory and Billable Services

An important part of any program evaluation is translating ideas and goals into measures that can be tested empirically. **Figure 59** provides such a translation between wraparound theory and the HCSR data set. In HCSR terms, we can summarize wraparound theory like this: reduce restrictive and expensive inpatient and residential services by providing more in-home treatment, nontraditional treatments, family treatment, and case management. The costs of providing extra outpatient services will be paid for by a reduction in extremely expensive overnight services.

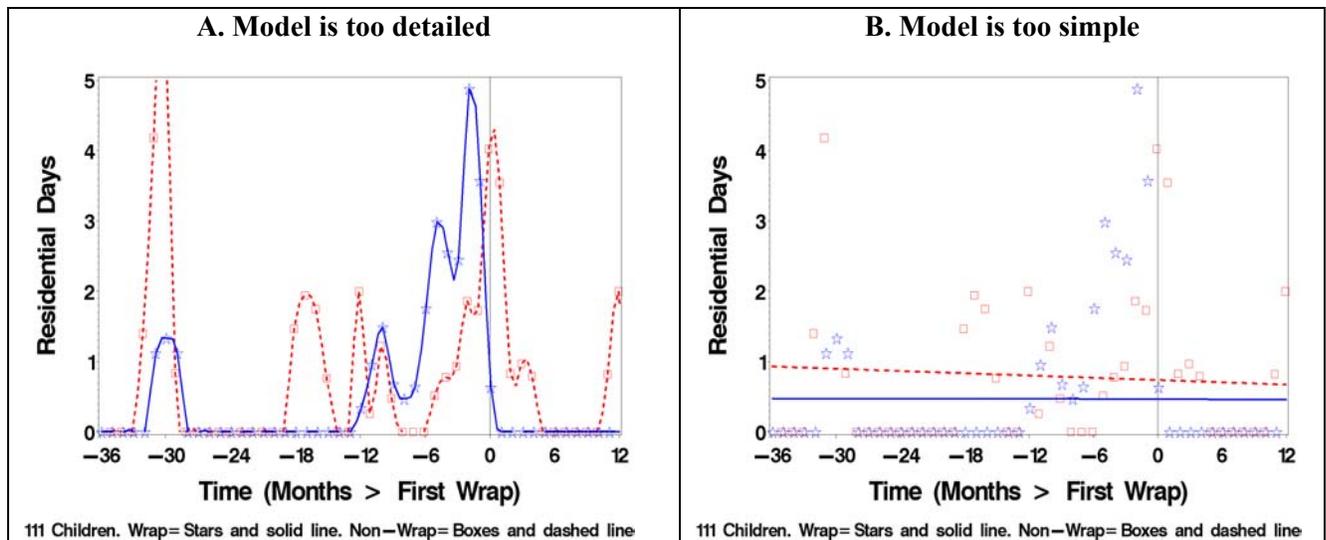
**Figure 59. Wraparound Theory and HCSR Categories**

Type of billable service	Theory suggests	Restrictive?
1. Acute Inpatient Care	Reduce	Yes
2. RTC	Eliminate	Yes
3. In Home Therapy	Increase	No
4. Other Mental Health Services	?	No
5. Nontraditional Services	Increase	No
6. Psychiatric Assessment Evaluation	-	No
7. MH Diagnosis	-	No
8. Psychiatric Medical Mgt	-	No
9. Family Therapy	Increase?	No
10. In Office Treatment	-	No
11. Medic Mgt	-	No
12. Group Therapy	-	No
13. Case Management	Increase	No

3.3.1.5 Piecewise Linear Longitudinal Model

When a statistical model is devised for examining cost or service use, a balance between simplicity and accuracy must be chosen. This choice can be observed by considering HCSR monthly totals for residential care over 4 years.

**Figure 60. Models Can Be Too Detailed or Too Simple**



**Figure 60** illustrates two models for change over time. Time was measured in months after the first wraparound service, or, for TAU Comparison cases, from their referral date plus the other group’s average delay between referral and the beginning of participation in the Wraparound Demonstration. Negative times indicate time before Wraparound (for example, -24 months means 2 years before wraparound services).

Lines represent the model, and points represent group means. Boxes and dashed lines represent the 40 children in the TAU Comparison Group, and stars with solid lines represent the 71 children in the

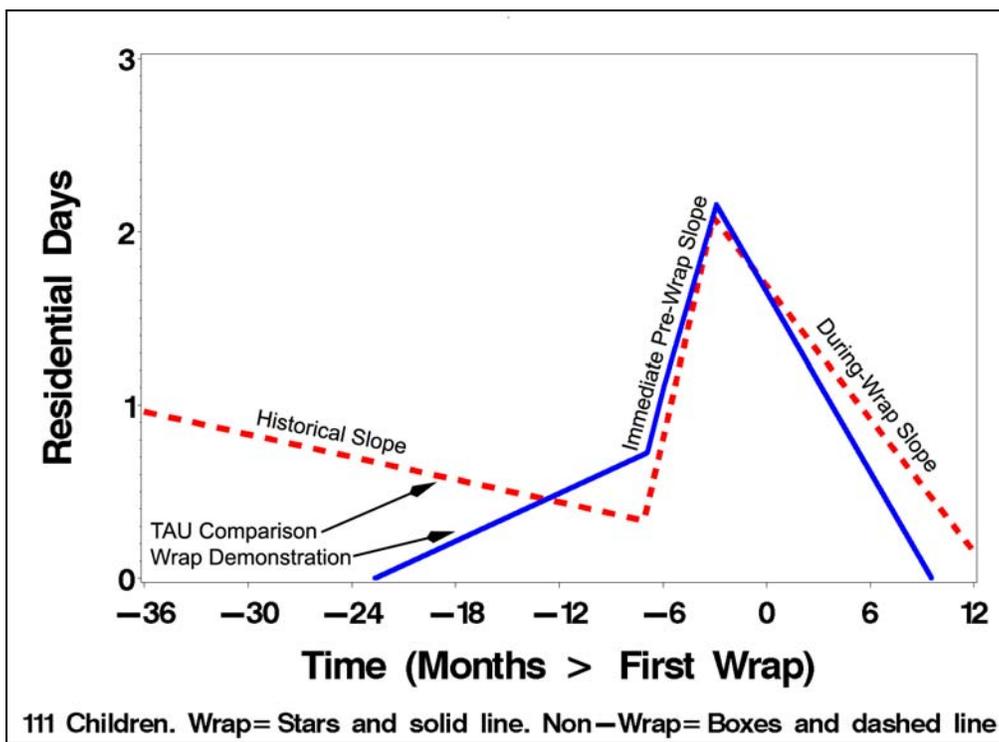
Wraparound Group. The model was used to answer questions such as, “Which group used more residential care during the study period (during which the children in the TAU Comparison Group were in the same time period relative to the date of their referral to the Demonstration)?” In **Figure 60A** the model lines are perfectly accurate, going through every mean, but the model is too detailed and complex to answer this question. In **Figure 60B**, the model is oversimplified. A model with the right balance of accuracy and parsimony is needed to answer questions of interest.

In past research, PWLM offered a good balance of detail and simplicity (Andrade, 2000; Lambert, Wahler, Andrade & Bickman, 2001). These models break the timeline into distinct epochs and offer specific parameters, each of which answers a separate question.

**Figure 61** shows the PWLM used in the cost and utilization analyses. To apply the model, first time was converted from calendar dates into a single continuum for every child. The model breaks time into three separate periods:

- Historical
- Immediate pre-Wraparound period
- During-Wraparound period.

**Figure 61. PWLM of Service Utilization**



A PWLM estimates the following equation:

$$\text{Outcome}_i = \beta_0 + \beta_1 \text{ Group} + \beta_2 \text{ Historic} + \beta_3 \text{ Immediate Pre-Wrap} + \beta_4 \text{ During Wrap} + \beta_5 \text{ Group*Historic} + \beta_6 \text{ Group*Immediate Pre-Wrap} + \beta_7 \text{ Group*During Wrap} + e$$

Where Outcome represents amount of services or cost,  $i = 1, 2, 3, \dots, 111$  children, Group equals 1 if the child is in the Wraparound Group, and equals 0 if the child is in the TAU Comparison Group.

This model has just enough detail to answer the main questions of the service use and cost study. The two most basic questions the model answers are:

- Were TAU Comparison and Wraparound children equal at time zero (when they either started or would have started wraparound services)?
- Were the during-Wraparound slopes equal for TAU Comparison and Wraparound children?

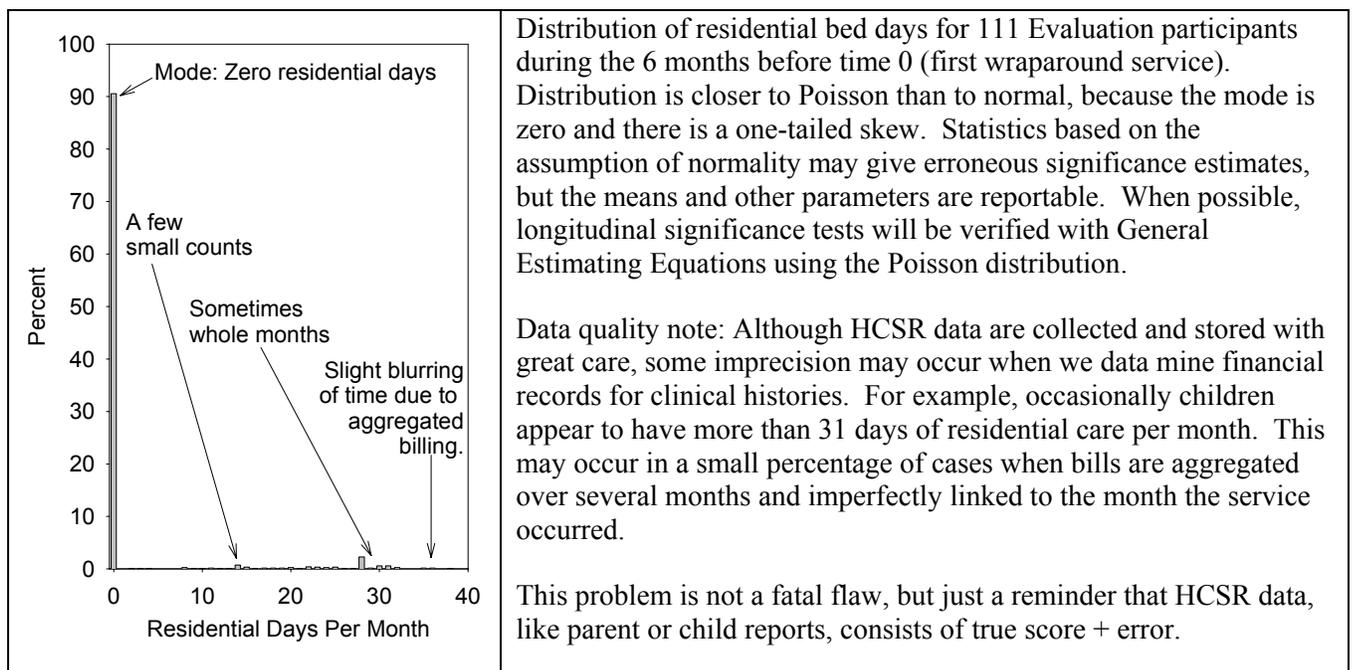
When estimated,  $\beta_0$  answers question one, and  $\beta_7$  answers question two.

3.3.1.5.1 Assumption of Normality

Classical statistical models often assume that outcomes are normally distributed. That assumption generally works for psychological tests, such as the CBCL or Ohio Scales, because they are designed to have a normal distribution. In the case of service use and cost, however, the assumption of normality is often not met, and many cost or utilization outcomes have distributions that are closer to Poisson than to normal.

Figure 62 shows the distribution of bed days of residential treatment. As explained in the figure, this distribution is non-normal and therefore Poisson-based tests of significance are necessary.

**Figure 62. Distribution of Residential Bed Days Over 1,219 Child-months**



### 3.3.2 Service Utilization

This section of the report examines the number and type of mental health services provided to children in the research sample. The following graphs provide a comparison of the mix of services used by children in the Wraparound and TAU Comparison Groups and test the hypothesis that implementing wraparound services results in a significant reduction of restrictive and costly services—specifically inpatient and residential bed days. This section also presents the results of an analysis of the pattern of services used over time by the two groups of children to determine if the pattern changes after the beginning of the Wraparound.

#### *3.3.2.1 Service Use for the Research Sample*

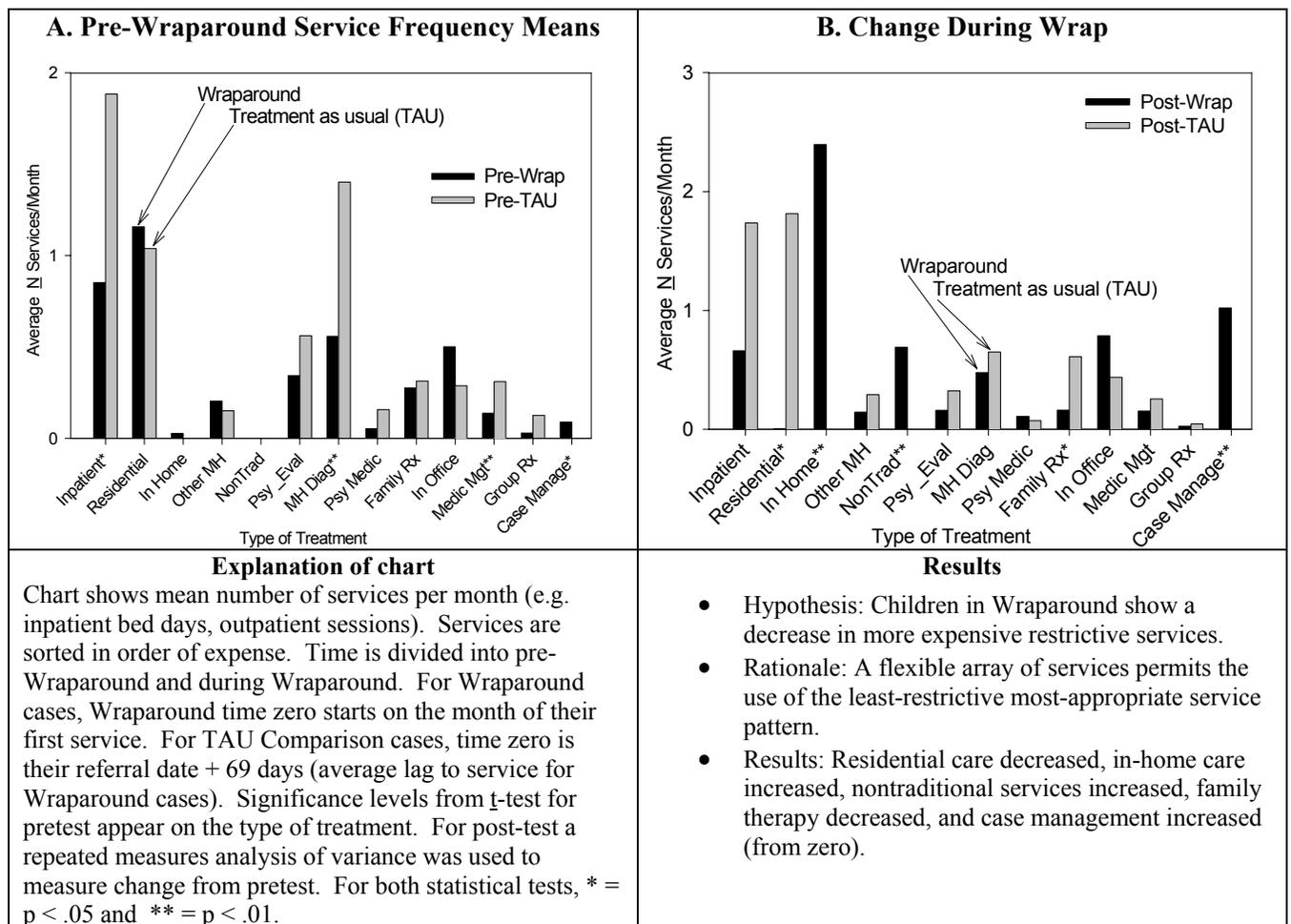
The next question concerns the billable services used in a Wraparound Demonstration. If the study had been a randomized experiment, a simple comparison of service mix during the Wraparound period would suffice, but given the quasi-experimental nature of this study, differences in client treatment history may be confounded with later differences in treatment mix.

To draw conclusions about service differences between the Wraparound and TAU Comparison Groups during the Wraparound period, treatment during the 3 years before each child's real or imputed wraparound service date was first compared. **Figure 63A** shows monthly averages for the 13 types of services. When there were significant Wraparound and TAU Comparison differences in a t-test of means, an asterisk appears on the X axis. For example the, rate of inpatient days was almost 1 day per month for the Wraparound Group, and almost 2 days per month for the TAU Comparison Group. This difference is significant, as shown by the asterisk on "Inpatient." Therefore, histories in the TAU Comparison Group with more inpatient services, more mental health diagnoses, more medication management, and less case management are seen<sup>14</sup>.

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<sup>14</sup> The appearance of a small amount of case management before the Wraparound date may be correct, or it may be a symptom of slight "blurring" of time in aggregated HCSR billing records.

**Figure 63. Services Received by 71 Wraparound and 40 TAU Comparison Children**



Since the pre-Wraparound treatment profiles were different, a repeated measures analysis of variance was used to estimate the amount of change in the Wraparound time period. Results appear in **Figure 63B**. Significance refers to the amount of change (group by time period interaction). This interaction was interpreted as indicating a significant change in the Wraparound Group. Results shown in **Figure 63B**, suggest that in Wraparound treatment:

- Residential days decreased to near zero.
- In-home treatment increased from near zero.
- Nontraditional treatment increased from near zero.
- Family therapy decreased somewhat.
- Case management began.

Per the fourth item above, a decrease in family therapy was unexpected. Was the Wraparound Demonstration hostile to family therapy? It seems more likely that this reduction in charges for family therapy was a technicality, not a dearth of family-oriented treatment. In the Wraparound period, the sum of family treatment plus in-home treatment was far larger than the early rates of family treatment. When

family sessions occurred in the home, they could properly be billed at the in-home rate (an average of \$96) rather than the family treatment rate (\$47).

### 3.3.2.1.1 Longitudinal Analysis of Service Utilization

Using the PWLM described in the analysis method section, a longitudinal view of services across 48 months was considered. As mentioned earlier, the during-Wraparound slope ( $\beta_7$ ), which indicates change in the number of services after beginning Wraparound treatment, is most interesting.

**Figure 64** shows the during-Wraparound slopes for  $n = 111$  children (71 Wraparound, 40 TAU Comparison). The PWLM was conducted as a hierarchical linear model, with extra Poisson-based significance tests to make sure that non-normality was not producing false estimates of significance.

**Figure 64. Utilization Slopes During Wraparound Period**

Treatment Units	$\hat{\beta}$	Se(b)	$p$ -Norm	$p$ -Poisson	Sig.
Inpatient Days	0.20	0.04	<.0001	0.01	*
Residential Days	-0.05	0.05	0.32	<.01	*
In Home Tx	0.10	0.02	<.0001	<sup>a</sup>	*
Other MH Services	-0.02	0.01	0.05 <sup>b</sup>	<sup>a</sup>	NS
NonTrad Services	0.04	0.01	<.01	<sup>a</sup>	*
Psy Assessment	0.01	0.01	0.27	0.96	NS
MH Diag Sessions	0.08	0.02	<.01	0.33	NS
Psy Med Mgt	0.00	0.01	0.80	0.75	NS
Family Tx Sessions	0.01	0.01	0.26	0.99	NS
In Office Sessions	0.00	0.01	0.79	0.71	NS
Medic Mgt	0.00	0.01	0.45	0.36	NS
Group Tx Sessions	0.00	<.01	0.36	0.89	NS
Case Management	0.04	<.01	<.0001	<sup>a</sup>	*

<sup>a</sup>Longitudinal Poisson GEEs failed to converge on utilization counts that were nearly always zero in the TAU Comparison Group, e.g. case management. <sup>b</sup>This probability was slightly greater than .05, so it was nonsignificant.

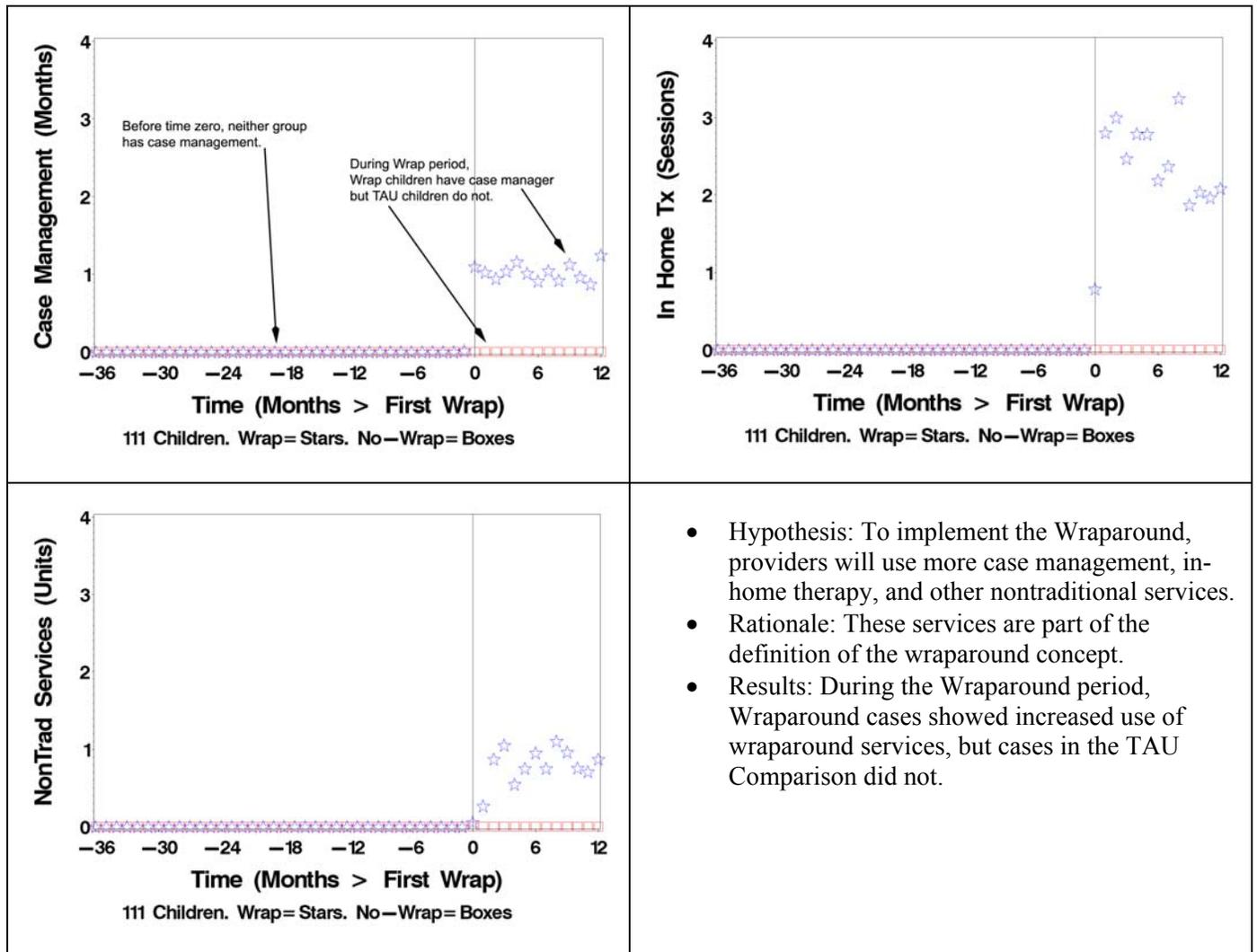
The significant slopes in **Figure 64** duplicate the results of the ANOVA except for finding the change in family therapy nonsignificant. The differences in case management, nontraditional treatment, and in-home treatment merely suggest that the wraparound services were implemented—that the program did in fact use more wraparound services.

### 3.3.2.2 Did Nontraditional/Wraparound Services Substitute for Inpatient Services?

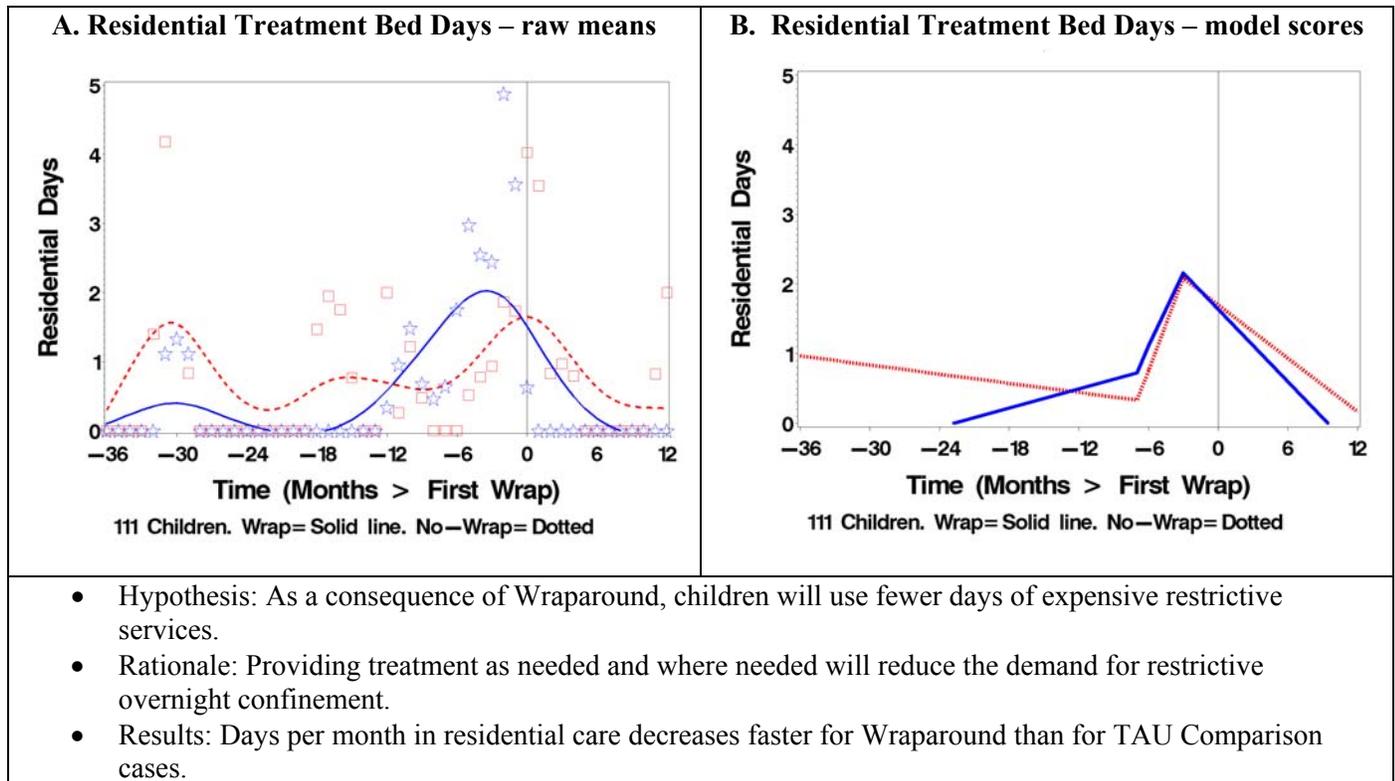
An important question considered in the Evaluation was whether implementing the Wraparound Demonstration resulted in the reduction of restrictive and costly services, specifically inpatient and residential bed days.

**Figure 65** shows mean counts per child per month of wraparound services (case management, in home treatment, and nontraditional services). All three services persist at zero levels for 3 years and then increase at time zero for the Wraparound Group only. This data in this figure suggest that the Wraparound Demonstration did in fact implement wraparound services as measured through the HCSR data.

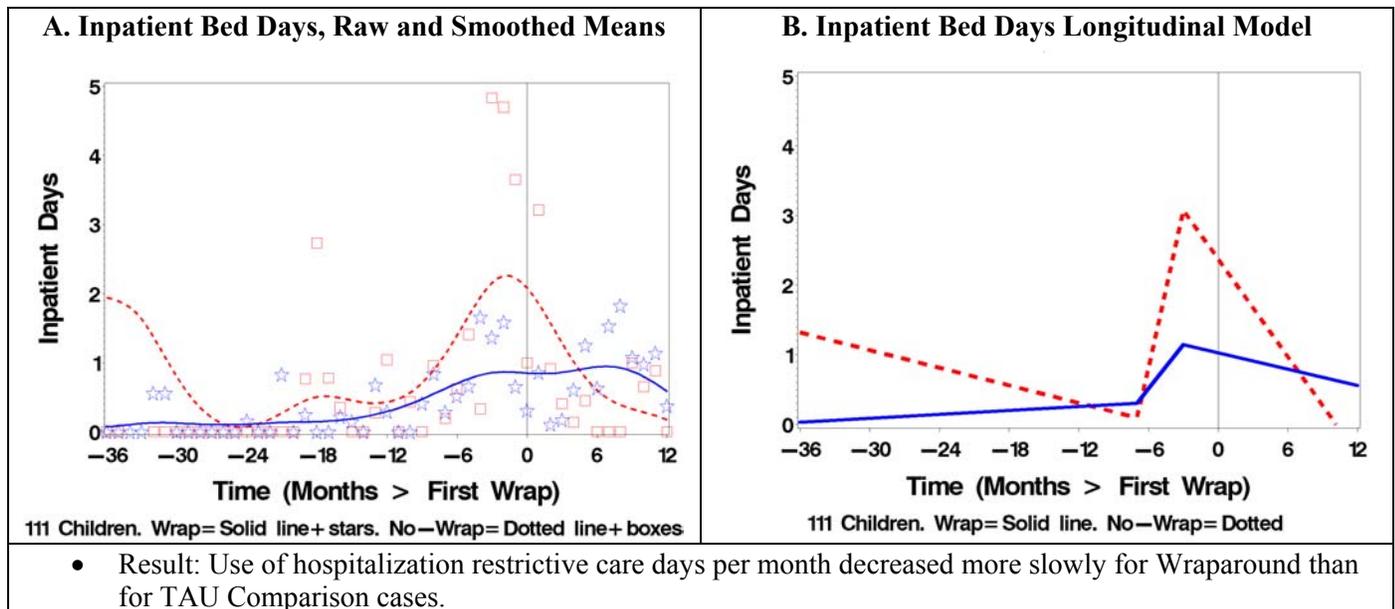
**Figure 65. Case Management, In-home, and Nontraditional Services Increase**



**Figure 66. Residential Services Decreased During Wraparound Program**



**Figure 67. Inpatient Days Remained Higher in Demonstration**



**Figure 68** shows the results of the piecewise linear longitudinal model for the inpatient or hospitalization bed days. In sum, the children in the Wraparound Group still had some hospitalization days.

**Figure 68. Complete Longitudinal Model for Inpatient Bed Days**

Effect	Estimate Coefficient		Significance		Interpretation
	$\hat{\beta}$	Normal	Poisson	Overall	
Intercept	3.07	<.0001	<.0001	*	TAU Comparison mean at time 0 is > 0
Historical Slope	-0.04	0.04	0.28	NS	TAU Comparison H-slope about level
Immediate Pre-Wraparound (PW) Slope	0.76	<.0001	0	*	TAU Comparison PW slope shows increase
During-Wraparound (W) Slope	-0.23	<.0001	<.0001	*	TAU Comparison W slope shows decrease
WrapDemo	-1.93	<.0001	0	*	Wraparound lower at time zero
Historical Slope*WrapDemo	0.05	0.04	0.07	NS	Wraparound same historical slope
Immed. PW Slope*WrapDemo	-0.55	<.0001	0.1	NS	Wraparound same PW slope
During-Wrap Slope*WrapDemo	0.2	<.0001	0.01	*	Wraparound slope less steep than TAU Comparison

In conclusion, during the Wraparound period:

- Children in the Wraparound Group showed increased use of nonrestrictive services, including case management, in home treatment and nontraditional services.
- Children in the Wraparound Group showed a significant decrease in the use of residential treatment, but experienced inpatient hospitalization at similar levels to that experienced before Wraparound.

In the cost section of the report it is shown that less residential care during the Wraparound period did not counterbalance the additional cost of using nonrestrictive services. These findings indicate that nontraditional or intermediate services are not perfect substitutes for more restrictive care.

### 3.3.2.3 Continuity of Care

Continuity of care refers to the absence of inappropriate gaps in treatment. An example of discontinuity would be discharging a client from a hospital when there is a 2-month for aftercare. The monthly summaries of HCSR utilization records for the present study offer an opportunity to explore continuity of care.

**Figure 69. Time Patterns of Treatment for the Wraparound-TAU Study Sample**

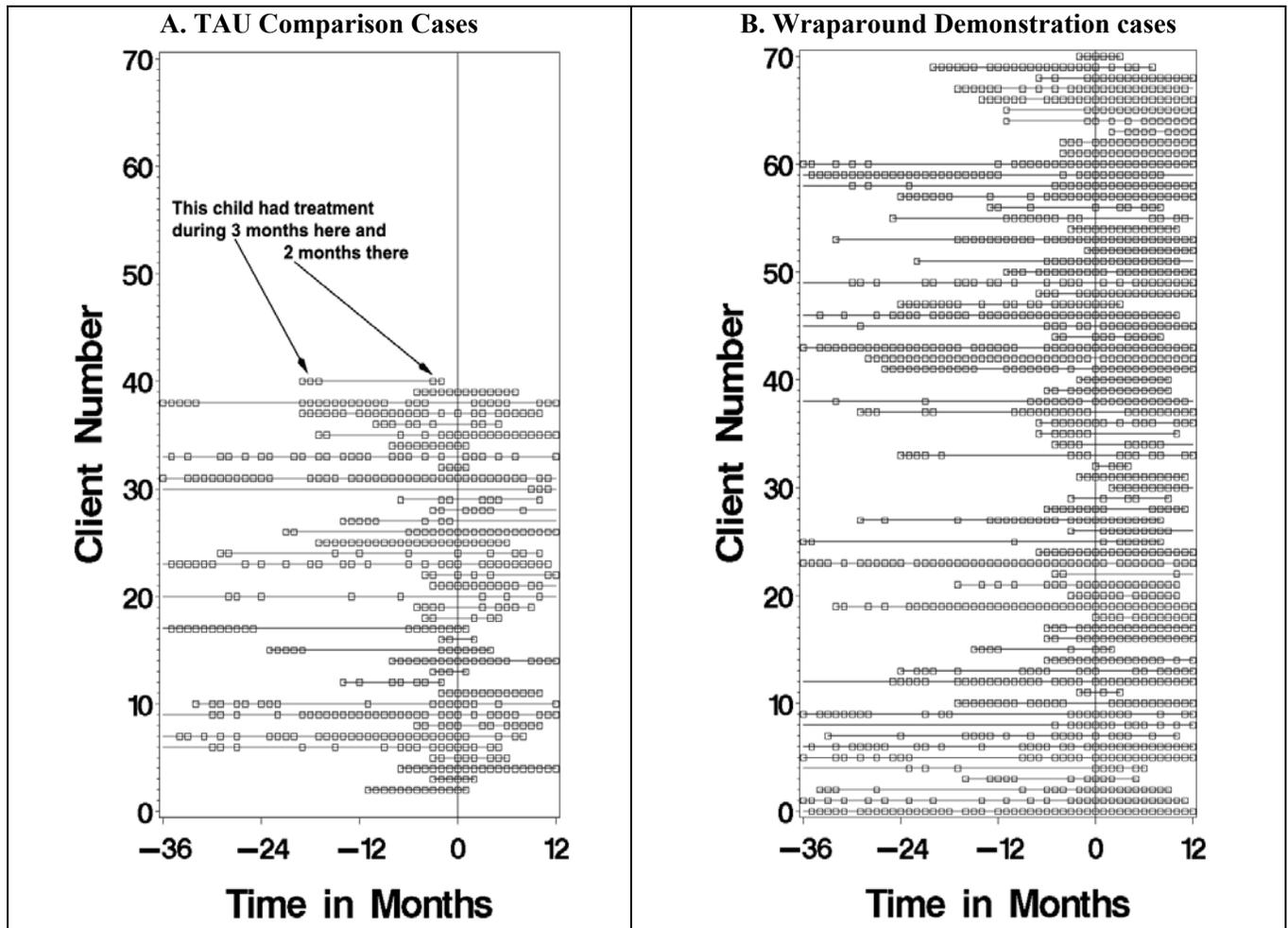


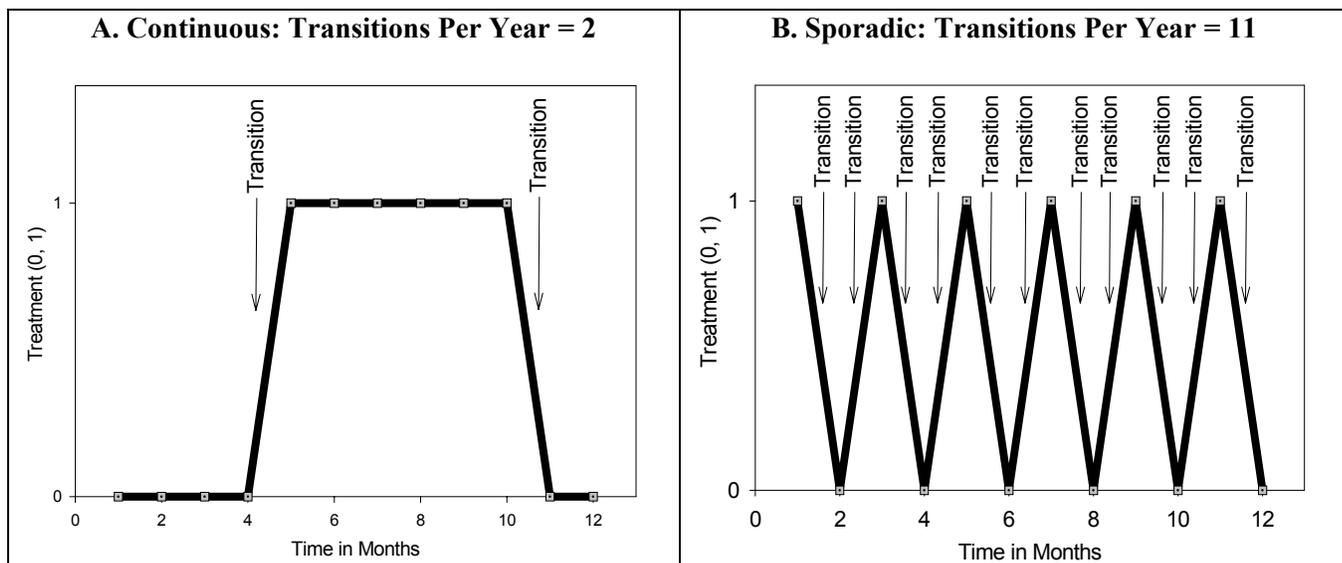
Figure shows individual timelines for 111 Evaluation participants (both Wraparound and TAU Comparison). The X axis shows time, with zero marking the first Wraparound treatment (or imputed Wraparound dates for cases in TAU Comparison). A box on the timeline indicates the presence of any treatment (other than case management). Continuous care would be a line of consecutive boxes, absence of care, a long line without boxes. Since the patterns of care vary so much, researchers saw no way to devise a simple definition of “episode of treatment” that was not arbitrary. This absence of well-defined episodes may resemble chronic diseases more than acute short-term conditions.

*3.3.2.3.1 Operational Definition of Continuity for this Study*

In the present study we will define continuity in a way that can be measured with monthly HCSR data. The proposed definition will distinguish between sporadic treatment and continuous treatment by the absence of care for one month.

**Figure 70** shows two hypothetical clients labeled “Sporadic” and “Continuous.” The high-continuity case in Panel A had few transitions between months with treatment and months with no treatment. The low-continuity case in Panel B made many transitions between months with no care and months with treatment.

**Figure 70. Defining Continuity: Two Hypothetical Clients**



The proposed definition of continuity emphasizes months with no treatment at all. This definition fits best for high acuity cases, where continuity is desirable. For children with mild problems, this definition of continuity might not apply. For example, a mother whose child has successfully treated attention deficit/hyperactivity disorder might check in with the provider sporadically as issues occur. However, for seriously impaired children with long histories of mental health problems and inpatient or residential care (such as the participants in this study), it is assumed that a large number of transitions from care to no care at all indicates poor practice.

There is a wide variety in the lengths of time that patients can be tracked in the HCSR data, so discontinuity is defined as the number of transitions per month, an index with a “worst case” limit of almost 1.0 for clients like **Figure 70**.

To clarify this definition of continuity, the client shown in **Figure 71** is considered (Wraparound ID 40).

**Figure 71. HCSR Summary for Case 40 in Wraparound**

1. Epoch	2. Time in Months	3. Case Mgmt	4. Cost (Excl. Case Mgmt)	5. Cost Binary	6. Transition
Before Wraparound	-22	\$0	\$48	1	0
Before Wraparound	-21	\$0	\$0	0	1
Before Wraparound	-19	\$0	\$48	1	1
Before Wraparound	-19	\$0	\$0	0	1
Before Wraparound	-18	\$0	\$0	0	0
Before Wraparound	-17	\$0	\$0	0	0
Before Wraparound	-16	\$0	\$0	0	0
Before Wraparound	-15	\$0	\$0	0	0
Before Wraparound	-14	\$0	\$0	0	0
Before Wraparound	-13	\$0	\$0	0	0
Before Wraparound	-12	\$0	\$0	0	0
Before Wraparound	-11	\$0	\$0	0	0
Before Wraparound	-10	\$0	\$0	0	0
Before Wraparound	-9	\$0	\$0	0	0
Before Wraparound	-8	\$0	\$0	0	0
Before Wraparound	-7	\$0	\$0	0	0
Before Wraparound	-6	\$0	\$0	0	0
Before Wraparound	-5	\$0	\$0	0	0
Before Wraparound	-3	\$0	\$2,475	1	1
Before Wraparound	-3	\$0	\$0	0	1
Before Wraparound	-2	\$0	\$0	0	0
Before Wraparound	0	\$277	\$37	1	1
During Wraparound	1	\$277	\$507	1	0
During Wraparound	2	\$277	\$180	1	0
During Wraparound	3	\$277	\$180	1	0
During Wraparound	4	\$277	\$480	1	0
During Wraparound	5	\$277	\$360	1	0
During Wraparound	6	\$277	\$560	1	0
During Wraparound	7	\$277	\$1,000	1	0
During Wraparound	8	\$277	\$277	1	0

Column one in **Figure 71** shows time in general terms, before or during the Wraparound. Time is coded more precisely in column two as the months before or after the first wraparound service. At time equals zero, case management begins at \$277 per month, or about \$9 per day. Column four shows costs for services other than case management. Non-case management service costs were recoded into a binary (0, 1) indicator in column five, which shows the presence or absence of treatment. Transitions appear in column six showing when treatment started or stopped. This client, Wraparound ID 40, had 6 transitions in 31 months, a discontinuity rate of 19 percent.

### 3.3.2.3.2 Continuity and Discontinuity for Children Referred to Wraparound

With the above detailed examination of one case for reference, this section reviews means for the whole sample of children referred to the Wraparound Demonstration. (In this section “Wraparound Group” refers to children who participated in the Wraparound Demonstration and the Evaluation. “Wraparound

participants” refers to all children who participated in the Demonstration, whether or not they participated in the Evaluation.)

**Figure 72. Mean Discontinuity Rates for Children Referred to Wraparound**

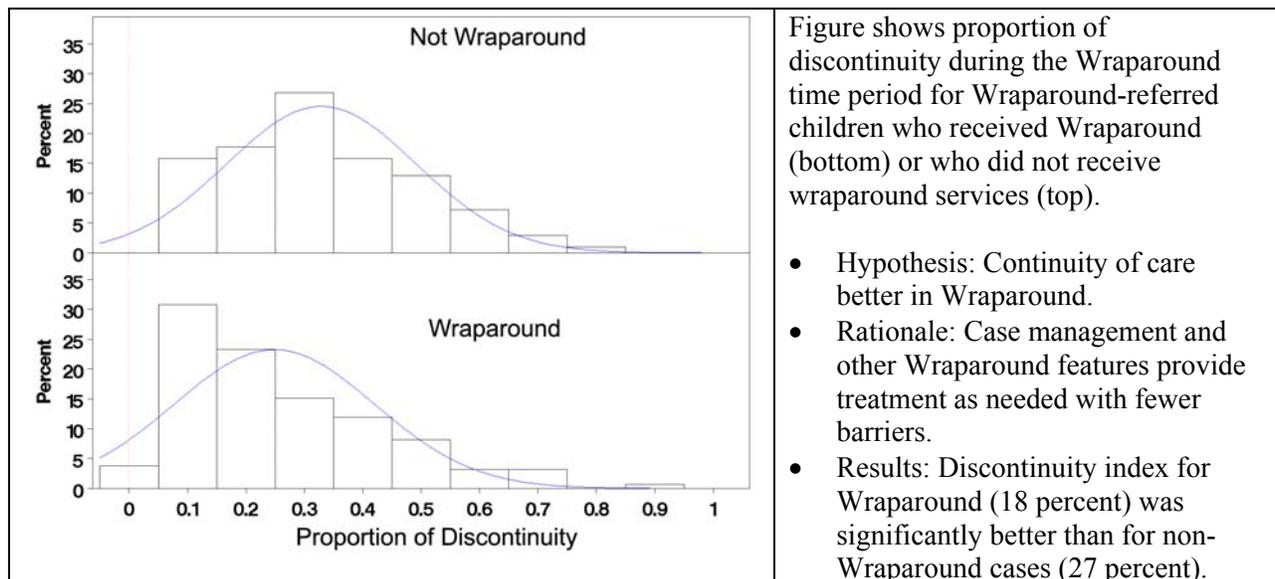
Time	Wraparound Case?	N Children	Std			
			Mean	Dev	Min.	Max.
Before	Not Wrapped	374	19%	17%	0%	86%
	Wraparound Wrapped	214	21%	16%	0%	67%
During	Not Wrapped	290	27%	24%	0%	100%
	Wraparound Wrapped	222	18%	18%	0%	86%

**Figure 72** suggests that the discontinuity rate before referral to Wraparound was about 20 percent. This rate would indicate that children in the sample typically began or ended treatment (for a month or more) about twice each year. At this point it is not known whether a 20 percent transition rate is good or bad, but that rate can be used to test the hypothesis that continuity increased in the Wraparound Demonstration.

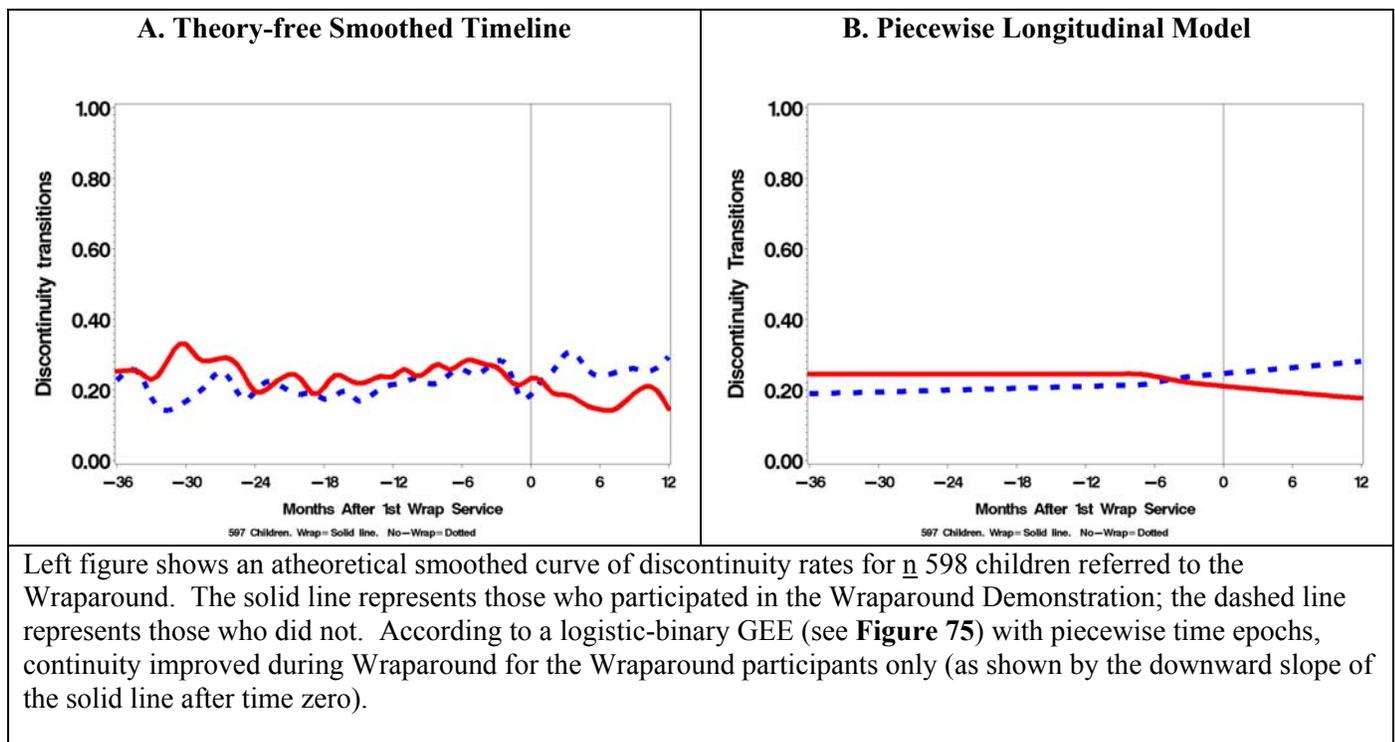
According to a t-test of means, the discontinuity rates were about the same for Wraparound and non-Wraparound cases before the Wraparound time period [ $t(586) = -1.6, p = 0.11$ ]. A repeated measures ANOVA, done to determine whether change differed by treatment group, was significant [group by time,  $F(1, 595) = 20, p < .0001$ ]. This result suggests that the change in discontinuity rates over time were significant—that these discontinuity rates became lower for children in Wraparound.

**Figure 73** shows the distribution of the discontinuity percentage during the Wraparound time period.

**Figure 73. Distribution of Discontinuity of Care for Wraparound-referred Children**



**Figure 74. Continuity of Care Somewhat Improved for Wraparound-Treated Children**



**Figure 75. Discontinuity: Piecewise Longitudinal GEE**

Parameter	Estimate	Std. Error	Prob.
Intercept	-1.16	0.07	<.0001
Early Slope	0.01	0.01	0.293
Pre-referral slope	0.03	0.03	0.250
In-Wraparound slope	0.01	0.01	0.084
Wraparound Case	-0.10	0.11	0.372
Early Slope *WrapCase	-0.01	0.01	0.504
Pre-referral slope *WrapCase	-0.07	0.04	0.131
<b>In-Wraparound slope *WrapCase</b>	<b>-0.03</b>	<b>0.01</b>	<b>0.003</b>

### 3.3.3 Cost Analysis

The main purpose of this section is to determine the economies of a wraparound system of care versus a more traditional system. The cost section answers three relevant questions:

- Was the Wraparound Demonstration more costly?
- If there are substantial expenditure differentials, what explains those differences?

- Did nontraditional/wraparound services substitute for more traditional, more expensive inpatient services?

To answer those questions, we continued to use the summarized HCSR data. As explained above, the HCSR data represents claims data the MCSC paid to the providers who actually supplied the healthcare services. HCSR data reports all services children received in the Central Region during the Wraparound Demonstration and the corresponding provider charges; the summary was done per child and per month of care. In addition, HCSR data were summarized per child and per month of care for 3 years of services provided for each child before the start of Wraparound Demonstration (or the imputed referral plus average delay in Wraparound participant date used for children referred to the Demonstration but who did not participate). On average, the HCSR data contained information on about 48 months of service use and mental health expenditures per child. The HCSR data did not include:

- Medication expenditures
- Administrative costs of administering the Wraparound Demonstration
- Costs related to the Evaluation (but see Appendix J).

Previous studies on wraparound/system of care expenses have shown that administrative costs of a wraparound-type program are about 5 percent to 9 percent of total yearly expenses (Oliver, Nims, Hughey, and Somers, 1998). In this section, it is assumed that all costs above the dollar values billed by providers are equal between the Wraparound and the TAU Comparison Groups, and therefore not relevant to the cost analysis.

### 3.3.3.1 *Definition of Costs*

In the context of health and mental health care, the economic definition of “cost” includes more than the value of the consumed resource. “Cost” also represents the value of lost resources that result from the illness. In this context, cost of a mental illness is equivalent to the value of resources consumed or lost by ill people, treatment providers, government entities, or other segments of society as a direct or indirect result of the illness. Usually, consumed and lost resources are referred to as direct and indirect costs respectively. Direct costs are due to primary objectives of a program and indirect costs are spillovers and externalities (such as savings in special education costs and increases in parents’ ability to work) due to the program. Direct costs of mental health care are the visible expenses of treatment. Indirect costs are “lost output due to the reduced or lost productivity causes by illness, disability, or injury.” In this Evaluation, the main focus is to assess the direct costs of the Wraparound Demonstration resulting from providing mental health services.

To be clear, a distinction is drawn between cost and charges. In a well-functioning, competitive economic market, the terms “prices,” “cost,” and “charge” are essentially identical. In a competitive economic market all of these concepts show buyers’ and sellers’ consensus about the value of a good or service. The healthcare market, however, differs from the ideal competitive market. Imperfect information and limited competition are two types of market failures that are common in the healthcare market. The presence of third-party payers, such as insurance companies, and government intervention in response to market failure further disrupt the healthcare markets. These differences distort the supply and demand relationships that allow producers and consumers to arrive at market prices. As a result, charges—what providers bill patients and insurers—are not equivalent to costs, which is the actual value of the resources used to provide those services. Charges look like costs because they are recorded in dollar terms. Charges commonly include a share of the cost of uncompensated care for other patients or

reflect cost shifting among different departments in a clinic, hospital, or service agency. Despite these inherent limitations charges are frequently used to calculate costs of health services.

### 3.3.3.2 *Was the Demonstration More Costly?*

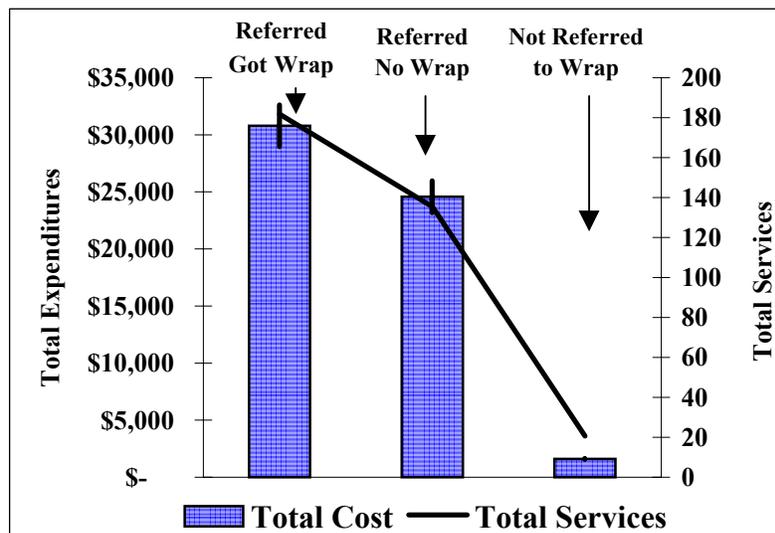
To answer this question, total charges reported in the HCSR claim data for services provided to the 111 children in the Evaluation, the 71 children who received Wraparound Demonstration services and the 40 children referred to the Demonstration but who did not participate (the TAU Comparison Group) are compared. Total expenditures were considered at three levels. First, the overall expenditures for the whole period available in the HCSR data (from 1995 to 2001) were examined. Next, the total expenditures during the Demonstration period and per year were examined. Finally, the monthly individual expenditure changes over time between children in both Wraparound and TAU Comparison Groups were examined.

It should be noted that expenditures do not account for movement of participants into or out of the Central Region, since these data were not available. The expectation is that movement would not differ systematically by groups.

#### 3.3.3.2.1 *Total Expenditures for 1995–2001*

**Figure 76** shows the overall mental health charges reported for children living in the Central Region ( $n=57,351$  children receiving mental health services at some point during the period 1995 (quarter two through 2001 quarter two) for the entire period 1995 to 2001. As mentioned in Section 3.2, although these data reflect diverse methods of care management, patterns that affect this scenario are not expected to differ by group. These data do not account for movement of participants into or out of the region, since worldwide data that were unavailable during the Evaluation would have been needed in order to include this information. However, it is not expected that this would differ systematically by group. Average service levels and costs per child are shown for three groups of children: children referred to the Wraparound Demonstration who received wraparound services ( $N=222$ ), children referred to the Wraparound Demonstration who did not receive wraparound services ( $N=390$ ), and the remaining children in the Central Region who were not referred to the Wraparound Demonstration ( $n=56,754$ ).

**Figure 76** shows that on average, a child referred to the Wraparound Demonstration (represented by the first two bars on the graph) had more services and therefore higher expenditures than a child not referred to the Demonstration (represented by the third bar on the graph). In a 6-year period—from 1995 to 2001—a child referred to but not accepted into the Wraparound Demonstration used a total of \$24,000 in mental health services, while a child who was never referred to the Wraparound Demonstration used a total of \$1,600 in mental health services. Considering only participants in the Evaluation, from 1995 to 2001, children from the Wraparound Group (embedded into the Referred got Wraparound Group) spent about \$26,000 on mental health services; children from the TAU Comparison Group who received services in the core program (embedded into the referred No-Wraparound Group) spent \$21,500. Expenditures in the Wraparound and TAU Comparison Groups did not differ significantly ( $p=0.30$ ).

**Figure 76. Total Expenditures and Services Per Child 1995–2001**

### 3.3.3.2.2 Total Expenditures Per Year

**Figure 77** shows total mental health services expenditures for children in the Wraparound and TAU Comparison Groups for the years 1995 to 2001. Again, as previously mentioned, although this data reflects diverse methods of care management, patterns that affect this scenario are not expected to differ by group. In each year, the average expenditures on mental health services per child were similar between groups (all last column  $p$ -values  $> .05$ ). In addition, for years 1995 and 2001, only two quarters of data are present.

**Figure 77. Total and Average Expenditures Per Year**

Year	Demonstration N=71			Comparison N=40			p-value
	Total Expenditure	Children receiving Services	Total Expenditure Per Child	Total Expenditure	Children receiving Services	Total Expenditure Per Child	
1995	\$21,368	12	\$1,781	\$1,587	4	\$397	0.0981
1996	\$18,721	17	\$1,101	\$5,030	9	\$559	0.2717
1997	\$55,671	26	\$2,141	\$122,715	12	\$10,226	0.2062
1998	\$85,082	41	\$2,075	\$45,081	18	\$2,504	0.7939
1999	\$617,944	61	\$10,130	\$315,326	34	\$9,274	0.7659
2000	\$870,150	71	\$12,256	\$308,227	36	\$8,562	0.1453
2001	\$201,909	59	\$3,422	\$41,774	18	\$2,321	0.4429

In 1999, total and average expenditures of both groups of children increased four to five times the amount of the previous year<sup>15</sup> ( $p$ -values  $< 0.0001$  and  $0.003$  for the Wraparound and TAU Comparison Groups respectively); remained about the same from 1999 to 2000, and later decreased. The expenditure increased in 1999 and 2000, suggesting that during 2 years, children in the evaluation received more mental health services than in previous years. This is illustrated by **Figure 78**, **Figure 79**, and **Figure 80**.

<sup>15</sup> In the TAU Comparison group the expenditures per child increased significantly from 1996 to 1997; 99.7 percent of the increase, however, was due to inpatient services provided to three children.

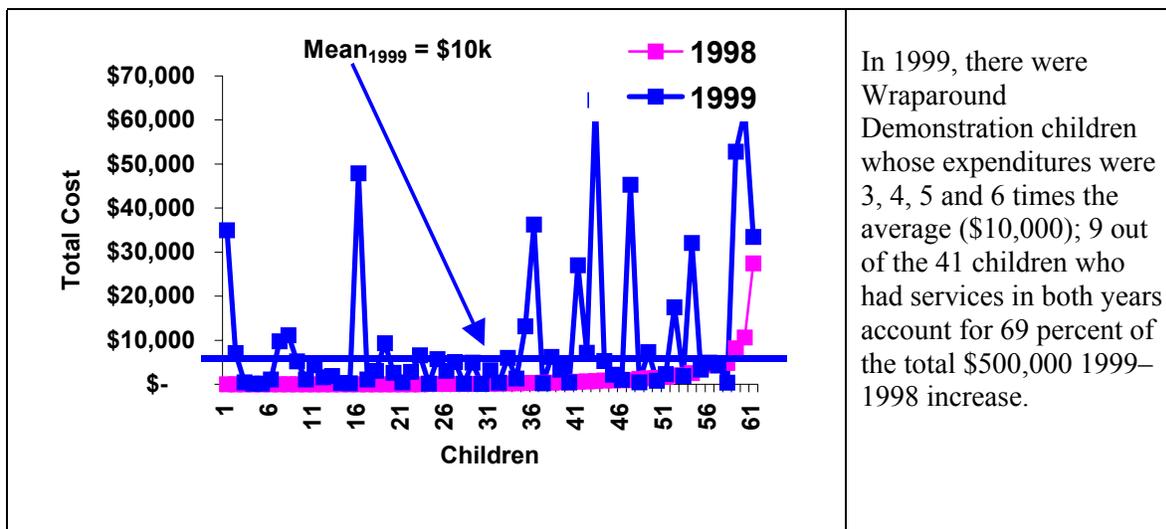
The increase in total expenses from 1998 to 1999 was unusually high. However, as shown in **Figure 77**, the increase did not differ between the groups—it was 85 and 86 percent for children in the TAU Comparison and Wraparound Groups, respectively. On the following page, **Figure 78** shows the total net expenses per child for the years 1998 and 1999. This figure shows that costs for the 40 children in the Wraparound Group who received services in both years cost a total of \$474,000—77 percent of the total expenses for Wraparound Group children in 1999. This indicates that service costs were not inflated by children who did not appear in the dataset until 1999, but rather that children present in both years received more services (or had more services reported because of a system-level change).

**Figure 78. Expenditures For Wraparound Group Children in 1998 and 1999**

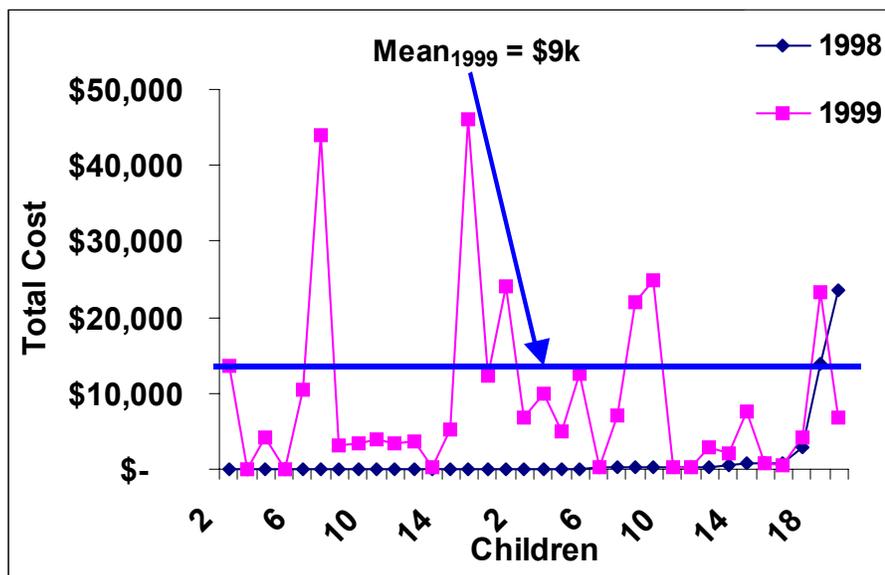
Children Receiving Services in 1999 Only			Children Receiving Services in 1998 and 1999		
Child #	1998	1999	Child #	1998	1999
1		\$34,942.88	1	\$26.82	\$2,814.47
2		\$7,101.05	2	\$26.82	\$6,559.95
3		\$423.01	3	\$40.45	\$115.02
4		\$130.03	4	\$51.47	\$5,681.82
5		\$177.10	5	\$53.04	\$3,005.32
6		\$1,058.17	6	\$81.89	\$5,070.62
7		\$9,733.00	7	\$93.45	\$158.20
8		\$11,110.71	8	\$102.94	\$4,923.14
9		\$5,200.00	9	\$133.71	\$53.42
10		\$1,104.07	10	\$152.24	\$3,171.12
11		\$4,310.41	11	\$154.41	\$333.99
12		\$1,582.42	12	\$193.11	\$5,959.86
13		\$1,858.93	13	\$228.20	\$1,278.15
14		\$257.97	14	\$273.30	\$13,183.36
15		\$224.69	15	\$296.33	\$36,295.00
16		\$47,921.48	16	\$333.34	\$241.31
17		\$1,050.54	17	\$361.74	\$6,229.78
18		\$3,007.47	18	\$409.24	\$3,306.21
19		\$9,344.38	19	\$409.44	\$410.50
20		\$2,579.49	20	\$609.12	\$27,036.61
21		\$457.85	21	\$651.47	\$7,175.40
			22	\$715.78	\$64,504.41
			23	\$855.08	\$5,268.25
			24	\$897.65	\$2,133.09
			25	\$932.66	\$990.03
			26	\$970.69	\$45,320.01
			27	\$1,223.72	\$403.15
			28	\$1,351.15	\$7,305.25
			29	\$1,465.45	\$763.81
			30	\$1,625.51	\$2,326.78
			31	\$2,004.44	\$17,457.56
			32	\$2,009.92	\$1,885.43
			33	\$2,543.40	\$32,046.04
			34	\$4,005.00	\$3,340.00
			35	\$4,361.84	\$4,881.16
			36	\$4,381.36	\$4,251.75
			37	\$4,804.90	\$394.38
			38	\$8,195.56	\$52,788.13
			39	\$10,620.00	\$61,880.59
			40	\$27,435.30	\$33,425.42
<b>Subtotal</b>		\$143,575.65	<b>Subtotal</b>	\$85,081.94	\$474,368.49
<b>Total for children with both years</b>					\$559,450.43
<b>Total expenses</b>				\$85,081.94	\$617,944.14
<b>Average</b>				\$1,418.03	\$9,716.69

To clarify the total expense increases for those 2 years, **Figure 79** and **Figure 80** are presented. **Figure 79** presents the expenditures for all 61 children in the Wraparound Group who had services in the dataset for the years in question, and shows that in 1999 there were Wraparound Group participants who had up to six times more than the 1999 average expenses. It is expected that these children were severe cases who had access to and received more services. **Figure 80** shows the total expenses for the TAU Comparison Group for these particular years. Please note that there were similarly severe children in the TAU Comparison Group who received treatment costing four or five times more than the group average.

**Figure 79. Total Expenses Per Child in the Demonstration in 1998 and 1999**



**Figure 80. Total Expenses Per Child in the TAU Comparison in 1998 and 1999**



It is possible that the decrease in year 2001 spending is affected by incomplete data—services may not have been billed by the time of data extraction and therefore not be represented in the HCSR data received.

**Figure 81** shows the total and average expenditures for children in the Wraparound and TAU Comparison Groups during the Wraparound program (January 1998 to September 2000). During the Demonstration period, the Demonstration spent a total of \$916,731 in mental health services on the 71 children in the Wraparound Group, an average of \$12,912 per child. Total expenditures on mental health services provided to 37 of the children in the TAU Comparison Group reached \$267,347, an average of \$7,469 per child. On average, services costs for children in the TAU Comparison Group were 42 percent less than those for a typical child in the Demonstration. The group expenditure differential during the Wraparound program was significant ( $p=.0070$ ).

**Figure 81. Total and Average Expenditures During the Demonstration Period<sup>a</sup>**

	Wraparound	TAU Comparison	p-value
Total Expenditure	\$916,731	\$276,347	
Average Expenditure Per Child	\$12,912	\$7,469	0.007
Median Expenditure Per Child	\$9,105	\$3,364	
Children receiving services	71	37	

Note: <sup>a</sup> Demonstration period: January 1998 to September 2000.

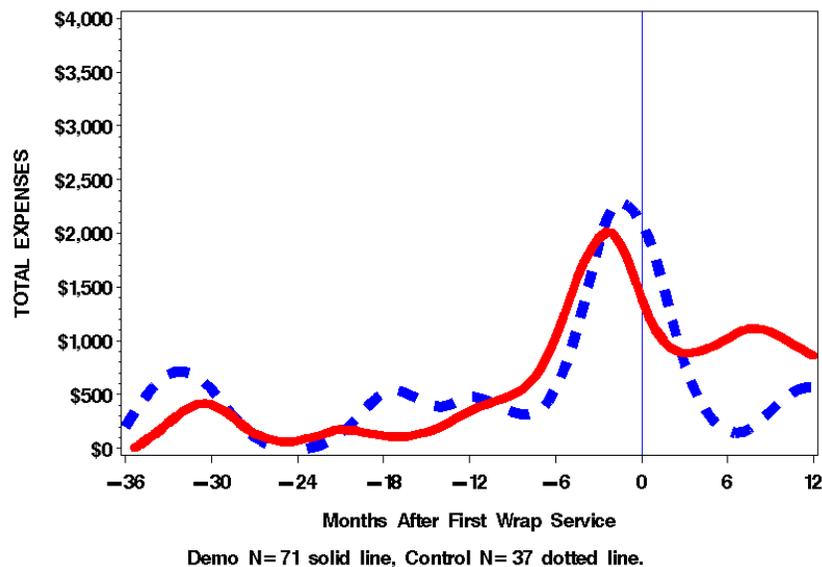
This analysis is limited, as “Wraparound” periods for individual children started and ended at different times during the overall time period included above. The following longitudinal analysis takes into consideration individual time periods, and therefore considers only Wraparound-specific time periods for the entire group.

#### 3.3.3.2.3 Monthly Expenditure Per Child

**Figure 82** shows the average monthly expenditures reported in HCSR data for children in the Wraparound and TAU Comparison Groups 3 years previous to and 1 year after the first wraparound service (zero equals the first wraparound service). **Figure 82** shows three distinct expenditure patterns:

- Thirty months previous to the Wraparound Demonstration, monthly expenditures were about \$600 per month.
- Monthly expenditures were at their height just before (3months to 6 months) the first wraparound service.
- Mental health expenditures declined after the first wraparound service was provided.

The central question is whether the expenditure differences between groups are real differences or coincidental, with the goal of determining whether services provided in the Wraparound Demonstration were more costly than services in the TAU Comparison Group.

**Figure 82. Monthly Total Expenditures Per Group**

When examining monthly HCSR data, a hierarchical model recommended for psychiatric outcome research (Gibbons, Hedeker, Elkin, Waternaux, & et al., 1993; Hedeker, Gibbons, & Flay, 1994) was used. For a better data fit, the PWLM was used. As explained in the method section, the main advantage of using a PWLM is that it allows measurement of changes in expenditures between groups across different time segments. Instead of fitting a straight line between all possible observed expenditure values as a linear model does, the PWLM allows the time to be broken into segments, and the expenditure changes within those time segments to be determined per group.

In the analysis of total expenditure between the Wraparound and TAU Comparison Groups, the PWLM to was used to measure expenditure changes within three time segments:

- Before the Demonstration started
- Immediately before the Demonstration started (on a per-child basis)
- During the Wraparound Demonstration.

These three time segments are referred as “Historic Slope,” “Immediate Pre-Wraparound,” and “During Wraparound Slope,” respectively. The “Historic Slope” measures the monthly expenditure change in the first 30 months of data (expenditures between -36 to -6 months), the “Immediate Pre-Wraparound” slope measures the monthly expense changes 3 months to 6 months previous to first wraparound service (expenditures between -6 to -3 months), and the “During Wraparound Slope” measures monthly expenditure changes during the Wraparound program.

**Figure 83** shows the results of the PWLM when a HLM (SAS Proc Mixed) was used to correct for autocorrelation of service use<sup>16</sup>.

<sup>16</sup> Having mental health services in previous month may impact the likelihood of having mental health services this month.

**Figure 83. PWLM: Demonstration More Costly than Comparison**

Dependent Variable=Monthly Expenditure \* Child  
N = 3473 (total months of data)

Parameter	Estimated Betas	Estimate Coefficients	Standard Error	p-value	Main Interpretation
Intercept	$\hat{\beta}_0$	\$2,074.55	\$197.38	<.0001	Average expenditure per child per month when first wraparound started.
Historic Slope	$\hat{\beta}_1$	\$1.02	\$13.63	0.9408	TAU Comparison Group: First 30 months before Wraparound, expenditures did not change.
Immediate Pre-Wraparound Slope	$\hat{\beta}_2$	\$422.51	\$56.73	<.0001	TAU Comparison Group: Immediately before Wraparound, expenditures were increasing by \$423 per month per child.
During Wraparound Slope	$\hat{\beta}_3$	\$(133.40)	\$17.65	<.0001	TAU Comparison Group: During Wraparound, expenditures decreased by \$133 per month per child.
Group (Demonstration=1)	$\hat{\beta}_4$	\$(365.90)	\$ 242.25	0.131	When Wraparound starts, Wraparound and TAU Comparison had same average monthly expenditure.
Historic*Group	$\hat{\beta}_5$	\$13.82	\$16.62	0.4057	Wraparound and TAU Comparison Groups spent similar average per month in 30 months before Wraparound.
Immediate Pre-Wrap*Group	$\hat{\beta}_6$	\$(107.29)	\$68.81	0.119	Children in both Wraparound and TAU Comparison were spending more right before Wraparound.
During Wrap*Group	$\hat{\beta}_7$	\$67.23	\$20.07	0.0008	Demonstration decreased expenditures by half the TAU Comparison rate during the Wraparound.

Note: Positive betas show dollar increases, betas in parenthesis are dollar decreases.

From the HCSR data alone, it can be observed that the services provided to the Wraparound Group were more costly than those provided to the TAU Comparison Group because during the Wraparound Demonstration, TAU Comparison Group monthly expenditures decreased at a faster rate than the rates for the Wraparound Group. In the other two time segments, the Wraparound and TAU Comparison Groups showed the same monthly expenditure per child. During the Wraparound period, average monthly expenditure per child decreased in both groups. However, the TAU Comparison Group decreased twice as much as the Wraparound Group—\$134.63 per child per month versus \$66.18 respectively.

By using the estimated coefficients beta three and beta seven, the decrease in total expenditures during the Wraparound for each group can be determined:

- TAU Comparison Group total expenditure decrease equals  $\$134.34 * 39 * 14$ , or  $\$73,349.64$ .
- Where  $\$134.34$  is the estimated  $\hat{\beta}_3$  showing the amount by which monthly expenditure per child decreased per month during the Wraparound period, 39 children in the TAU Comparison Group had some services in the HCSR dataset, and 14 is the average number of months a child spent in the Wraparound Demonstration.
- Wraparound Group total expenditure decrease equals  $\$66.18 * 71 * 14$ , or  $\$65,782.92$ .
- Where  $\$66.18$  comes from subtracting  $\hat{\beta}_3 - \hat{\beta}_7$ , showing how much the Wraparound Group decreased its monthly expenditure per child per month during the Wraparound Demonstration, 71 children had some services in the Wraparound Group, and 14 is the average number of months a child spent in the Wraparound Demonstration.

Therefore, during the Wraparound period the services provided to children in Wraparound Group were more costly than those provided to the TAU Comparison Group.

A followup analysis used two additional statistical models on the HCSR cost data; the main concern was to determine the robustness of the above results (recall that each statistical model makes specific assumptions). If the results from these two additional models point to the same conclusion as did the previous analyses, it could be concluded that the statistical results are robust and reliable. **Figure 84** and **Figure 85** show the piecewise model results when using two additional statistical models:

- GEE introduced by Liang and Zeger (1986) and Diggle, Liang, and Zeger (1994), in which it is assumed that the error terms have a Poisson distribution—an appropriate assumption when there are many zero values (recall that when children did not have services, monthly expenditures are equal to zero)
- HLM using the log of monthly total expenditure as the dependent variable.

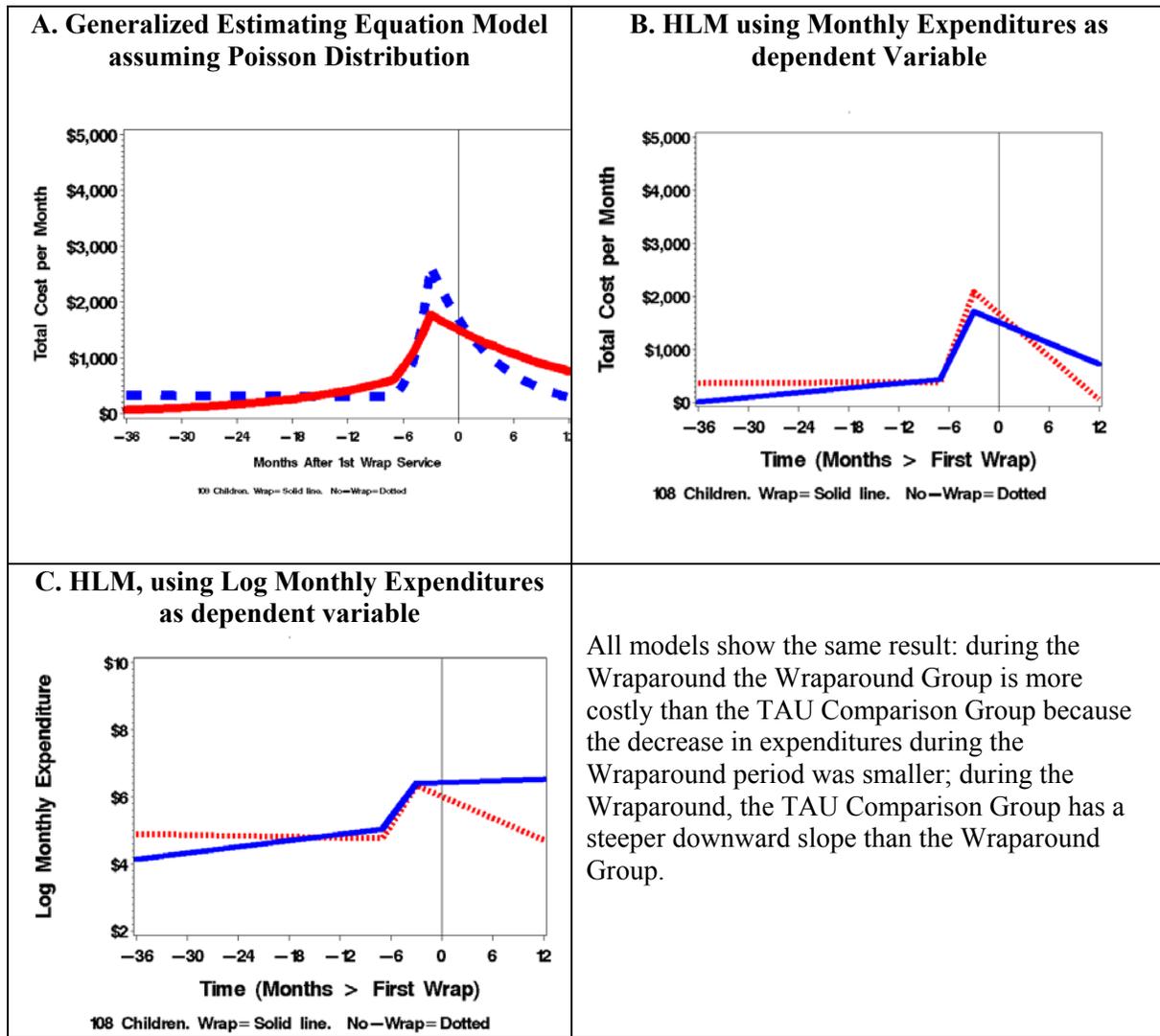
These two models show the same result as the HLM piecewise models: During the Wraparound the Wraparound Group is more costly than the TAU Comparison Group because the decrease in expenditures during the Wraparound Demonstration was smaller for the Wraparound Group.

**Figure 84. Longitudinal Model Results: Demonstration More Costly During Wraparound Period**

<i>Estimated</i>		<b>HLM Model</b>		
<b>Betas</b>	<b>Estimated Coefficient</b>	<b>1 DV: Tot Cost</b>	<b>HLM Model 2 DV: Log Tot Cost</b>	<b>GEE Model 3 Poisson Dist</b>
$\hat{\beta}_0$	Intercept	<.0001	<.0001	<.0001
$\hat{\beta}_1$	Historic Slope	0.9401	0.7601	0.9377
$\hat{\beta}_2$	Immediate Pre-Wrap Slope	<.0001	<.0001	<b>0.0051</b>
$\hat{\beta}_3$	During Wrap Period	<.0001	<.0001	<.0001
$\hat{\beta}_4$	Group (Demonstration=1)	0.1271	0.7210	0.1473
$\hat{\beta}_5$	Historic*Group	0.4061	0.0441	0.1828
$\hat{\beta}_6$	Immed.Pre*Group	0.1159	0.3017	0.1794
$\hat{\beta}_7$	During Wrap*Group	<b>0.0007</b>	<.0001	<b>0.0155</b>

Note: 1) HLM Model DV: Total Cost = HLM when dependent variable is total dollar expenditures. 2) HLM Model DV: Log Total Cost = HLM when dependent variable is the log of total dollar expenditures. 3) GEE Model Poisson Distribution = Generalized estimating equation introduced by Liang and Zeger (1986) and Diggle, Liang, and Zeger (1994) assuming Poisson distribution, an appropriate assumption when there are many zero values in data set

**Figure 85. Results of PWLM Using Three Models: Demonstration More Costly**

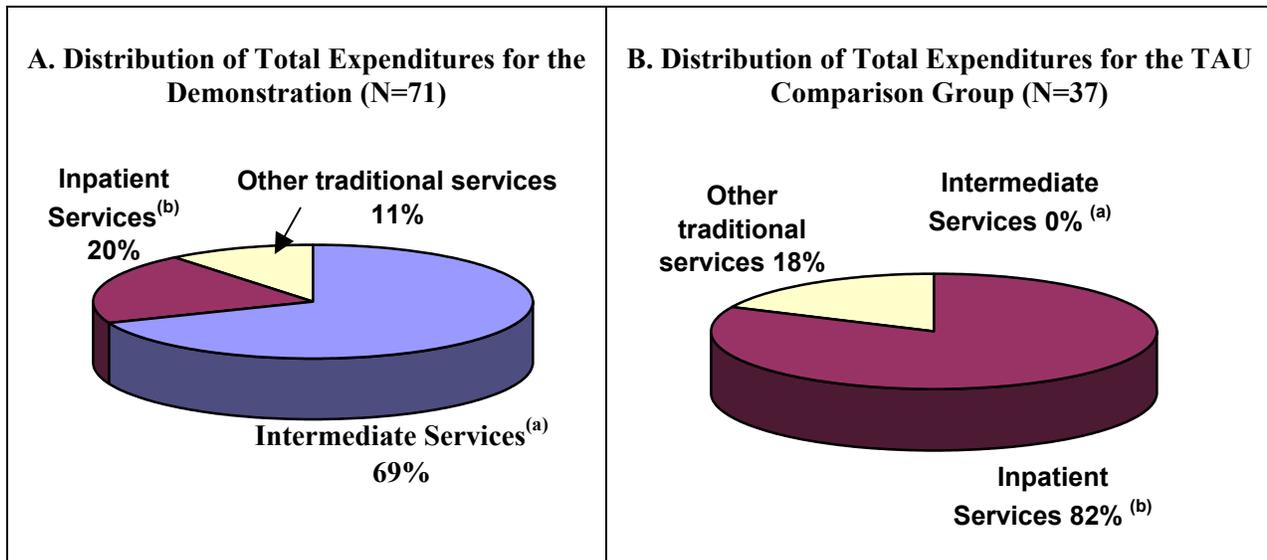


In conclusion, during the Wraparound time period (an average of 14 months per child) treatment for children in the Wraparound was more costly: \$12,912 versus \$7,469 average cost per child for the overall Wraparound for Wraparound and TAU Comparison Groups respectively.

*3.3.3.2.4 What Explains the Cost Difference Between Groups?*

According to wraparound theory, children in the Wraparound Demonstration should have more nonrestrictive, nontraditional services and fewer traditional services. For illustrative purposes, we label these nontraditional, nonrestrictive services as Intermediate Services (intermediate in intensity between outpatient services and residential services such as hospitalization), including case management, in home treatment, and in other nontraditional services. **Figure 86** shows that in fact, during the Wraparound, 69 percent of total expenditures for children in the Wraparound Group were spent on intermediate services, and 31 percent of expenditures went to traditional more restrictive services (such as hospitalization, residential treatment, outpatient, family and group therapy). In the TAU Comparison Group, 82 percent of total expenditures went to inpatient services, including residential and hospitalization services.

**Figure 86. Distribution of Expenditures for Wraparound Period by Group**



Note: <sup>a</sup> Intermediate services include case management, in home treatment, and other nontraditional services; <sup>b</sup> Inpatient services include residential treatment and hospitalization.

**Figure 87** shows in more detail the distribution of total expenditures across all 13 types of services, the average cost per child, and the average cost per unit of service before and during the Wraparound for each child. Since the before and after expenditure distribution within groups were different, a longitudinal piecewise statistical model is again used to account for early differences between groups and estimate the amount of change between groups during the Wraparound. In **Figure 87**, the rightmost column reports the significance of the interaction term “Group\*During Wraparound Period” estimated coefficient ( $\beta_7$ ); recall that this interaction term indicates whether differences between groups during the Wraparound period are statistically significant controlling for early differences. The PWL model results indicate that during the Wraparound, children in the program had increased total spending for case management, in-home treatment, and nontraditional services, and decreased total spending for residential treatment. Expenditures on other services remain similar at the TAU Comparison Group levels.

**Figure 87. Cost Distribution Per Service Type Before and During Wraparound Period**

Service Type	Wraparound		TAU Comparison		Main Results of Longitudinal PWL Analysis <sup>(c)</sup>
	Total Expenditure	Proportion of Total	Total Expenditure	Proportion of Total	
Historical Period (a)					
Case Management	\$ 12,175	1%	\$ -	0%	
In Home Tx	\$ 695	0%	\$ -	0%	
Non-Trad Services	\$ -	0%	\$ -	0%	
Hospitalization	\$ 281,621	<b>30%</b>	\$ 267,087	<b>51%</b>	
Residential	\$ 519,234	<b>55%</b>	\$ 171,337	<b>33%</b>	
Outpatient	\$ 25,368	3%	\$ 7,165	1%	
Family Therapy	\$ 24,056	3%	\$ 6,481	1%	
Group Therapy	\$ 1,782	0%	\$ 1,530	0%	
Assessment Eval	\$ 17,799	2%	\$ 13,094	3%	
Medical Mgt	\$ 8,421	1%	\$ 6,860	1%	
Psy Med Mgt	\$ 3,713	0%	\$ 2,293	0%	
Diagnosis	\$ 44,009	5%	\$ 35,936	7%	
Other Mental Health	\$ 7,850	1%	\$ 8,462	2%	
Total Expenditures	\$ 946,724	100%	\$ 520,245	100%	
During the Wrap Period (b)					
Case Management	\$ 360,466	<b>39%</b>	\$ -	0%	Demonstration Increase
In Home Tx	\$ 222,926	<b>24%</b>	\$ -	0%	Demonstration Increase
Non-Trad Services	\$ 50,742	6%	\$ -	0%	Demonstration Increase
Hospitalization	\$ 183,414	<b>20%</b>	\$ 96,343	<b>35%</b>	Same Both Groups
Residential	\$ 3,144	0.34%	\$ 130,240	<b>47%</b>	Demonstration Decrease
Outpatient	\$ 36,251	4%	\$ 6,257	2%	Same Both Groups
Family Therapy	\$ 8,326	1%	\$ 10,873	4%	Same Both Groups
Group Therapy	\$ 380	0.04%	\$ 238	0.10%	Same Both Groups
Assessment Eval	\$ 8,592	1%	\$ 5,464	2%	Same Both Groups
Medical Mgt	\$ 5,520	1%	\$ 3,923	1%	Same Both Groups
Psy Med Mgt	\$ 7,630	1%	\$ 2,260	1%	Same Both Groups
Diagnosis	\$ 20,105	2%	\$ 9,989	4%	Same Both Groups
Other Mental Health	\$ 9,236	1%	\$ 10,760	4%	Same Both Groups
Total Expenditures	\$ 916,731	100%	\$ 276,347	100%	

Note: (a) The Historical period includes 33 months of cost and utilization data.

(b) During the Wraparound period includes about 14 months of data per child.

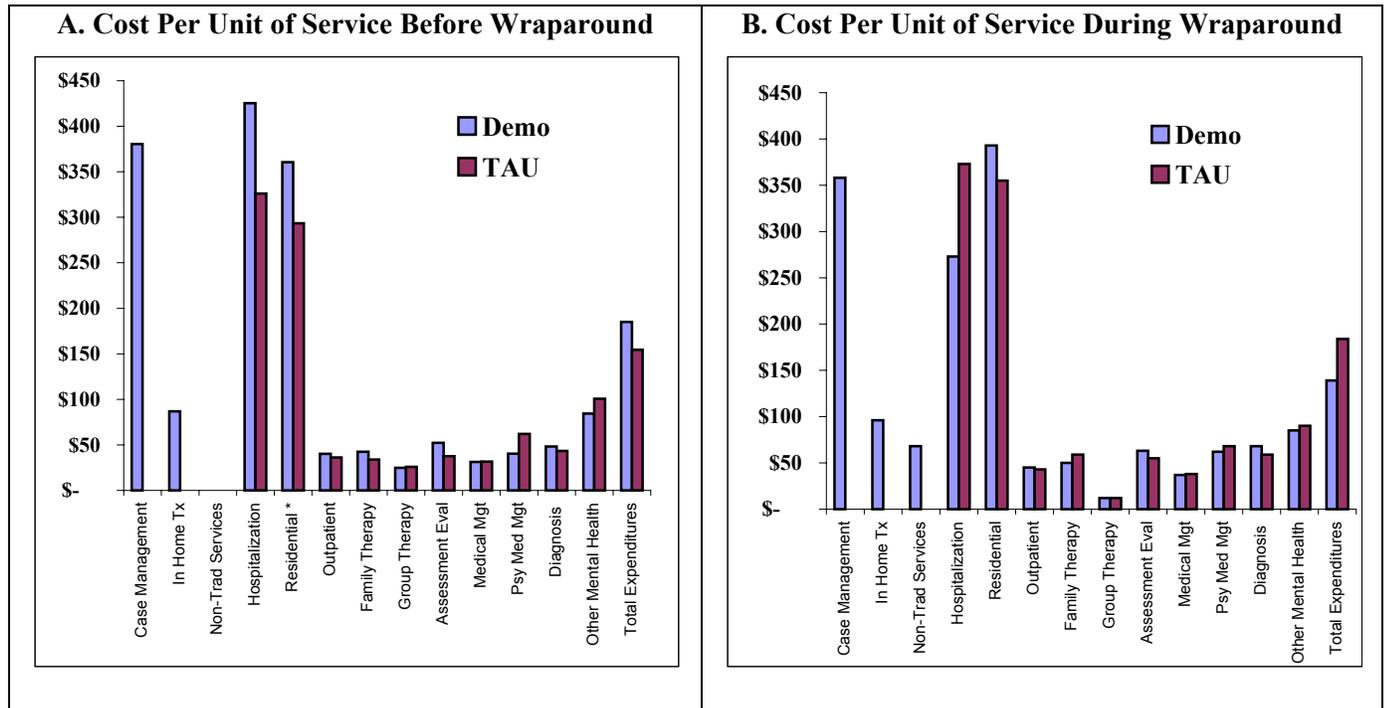
(c) Reporting interpretation of interaction term "Time\*Group" resulting from the Piecewise linear model, assuming a Poisson distribution. This interaction term measures the group expenditure differential during the Wraparound period; Demonstration Increase means that the estimated coefficient for this interaction term was positive and significant, indicating that children in Wraparound Group had a larger increase in spending for that particular type of service than children in the TAU Comparison Group.

### 3.3.3.2.5 Was Cost Per Unit of Service Greater in the Demonstration?

The next question to examine was whether the cost per unit of service was greater in the Wraparound Group than in the TAU Comparison Group. In **Figure 88**, Panels A and B show the cost per unit of

service before and after the Wraparound period. The mean differential t-test is used to determine group cost per unit differential within periods. Overall, it was found that both groups had similar cost per unit before and during the Wraparound; however, before the Wraparound, residential treatment cost per unit was \$51 per day more costly for children in the Wraparound Group than for children in the TAU Comparison Group ( $p=0.0104$ ).

**Figure 88. Cost Per Unit of Service Before and During Wraparound Period**



3.3.3.3 All Wraparound Demonstration Cases Versus Evaluation Demonstration Cases

Since the Evaluation did not include all children in the Wraparound Demonstration it is important to determine whether the Evaluation cases differed in the expenditure patterns from the Wraparound Demonstration cases not included in the Evaluation. The entire sample consisted of children considered to be in the Wraparound Demonstration by the MCSC, and was  $n = 180$  of the 222 children admitted to the Wraparound Demonstration (children who dropped out of the program before graduation or program end were paid retroactively under the core program). As described previously, the main sample for Vanderbilt University’s research was  $n = 71$  children treated in the Wraparound Demonstration and 40 children in the TAU Comparison Group (who were referred to the Wraparound Demonstration but did not participate for some reason). In the HCSR data set, data can be found for 176 of the 180 MCSC cases. These cases fall into two categories: Vanderbilt University research cases ( $n = 64$ , all in the Evaluation Demonstration Group) and MCSC non-Vanderbilt University cases ( $n = 112$ ). Having HCSR service histories on these two samples lets us compare them. If there are few differences between the two subsamples, then the financial analysis by the MCSC and the mental health-cost effectiveness analysis by Vanderbilt University should produce consistent findings, and any discrepancies must be explained by differences in methods.

The MCSC non-Vanderbilt University and Vanderbilt University Wraparound samples were compared using the longitudinal analysis introduced earlier. This model would reveal any differences in early

treatment history, in the months immediately before Wraparound, and during the Wraparound period. The first analysis focused on total dollar cost per month for the two samples.

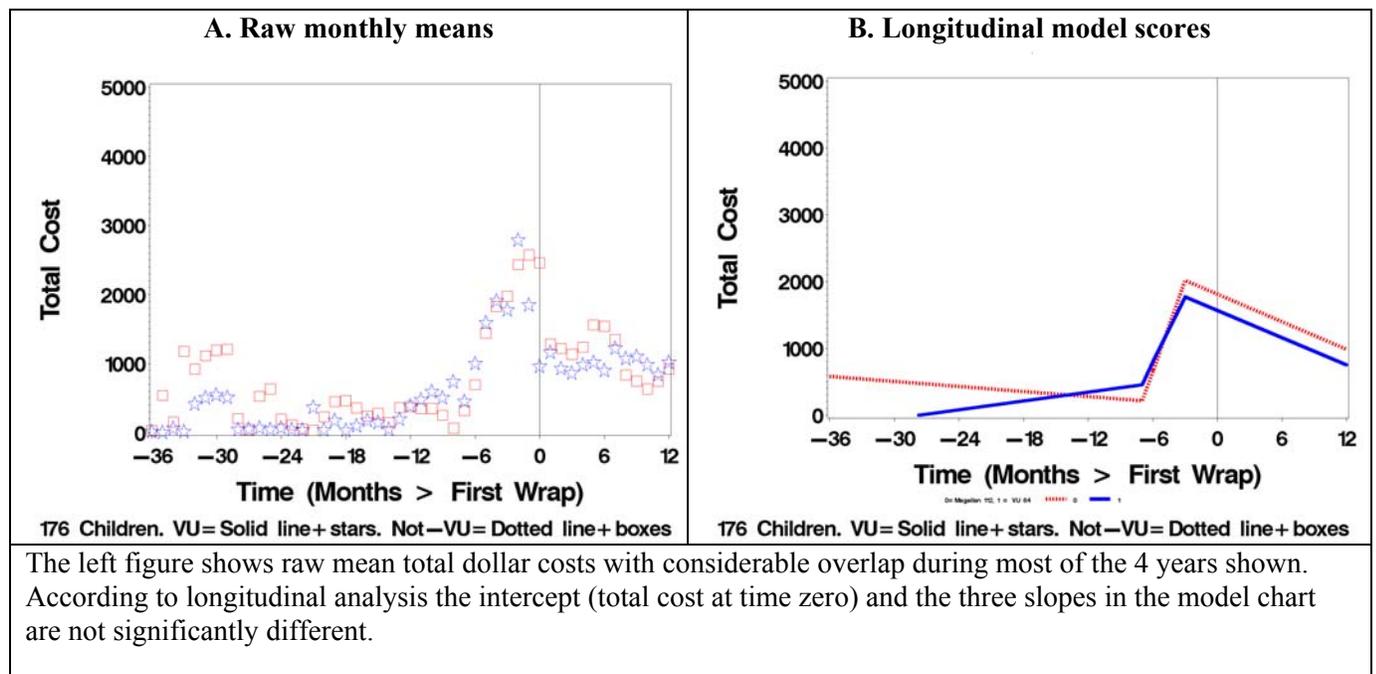
Parameter estimates for this analysis appear in **Figure 89**.

**Figure 89. Vanderbilt and MCSC non-Vanderbilt Groups: No Significant Total Cost Differences**

Effect	Estimate	P-Poisson	Interpretation
Vanderbilt (VU)-Case	-\$250.5	0.49	No significant difference at time zero
Historical Slope*VU-Case	\$34.7	0.10	No significant difference in historical slope
Immed. PW Slope*VU-Case	-\$132.1	0.14	No significant difference in Pre-Wrap slope
During-Wrap Slope*VU-Case	\$1.2	0.67	No significant difference in During-Wrap slope

The similarity of total cost history can be seen in the timelines in **Figure 90**.

**Figure 90. Cost During 4 Years: MCSC Non-Vanderbilt Versus Vanderbilt Research Cases**



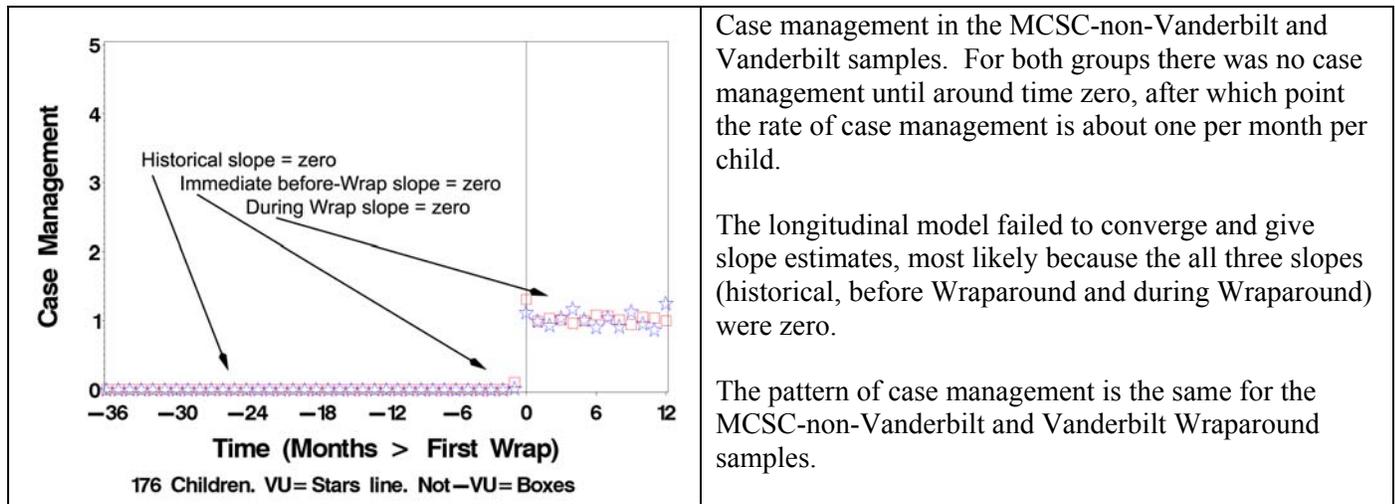
The left figure shows raw mean total dollar costs with considerable overlap during most of the 4 years shown. According to longitudinal analysis the intercept (total cost at time zero) and the three slopes in the model chart are not significantly different.

**Figure 89** and **Figure 90** suggest that the cost history of the 112 MCSC Demonstration participants who were not in the Evaluation Group and the 64 Vanderbilt cases (those in the Evaluation Wraparound Group and also in the MCSC group of 180) is the same before and during Wraparound.

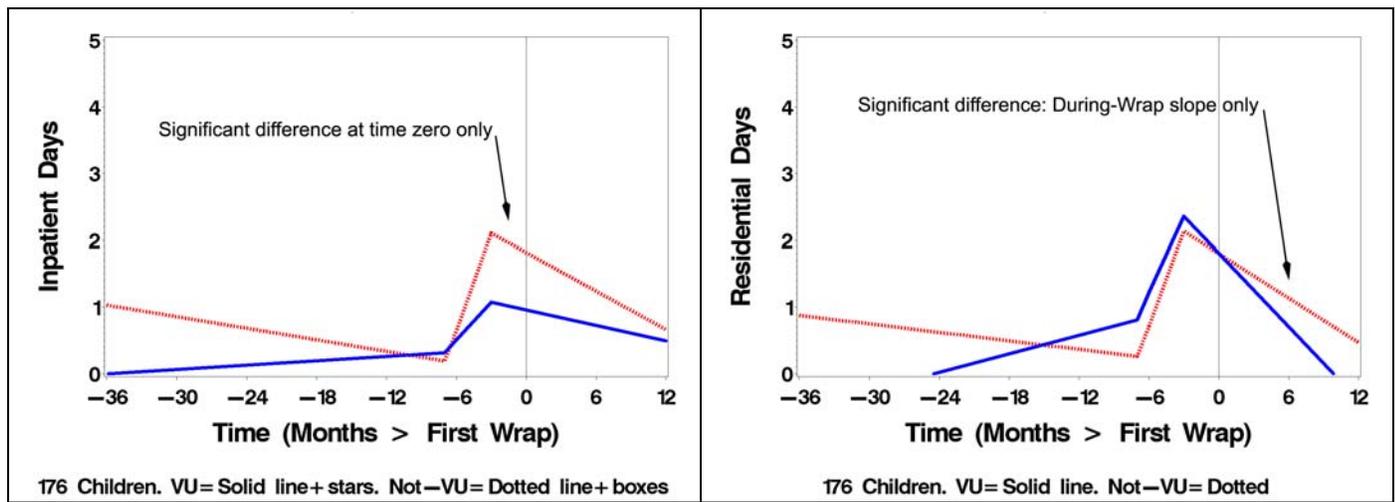
Further comparisons were performed with the chief sources of cost, case management, inpatient hospital days, and residential treatment days. Case management is not expensive per day, but it is charged by the month, whereas inpatient and residential have high daily rates but a low average number of days. Again, a combination of graphics and longitudinal modeling is used to compare the two groups, starting with case management.

For case management, the longitudinal model failed to converge, most likely because the all three slopes (historical, before Wraparound and during Wraparound) were zero. As the rates of case management in **Figure 91** are examined, it is not a surprise that the piecewise linear slope model could not be estimated.

**Figure 91. Case Management Histories Same in MCSC non-Vanderbilt and Vanderbilt Samples**



**Figure 92. Inpatient and Residential Histories Show Some Differences**



For inpatient histories, the three slopes were not significantly different for MCSC-non-Vanderbilt and Vanderbilt cases. However the intercept (inpatient days per month at time zero) was significantly higher for MCSC-non-Vanderbilt cases. Residential days showed the same intercept and slopes, except for the during-Wraparound slope, which showed a significantly steeper decrease for Vanderbilt research cases.

3.3.3.4 Limitations of Cost Analysis as Performed

The Wraparound cost and service utilization sections are based on HCSR claim data. It is assumed that all costs above charges paid to providers are equal between the Wraparound and TAU Comparison Groups or would be if this program were to be implemented in the future (rather than as a Demonstration program). Administrative costs of running the Wraparound Demonstration and any shortrun and longrun indirect wraparound costs or externalities are not included in the above analysis. In addition, some analysis of the worldwide claims data (rather than just Central Region) for the 612 children referred to the Wraparound Demonstration had been planned. Thus, one limitation of the current dataset is that we do not know whether a child was in the Central Region and not needing or receiving mental health services, or outside of the Central Region and receiving mental health services that are not represented in this

dataset. Only a portion of the worldwide dataset needed to perform these analyses had been received. Similarly, the date of TRICARE eligibility was not considered since it was not supplied. However, it is not expected that either of those issues would apply differently to the Wraparound and TAU Comparison groups, and so would not have affected the comparative cost results reported or the mental health findings, which came from parent-reported data only.

## **PART 4: FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS**

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Among other major findings, the Mental Health Wraparound Demonstration Evaluation determined that although the Demonstration did appear to meet some of its objectives, it did not affect clinical outcomes. The study conclusions suggest that several possible factors played a role in this result, and the negative outcomes of this and previous studies governed the recommendations for further study of the efficacy and cost-effectiveness of mental health programs for children.

### **4.1 Findings**

The Evaluation findings, conclusions, and recommendations are based on analyses of data from two sources. Service utilization (e.g., case management, therapy, hospitalization) data and cost data came from DoD-provided files. Evaluation project data were collected from seven clinical interviews per family conducted with parents and children in both the Wraparound Demonstration and the Treatment as Usual (TAU) Comparison Group during a 6-month period. The major findings are presented in the context of methodological constraints and should be reviewed with an understanding of these issues:

- Although the planned sample size of 300 clients was not achieved—111 children participated in the Evaluation—statistical power was sufficient to detect small effects from parent respondents and medium size effects from child respondents with longitudinal analysis.
- There was no evidence that the timing of the data collection, differential attrition between groups, or the selection of children into the Wraparound or the TAU Comparison Groups biased the results.
- Some analysis of the worldwide claims data for the 612 children referred to the Wraparound Demonstration had been planned but was not completed because the necessary data were not received. The date of TRICARE eligibility also was not considered since it was not supplied. Therefore, the range of data does not account for movement of participants into or out of the region. However, it is not expected that those issues would apply differently to the Wraparound and TAU Comparison groups, and so would not have affected the comparative cost results reported or the mental health findings (which came from parent-reported data only).
- Although the range of data reflects diverse methods of care management, patterns that affect this scenario are not expected to differ by group.
- Because of budget cuts to the project and approved changes to the study design, data collections regarding the effectiveness of the Wraparound Demonstration were limited and did not include input from clinical sources, providers, or case managers. Although including these data—as was originally planned—would have enhanced the Evaluation, it is not believed that these limitations invalidate the findings reported.

Major findings of the Evaluation follow:

- Demonstration participants had fewer days of residential treatment than did the children in the TAU Comparison Group. Days of hospitalization and the use of polypharmacy are two measures that did not differ between the two groups.

- There is strong evidence, both from parent self-report and the HCSR data, that the Demonstration met most of its objectives in terms of service use. The children in the Wraparound Group experienced more continuity of care and received more wraparound services—such as case management, in-home treatment, and other nontraditional services—than those in the TAU Comparison Group.
- Intermediate outcomes such as degree of “wrap” judged by parents and children, the helping behavior of the therapists, and therapeutic alliance did not differ between the Wraparound and TAU Comparison Groups. The only difference in intermediate outcomes between the two groups was that parents of children in the TAU Comparison Group reported fewer contacts with their therapists. However, it should be noted that the measure of “wrapness” was a preliminary scale for which there were no psychometric measures and one that the authors of the scale abandoned without any further development. At best, we can say there is no evidence that the content or the quality of the services were different for the Wraparound children.
- The mental health outcome data are clear. There were no consistent differences between the two groups. Both groups showed some improvement over time in some measures but there were no significant differences in functioning, symptoms, life satisfaction, positive functioning, or sentinel events.
- The cost outcomes also are apparent. Regardless of which statistical model was used to estimate costs, the outcomes show that the Demonstration was more expensive. During the Demonstration, the average cost to treat a child in the Wraparound Group was \$12,912, in contrast to \$7,469 for a child in the TAU Comparison Group. The increased costs resulted from the longer duration of treatment for the Wraparound Group (which had greater continuity of care), and although some of the services those children received cost less per day than inpatient care, they received more of these services and thus accounted for the greater average cost.
- The TAU Comparison Group was clearly more cost effective, since the clinical outcomes are indistinguishable for the two groups and, as mentioned above, the cost outcomes favor the TAU Comparison Group.

## 4.2 Conclusions

There are several possible reasons for the failure of the Wraparound Demonstration to affect clinical outcomes. First, we would argue that the logic chain between the types of services introduced in wraparound and clinical outcomes may be too long. By this we mean that the changes produced by wraparound must express themselves through changes in treatment and subsequent clinician-client interactions. It is not clear that the introduction of a case manager and the existence of services in the home would directly affect treatment. Because of this, it is unlikely that wraparound changes can be sufficiently powerful to have the desired effects on client level outcomes.

A second possibility is that the ability to identify and assign youth to appropriate services is not sufficiently well developed. Can we successfully match child needs to the types of services? For example, wraparound assumes that case managers can reliably assign children to appropriate services (Friedman & Street, 1985). However, the only empirical research examining this issue found that clinicians were not reliable in their placement decisions (Bickman, Karver, & Schut, 1997). Other assumptions underlying “wraparound” also may be inaccurate, such as assuming that outcomes depend on factors including continuity of care, keeping children in treatment, comprehensiveness, and offering a

variety of services. Wraparound projects can greatly affect those variables, but it has not been demonstrated in the child and adolescent area that these factors can affect individual or family outcomes.

Finally, while there is substantial evidence of the efficacy of psychotherapy under laboratory-like conditions, there is inadequate evidence of its effectiveness in community treatment (Weisz, Donenberg, Han & Weiss, 1995). For services provided to children and adolescents, the picture is even more discouraging. There is not a body of evidence that suggests that many of the innovative community-based treatments, such as home-based treatment or day treatment, are effective (Rivera & Kutash, 1994). These results suggest the very logical conclusion that regardless how services are delivered, if they are not effective then they will not improve clinical outcomes. All these factors play a role dampening enthusiasm for wraparound efforts as an approach to outcomes improvement.

The negative results of two previous programs—the U.S. Army's Fort Bragg Child and Adolescent Mental Health Demonstration and the Stark County, OH systems reforms (Bickman, 1999; Bickman et al., 1995, 1997, 1999, 2000)—along with the current Wraparound Evaluation results, are convincing that reform is needed at the treatment or services level. All three studies showed that system reform could affect system-level outcomes such as cost (usually increasing), but that it did not influence individual or family outcomes such as increased functioning or reduced symptoms.

### **4.3 Recommendations**

There appears to be no compelling reason to continue to study the Wraparound approach to mental health service delivery. Studying Wraparound (or any other service delivery method) puts at least some of the focus on the procedures. We recommend that the focus of future studies be squarely on clinical outcomes with particular emphasis on the measurement of progress and results.

Current knowledge about mental health treatment for children and adolescents suggests that no standardized treatment has been studied sufficiently. Therefore, it is critical that mental health service systems have the ability to measure symptom severity, functioning, hopefulness, and therapeutic alliance concurrent with treatment. It is necessary to conduct repeated measurement of progress over time because outcome prediction cannot be conducted with baseline data alone (Lambert et al., 2001). In addition, as part of monitoring and quality improvement, the child's progress during treatment must be measured. Without ongoing measurement, there will be no way to determine if any of the reforms or innovations—at the treatment or system level—make a difference to children and families.



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## **Appendix A: MHS Strategic Plan**

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# MHS Strategic Plan

## I. OVERVIEW

The Military Health System (MHS) is positioned to be the benchmark health care delivery system of the 21st Century, emphasizing readiness, health promotion, and managed care for all Armed Forces personnel, their families and others eligible for care. This strategic plan demonstrates the commitment of our Tri-Service teams to face, together, the challenges inherent in our changing roles and missions, as well as those being brought on by revolutionary changes within the health care community. These joint efforts support and promote collaboration, team building, and reengineering across the continuum to enhance quality, curb costs, and ensure access to all entrusted to our care.

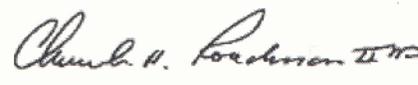
By setting clear goals, preparing for possible eventualities, and assessing our resources and missions, we will be prepared to support both our operational and peacetime responsibilities. This "living document" will remain flexible while promoting a constancy of purpose for long-term strategic guidance. The mission, values, vision, goals, and strategies reflect our joint commitment to continuous improvement as we strive to integrate all aspects of this plan into our daily operations.



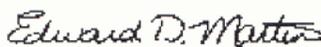
LTG Ronald R. Blanck  
Surgeon General of the Army



VADM Harold M. Koenig  
Surgeon General of the Navy



Lt Gen Charles H. Roadman, III  
Surgeon General of the Air Force



Edward D. Martin, M.D.  
Acting Assistant Secretary of  
Defense  
(Health Affairs)

**NOTE:** The MHS was previously titled the Military Health Services System (MHSS). The word services has been dropped in recognition that health, as a desired outcome, encompasses much more than just the provision of services.

## II. MISSION, VALUES AND VISION

### Mission:

The Military Health System (MHS) supports the Department of Defense (DoD) and our nation's security by providing health support for the full range of military deployments and sustaining the health of members of the Armed Forces, their families, and others to advance our national security interests.

### Values:

We are dedicated to the traditional military values of duty, honor, courage, and loyalty in service to our Nation. As members of the MHS, we are also faithful to the following values:

Integrity: Doing the right thing, for the right reasons, with credibility and candor.

Commitment: Selfless service, loyalty to others, and performance anchored by principle.

Caring: Compassion, regard, and respect for others - reaching out and treating others as we expect to be treated.

Excellence: Outstanding performance of duty characterized by technical and tactical proficiency, imagination, and innovation in a climate of continual learning.

Our values bind the organizations and individuals of the MHS. Every member of the MHS -- active, reserve, and civilian -- must understand and live by all of these values.

### **Vision:**

An enterprise providing health support for the Nation's security, the MHS:

- Fields a uniquely trained, equipped, and qualified team to meet the health needs of the fighting forces anytime, anywhere.
- Projects military health forces worldwide to advance our national security interests.
- Promotes a model health system valued by commanders, and all others we serve.
- Functions as an integrated and accountable health team.
- Develops leaders through continuous individual and organizational learning.
- Takes advantage of research and technology to advance health and readiness.
- Promotes health through the best practices of prevention and intervention.

## ***III. GOALS AND STRATEGIES***

### **GOAL 1—Joint Medical Readiness**

We will help to ensure that military members of the Armed Forces attain an optimal level of fitness and health and are protected from the full spectrum of medical and environmental hazards. Our medical forces will meet the challenges of a rapidly changing continuum of Service-specific, joint, and combined military operations anywhere at anytime.

The continuum of military operations covers a myriad of medical readiness requirements. These requirements must be executed in an environment of increasing uncertainty and diminishing resources. The primary mission of the MHS is to ensure that our combatant commands have the most capable medical readiness support to meet their ever-changing mission. Our strategies must ensure that we are doctrinally prepared; can support operational requirements; and are well trained, resourced and ready to meet the challenges of our overall mission.

#### **Strategies**

- Strive to improve the health and fitness levels of our Armed Forces on a continuing basis.
- Deploy a doctrinally sound medical force that is well trained and equipped to accomplish its

mission.

- Advocate research and technology that can optimize human performance and enhance force medical protection.

## **GOAL 2—Benchmark Health System**

We will be the world's best integrated health system.

The MHS spans the continuum of health care from the operational and readiness mission to the delivery of the health benefit. To accomplish this, we must optimize use of the three Service medical departments to meet the MHS mission. Only in this way can we be health- and fitness-focused and responsive to customer needs where cost, quality, and access are paramount.

### **Strategies**

- Communicate the TRICARE benefit so our customers will be educated and responsible consumers.
- Promote prevention and wellness as the foundation of the system.
- Deliver state-of-the-art, outcome-oriented, compassionate care.
- Measure health outcomes and customer satisfaction to identify opportunities for improvement.
- Measure MHS leadership, management, and technical skills.

## **GOAL 3—Healthy Communities**

We will forge partnerships to create a common culture that values health and fitness and empowers individuals and organizations to actualize those values.

The complexity and tempo of military operations requires optimal human performance (reflecting complete physical, mental, and social well-being). In addition, diminishing resources must be targeted to maintain and promote healthy individuals, workplaces, and communities.

### **Strategies**

- Utilize comprehensive, population-based, medical information systems as a foundation for evidence-based disease prevention and health decision making.
- Develop partnerships among the MHS, other Government agencies, and the private sector to create healthier environments and workplaces.
- Provide necessary health information to commanders, policy makers, and individuals who can act to influence health and prevent diseases and injuries.
- Sustain the prevention culture at home and abroad, in peace and war.

## **GOAL 4—Resources and Structure**

We will identify and prioritize resource requirements and establish effective and efficient organizations to support the readiness and benefit missions.

The identification and prioritization of resource requirements and efficient organizations is critically

important to the ultimate acquisition of resources to support MHS programs.

### **Strategies**

- Identify and resource medical readiness requirements to meet the rapidly changing continuum of military operations.
- Develop and use analytical models to determine resource requirements for manpower, education and training, facilities, materiel, and equipment.
- Use cost/benefit analysis to determine when outsourcing and privatization are appropriate alternatives for achieving the MHS mission.
- Use best-practice models to achieve maximum efficiencies.
- Employ organizational structures that best support the readiness, efficiency, and effectiveness of the MHS.

## **GOAL 5—Training and Skills Development**

We will train and develop our people for their roles in war and peace.

Well-trained people are the bedrock of a successful health system. Achieving our strategic goals will require developing plans to educate, train, and retain highly qualified and diverse personnel at all levels of the system.

### **Strategies**

- Provide an integrated system of education, training, and professional development to produce skilled leaders and managers at all levels.
- Provide education and training programs to maximize the quality of the medical force.
- Establish requirements-based training criteria to support the MHS mission.
- Pursue opportunities to consolidate, integrate, privatize, and/or outsource training programs.
- Encourage and support a policy of inclusion and advancement for persons representing a variety of backgrounds.
- Promote technology and innovation for education and training.

## **GOAL 6—Technology Integration**

We will integrate technologies into best practices designed to achieve high quality clinical outcomes, decrease health care delivery costs, and improve management processes.

To obtain the full benefit of new technology, we are committed to a value analysis of all requirements. For the integration of new technology to truly succeed, we must provide a measurable performance result that is connected to improvement, increased efficiency, information dominance, and mission accomplishment.

### **Strategies**

- Identify the full range of technologies needed to accomplish the MHS mission.
- Plan for, assess, obtain, install, and maintain technologies to provide cost beneficial,

interoperable solutions to meet MHS requirements.

- Train to insert and sustain new technologies.

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## ***THE PLAN REVISION PROCESS***

The initial strategic plan for the MHS was published in May 1995. The forum and the Hoshin Planning Methodology used in the development of that document were maintained. Some changes in personnel have occurred, but the process has remained intact. This process is the mechanism by which the guiding members of the MHS envision its future and develop the necessary procedures and operations to attain that future.

In March 1997, the strategic planning workgroup embarked on the first revision of the strategic plan. At that time, the workgroup felt there was sufficient impetus to support a re-look at the original MHS Strategic Plan. This impetus came from a number of sources. First, there was a charge from the Executive Members of the Strategic Planning Committee to reevaluate the plan. Second, there was input from the MHS 2020 initiative. This was an extensive futures exercise that peered 25 years into the future. It was a one-year effort that involved over 200 military and private-sector health professionals, along with world-renowned futurists. This process developed four alternative futures and traced 10 critical elements through each of these futures. The group then addressed what near-term steps could be taken that would facilitate the realization of a preferred future rather than merely waiting for the future to happen. Part of the charter of this group was to evaluate the MHS Strategic Plan to see whether it provided the near-term stepping stones toward the preferred future. The group provided valuable input to the strategic planning process. Finally, there was feedback from the February 1997 TRICARE Conference where two focus groups convened and provided responses to specific questions regarding the MHS Strategic Plan.

The workgroup reviewed and incorporated this input/feedback to produce an initial draft revised plan. The draft, though similar in content to the first plan, had some significant differences, including a Statement of Values, that was strongly recommended by the MHS 2020 initiative. Additionally, the workgroup felt the need to break out the concept of health and fitness into a separate goal. The draft went through two additional feedback iterations with the field before finalization. The MHS leadership felt strongly that feedback was essential to elicit ownership and buy-in from the field.

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## ***MAJOR STRENGTHS, WEAKNESSES, OPPORTUNITIES, or THREATS CONSIDERED***

The workgroup reviewed all activities related to internal and external factors that had been accomplished for the initial strategic plan. In reviewing the environment to be considered, a multitude of internal and external factors were identified. They were classified into categories of major strengths, weaknesses, opportunities, or threats (SWOT), which helped the workgroup to focus effectively on key areas of concern.

The workgroup sought to prioritize these categories in order to best focus their attention on the key issues. Throughout the plan, emphasis was continually placed in the following major areas:

- Readiness—utilizing joint operations and reserves
- Wellness versus illness

- Managed Care growth—Lead Agent role
- Changes in medical care focus from specialty to primary care
- Technology and business process improvements—outcomes measurement, planning
- Changes identified in mission
- Change in resourcing focus
- Health and fitness

Even after drafting the goals for the MHS, during the development of strategies for particular breakthrough issues, the group continued to consistently identify the above areas for ongoing attention. The interdependency between all these areas has been identified throughout the workgroup's activities and has reinforced the original SWOT activities and the focus for the future.

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## ***PLANNING TEAM MEMBERS***

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BG John Parker\*  
COL Herbert Coley\*  
COL Stuart Baker\*

### NAVY

RADM S. Todd Fisher  
CAPT David Fisher\*  
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CAPT Paul Tibbits\*

### HEALTH AFFAIRS

MG Robert Claypool\*  
Mr. Charles Monfort\*  
Ms. Gwen Brown\*  
Dr. John Mazzuchi

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HMCM Karen Sayers\*  
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J-4  
RADM Michael Cowan\*  
CDR Richard Cocrane\*

OTHER

BG Patrick Sculley  
Mr. Chris LaLonde  
Mr. Al Bemis  
LTC Patti Hamill\*  
Col Mary Martin\*  
CDR Thomas Buffington\*  
Mr. John Casciotti  
CAPT Robert Brawley\*  
Lt Col Russell Eggert\*  
Ms. Lynn Pahland\*  
CMSgt David Bayliss  
CSM Walter Scott  
HMCM(SS) Michael Stewart

COMMAND SURGEON

RADM J.H. Black  
Col Charles Green

LEAD AGENT

Maj Gen Paul Carlton  
BG George Brown

\* Member of the Planning Work Group

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Last update: 1/20/1999



**Appendix B: MCSC Operations Manual, Chapter 23**

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## MENTAL HEALTH WRAPAROUND DEMONSTRATION

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### 1.0. PURPOSE

This Demonstration is to test the following hypothesis:

“Wraparound services provided to child and adolescent mental health patients builds support for the patient which enables shorter inpatient stays through comprehensive and continued management of care, while substantially reducing recidivism for the residential phase of treatment; thereby reducing costs of inpatient psychiatric and residential care.”

This hypothesis will be demonstrated through a community based program of care designed/developed on individual-needs-driven-planning and services to support normalized and inclusive options for child and adolescent mental health patients and their families. This demonstration is designed to be a collaborative effort between the military, the TRICARE Managed Care Support Contractor, ASD(HA), TRICARE Management Activity (TMA) and community based resources.

### 2.0. BACKGROUND

2.1. The Fiscal Year 1996 Department of Defense Authorization Act (P.L. 104-106, Section 716) mandated the Secretary of Defense to conduct a pilot program demonstration to provide residential and wraparound services to children eligible for health care under TRICARE in need of mental health services and who have a serious emotional disturbance that is generally regarded as amenable to treatment. To implement this demonstration, the statute allows the Secretary of Defense to enter into contracts (or amend existing contracts) with managed care support contractors, under which the managed care support contractors agree to organize and operate, directly or through subcontractors, a mental health care network for the provision of wraparound mental health services which are portable within the same TRICARE Region.

2.2. The Statute defined the term “wraparound services” to mean individualized mental health services that are provided principally to allow a child to remain in the family home or other least-restrictive and least-costly setting, but also are provided as an aftercare planning service for children who have received acute or residential care. Wraparound services include nontraditional mental health services that will assist the child to be maintained in the least-restrictive and least-costly setting.

2.3. To comply with this Congressional mandate, the ASD(HA) has designated the existing TRICARE Central Region as the site for this demonstration. Additionally, the ASD(HA) has selected TRICARE Regions 9/10 to serve as the control group for the duration

of this demonstration. The ASD(HA) further directed TMA to modify, with this change, the TRICARE Central Region, and TRICARE Regions 9/10 managed care support contracts to include provisions for implementing this demonstration beginning February 1, 1998, and continuing initially through January 31, 2001. The Demonstration Program is entitled "TRICARE Central Region Mental Health Wraparound Demonstration."

**2.4.** The Statute further authorized funds to cover services provided under this demonstration to children and adolescents of members or former members of the Uniformed Services member meeting the specific requirements outlined under "Applicability" and "Policy" below. There is also a requirement for the provider of service to share financial risk for the wraparound services by accepting as a maximum annual payment for demonstration services a case-rate reimbursement (i.e., capitated rate) not in excess of the annual standard TRICARE residential treatment benefit.

### **3.0. DEMONSTRATION OBJECTIVES AND EVALUATION**

**3.1.** The TRICARE Central Region Mental Health Wraparound Demonstration was designed/developed to examine the following expected objectives/outcomes:

**3.1.1.** Wraparound services will result in improved patient outcomes as evidenced by indicators such as decreased use of polypharmacy, decrease in numbers of missed appointments, decrease in numbers of Against Medical Advice (AMA) discharges, decrease in numbers of elopements from inpatient or residential treatment facilities, and decrease in numbers of patient interactions with the criminal justice system as compared to such indicators in the control group.

**3.1.2.** Wraparound services will reduce family mental health expenditures as compared to the expenditures documented in the control group.

**3.1.3.** Wraparound services will reduce a patient's length of stay in psychiatric inpatient care and/or residential treatment as compared to the control group.

**3.1.4.** Wraparound services will reduce the recidivism rate for the residential phase of treatment as compared to the control group.

**3.1.5.** Wraparound services will result in the experimental group demonstrating at least a 15% reduction over the control group in numbers of days spent in institutions.

**3.1.6.** There will be at least a 50% increase in compliance between the control group and the experimental group in the following areas: keeping therapy appointments, medication compliance and school attendance.

**3.1.7.** All sentinel events (hospitalizations, self-destructive behavior, expulsion from school, juvenile arrests, pregnancy) will be captured in both groups.

**3.2.** The TRICARE Central Region Mental Health Wraparound Demonstration shall evaluate the following Demonstration objectives:

**3.2.1.** The evaluation will assess the goals, objectives, and strategies of this demonstration project including implementation and operational issues as well as program

outcomes. The evaluation will include quantitative and qualitative components to accomplish this task. An analysis of a number of program effects based on such outcomes as cost, use, access, portability, quality and participation will be conducted with data collected during the operation of this demonstration.

**3.2.2.** The evaluation will assess the feasibility of implementing the wraparound mental health service program throughout the military health service system. The evaluation will examine design, development and implementation issues.

**3.2.3.** The demonstration will build data bases on basic information such as the number of cases managed, demographic information, their diagnoses, costs, geographic locations, lengths of stay, treatment modalities and support resources. The data bases will provide a mechanism to monitor the cost-effectiveness, quality, appropriateness and portability of wraparound mental health services.

**3.3.** Participants of this demonstration will be compared to a control group. The control group is all children who meet the same requirements outlined under "Policy" below, who reside in Regions 9/10.

**3.4.** The ASD(HA), or designee, will submit reports to Congress at designated intervals. These reports will outline the demonstration program and/or provide an assessment of the effectiveness of the wraparound mental health demonstration program and the Secretary of Defense's views regarding whether the program should be implemented throughout the military health care system.

**3.5.** Evaluation of the demonstration will be as outlined in paragraph 6.0.

#### **4.0. APPLICABILITY**

The provisions of this demonstration apply to all eligible TRICARE children and adolescents between the ages of 4-16 at the time of entry into the demonstration determined to meet the specific requirements outlined below under "Policy," of a member or former member of the Uniformed Services who live in and are expected to remain in the TRICARE Central Region for the duration of this demonstration. The TRICARE Central Region Mental Health Wraparound Demonstration is available only in the TRICARE Central Region area. The TRICARE Central Region consists of, the extreme western portion of Texas and certain Texas zip codes which are included in the catchment area of Cannon Air Force Base, as well as the States of Arizona (excluding Region 10 zip codes), New Mexico, Nevada, Colorado, Idaho (except for those zip codes which have been previously assigned to TRICARE Region 11), Iowa, Kansas, Minnesota, Missouri (except for those zip codes which have been assigned to TRICARE Region 5), Montana, Nebraska, North Dakota, South Dakota, Utah, and Wyoming. (If required by the contractor, a listing of applicable zip codes for this demonstration may be obtained by contacting the Contracting Officer's Representative for the TRICARE Central Region).

## **5.0. POLICY**

### **5.1. Eligibility**

**5.1.1.** Effective February 1, 1998, and continuing through January 31, 2001, participation in the TRICARE Central Region Wraparound Demonstration is available for those TRICARE eligible children and adolescent patients determined to have a serious emotional disturbance which is generally regarded as amenable to treatment when:

- the TRICARE eligible child or adolescent patient is between the ages of 4-16 at the time of entry into the demonstration; and
- lives in, and is expected to remain in TRICARE Region for the duration of the demonstration; and
- has a valid DSM IV diagnosis; and
- at the time of referral, requires at least the residential/inpatient level of care; or
- at the time of referral is preparing for discharge from a residential or inpatient facility and is at high risk for recidivism.

**5.1.2.** Removal of an eligible child or adolescent from participation in this demonstration requires approval from the ASD(HA) designated Contracting Officer.

### **5.2. Services/Copays**

**5.2.1.** The services/benefits available under this demonstration are "Residential and Wraparound Services." Residential and Wraparound Services are individualized community based mental health services which allow a child to remain in the family home or other least-restrictive and least-costly setting, but are also provided as an aftercare planning service for children who have received acute or residential care. Wraparound Services include nontraditional mental health services that will provide the flexibility needed to assist a child or adolescent to be maintained in the least-restrictive and least-costly setting. Such services may include, but are not limited to:

**5.2.1.1.** Psychiatric in home services.

**5.2.1.2.** Brief, time limited, respite services.

**5.2.1.3.** Therapeutic foster homes.

**5.2.1.4.** Therapeutic group homes.

**5.2.1.5.** Crisis stabilization in group homes.

**5.2.1.6.** Institutional care. However, the contractor shall use institutional care when all other locally available resources have been exhausted. If institutional care is necessary, every effort shall be expended to achieve a minimal length of stay.

**5.2.1.7.** Other residential or nonresidential, ancillary mental health services not included on the above list may be considered for benefits under this demonstration subject to approval from the OASD(HA) designated Contracting Officer Representative (COR). Requests for approval of additional/other services, shall include a detailed summary of each service. Requests for approval of additional services shall be submitted to TMA, Managed Care Support Office. The TMA, Managed Care Support Office will facilitate in obtaining approval of the new wraparound service from the OASD(HA) Contracting Officer Representative for this demonstration. The TMA, Managed Care Support Office will advise the contractor via letter of the OASD(HA) decision. If approved, the TMA, Managed Care Support Office, will prepare necessary contract changes for the new wraparound benefits.

**5.2.2.** Services rendered by nontraditional mental health residential providers shall be delivered in accordance with applicable state rules and regulations governing residential treatment facilities and therapeutic homes. All "study group" demonstration participants, if not already enrolled in TRICARE Prime, shall be designated "enrolled" in Prime for mental health services by the contractor to ensure all mental health services provided under the demonstration are paid in accordance with Prime rules/policies. Copayments and deductibles related to Point of Service cost-sharing shall apply to mental health services for participants of the demonstration for the duration of this demonstration.

**5.2.3.** Enrollment fees shall be waived for "study group" demonstration participants not enrolled in TRICARE Prime. If the demonstration participant is already enrolled in Prime, enrollment fees need not be refunded for the current year, but shall be waived during the subsequent enrollment year. No proration is allowed for "study group" participants when the family is enrolled in Prime.

**5.2.4.** Wraparound mental health services provided under this demonstration shall be portable (i.e., continuation of services as needed during the period of participation even if the eligible child or adolescent moves to another location within the same region, such as moving from Colorado to Idaho, etc.). Portability of services shall include an equal or greater level of quality, and the same degree of accessibility as currently being received by the participant. If the contractor is not able to provide services of equal or greater level of quality or the same degree of accessibility, the contractor shall request, in writing, an exception to this requirement, from the ASD(HA) COR through the TRICARE Central Region COR.

**5.2.5.** Excluded from this demonstration are TRICARE eligible children and adolescents with a valid DSM IV diagnosis which is not generally regarded as either serious and/or amenable to treatment, and mental health services related to custodial care, or which are determined to be primarily educational.

## **6.0. RESPONSIBILITIES**

### **6.1. ASD(HA)/OASD(HA)**

**6.1.1.** Will conduct overall demonstration operations, monitoring, and evaluation.

**6.1.2.** Will develop the demonstration parameters for evaluation of the demonstration, for both participants and the Regions 9/10 control group. The ASD(HA), or designee, may elect to use an unbiased academic third party to perform the data analysis.

**6.1.3.** Will serve as the demonstration ASD(HA) designated Contracting Officer Representative (COR) for the duration of the demonstration. The OASD(HA) demonstration COR's name, address, telephone and fax numbers will be provided to the contractor and the TRICARE Central Region COR no later than 30 calendar days prior to the start of the demonstration.

**6.1.4.** Provide clinical oversight for the duration of the demonstration as necessary.

**6.1.5.** Will collect/track the data needed to meet objectives of this demonstration via medical records.

**6.2. TRICARE Management Activity (TMA)**

**6.2.1.** Will provide overall TRICARE Central Region contract operations, monitoring and evaluation.

**6.2.2.** Will serve as the liaison between the OASD(HA) COR for this demonstration, Managed Care Support Contractor, Lead Agents, and MTFs on all issues related to the demonstration, (i.e., coordination, approval, etc.).

**6.2.3.** Will initiate upon direction from the OASD(HA) designated COR for this demonstration, necessary actions required to support any change or modification necessary to ensure the intent of this demonstration is implemented.

**6.2.4.** Will provide demonstration claims adjudication and support via specific contractual arrangements with the TRICARE Central Region managed care support contractor.

**6.2.5.** Will provide periodic review and evaluation of the demonstration claims adjudication process.

**6.2.6.** Will provide routine Public Affairs functions to properly inform and periodically update the patient and provider communities regarding the terms of this demonstration.

**6.2.7.** Will provide specific written guidance via this document to the TRICARE Central Region managed care support contractor regarding claims adjudication services to be provided during the duration the demonstration.

**6.2.8.** Will ensure all parties are provided via letter of all Point of Contact information required for coordination of this demonstration.

**6.3. Military Treatment Facility (MTF) Responsibilities**

**6.3.1.** Will actively participate with and support this demonstration in coordination with the contractor through appropriate patient identification, and making available the use of all available MTF services which may be medically appropriate to maintain a beneficiary's optimal mental health.

**6.3.2.** When requested, will work with the contractor in developing the services or individualized treatment plans required under this demonstration to ensure both quality and cost-effectiveness.

**6.3.3.** Will assist the contractor in maintaining residence of the members or former members and their families of the participants in this demonstration within the TRICARE Central Region area for at least two years.

**6.3.4.** Will work with the contractor to develop methods to ensure members or former members and their families maintain active family involvement in the participants treatment program when required to obtain the participants optimal mental health.

**6.3.5.** Will designate a specific Point of Contact for this demonstration. Name of Point of Contact, address, telephone and fax numbers, shall be provided to the Contracting Officer, the Contracting Officer's Representative, the Lead Agent, and the managed care support contractor no later than 30 calendar days prior to the beginning date of the demonstration.

**6.3.6.** Will ensure Health Benefit Advisor cooperation in providing correct information on the requirements of the demonstration to beneficiaries, assistance with claims processing problems related to the demonstration, and development of a close working relationship with the demonstration case manager to ensure maximum use of available MTF resources when required.

#### **6.4. Control Group Contractor(s) - Regions 9/10**

**6.4.1.** Shall identify beneficiaries within their regions who meet the TRICARE Central Region Wraparound Mental Health Demonstration qualifying parameters for participation, outlined under "Policy" in this section, and are recommended for inpatient treatment.

**6.4.2.** Shall provide the OASD(HA) COR with a list of these beneficiaries no later than the 15th of every month. The first report is due 75 calendar days after the start of the demonstration.

**6.4.3.** Shall upon request from the OASD(HA) COR allow access to control group identified patient's medical record information, including but not limited to, the psychiatric assessment and evaluation performed by the admitting and/or treating psychiatrist, psychosocial history and other clinical assessment data.

**6.4.4.** Shall designate, per region, a Point of Contact, to assist in providing control group information for comparison. Shall provide name of each Point of Contact, address, telephone and fax numbers to the OASD(HA) Contracting Officer, and the COR no later than 30 calendar days prior to the start of the demonstration.

**6.4.5.** Shall continue to follow existing procedures/processes established for the review of mental health services within their region(s).

#### **6.5. Study Group Contractor(s) - TRICARE Central Region**

**6.5.1.** Shall designate an individual as the TRICARE Central Region Mental Health Wraparound Demonstration Point of Contact, and provide the OASD(HA) COR and the

TMA COR with the name, address, telephone and fax numbers no later than 30 calendar days prior to the start of the demonstration.

**6.5.2.** Shall establish a Clinical Management Committee for the purpose of overseeing the quality of the clinical programs included in this demonstration project. This committee shall consist of, at a minimum, a Director who is a Board Certified child/adolescent psychiatrist with at least five years clinical experience and has an active practice (i.e., includes consulting, teaching practices, etc.), a Doctoral level clinical psychologist, a Masters level psychiatric social worker, a Masters level psychiatric nurse and a clinical representative from the other respective Lead Agents. The clinical management committee may include other multidisciplinary members as the contractor deems necessary.

**NOTE:** This Committee shall serve in an advisory capacity to the case managers and local providers only and may not remove any participant from this demonstration without the OASD(HA) COR's prior consent. Additionally, this committee shall not act as a clinical assessment team. Rather the committee shall be responsible for ensuring clinical quality management throughout the demonstration region. The Committee shall also serve as a resource for individual case managers/providers. Disputes which arise between a case manager and local provider over the necessity for a service/benefit shall be directed to the Committee's Director for resolution. If the Committee's Director disagrees with the local provider, peer to peer consultation is required before the service/benefit is denied.

**6.5.3.** Shall establish and maintain an exclusive mental health network (i.e., not automatically including all providers who request inclusion) to support the TRICARE Central Region Wraparound Mental Health Demonstration. This network may be comprised of existing managed care support contractor mental health network providers, MTF mental health providers, and new providers of unique wraparound mental health services. All providers must be practicing within the scope of his/her licensure. The contractor shall:

**6.5.3.1.** Shall certify all mental health providers of care, with the exception of those provider certification functions retained by the government, following the existing TRICARE Central Region managed care support contract requirements and TRICARE policies and procedures for certification of, validation of, and maintenance of provider certification/credentialing records and computer files, etc.

**6.5.3.2.** Shall ensure, at a minimum, all providers of unique wraparound mental health services (i.e., therapeutic group home, foster day care, etc.) meet national/local licensing standards and/or credentialing requirements.

**6.5.3.3.** Shall ensure all TRICARE authorized mental health providers treating participants of this demonstration are tied to the managed care support contractor via a provider agreement. At a minimum, the provider agreement shall assure compliance with all current provider agreement requirements of the TRICARE Central Region managed care support contract, including but not limited to, provisions to accept assignment of all claims, accurately complete all claims submissions, the requirements of the TRICARE Central Region Mental Health Wraparound Demonstration, and any quality improvement program developed by the contractor and case manager as applicable. Provider contracts shall also contain a provision which authorizes the National Quality Monitoring Contractor to release all review data to the contractor. The contractor shall provide the OASD(HA), Contracting Officer Representative, with a sample of the current contractual provider agreement 60

calendar days prior to start of the demonstration, if using other than the network provider agreement approved as part of the TRICARE Central Region network provider plan. Existing mental health network provider agreements need not be redone, if the contractor obtains written documentation signed by the provider on the providers letterhead which indicates the provider agrees to adhere to demonstration provisions.

**6.5.3.4.** Shall require certification of all demonstration providers. Recertification/credentialing of providers certified within the last 12 months is not required to ensure that state licenses, board certification or recertification, an absence of Medicare/Medicaid/TRICARE sanctions, etc. are still current. However, when recertification is required by the managed care support contract, the contractor shall follow existing contract requirements for certification/credentialing.

**6.5.3.5.** Shall ensure providers designated as network individual professional providers, non-institutional and institutional providers offer discounts which follow the provider reimbursement requirements required in the TRICARE Central Region managed care support contract and by this demonstration.

**6.5.3.6.** Shall ensure during network development, inclusion of at least two comprehensive mental health treatment facilities that offer the full range of mental health services including, inpatient treatment, residential treatment, partial hospitalization, and outpatient treatment. These facilities shall have local capabilities (within 50 miles of the beneficiary's residence) to provide all necessary follow-up services (after discharge from inpatient or RTC care) to sustain optimal mental health. If necessary, the location of the comprehensive mental health facility may be greater than 50 miles of the participant's residence. The contractor shall obtain this consent from the patient, or parent/guardian in writing, and request approval from the OASD(HA) COR. However, all services excluding inpatient care shall be accessible in the participants community. The contractor shall notify the OASD(HA) Contracting Officer's Representative of the name and location of the comprehensive mental health facilities no later than 30 calendar days prior to start of the demonstration.

**6.5.3.7.** Shall continue to comply with the minimum access standards/guidelines required by the TRICARE Central Region managed care support contract, including the provisions for emergency referral and emergency services within the demonstration area 24 hours a day, seven days a week, and Primary Care Manager (PCM) access on a same day basis via telephone or appointment, 24 hours a day seven days a week.

**6.5.3.8.** Shall be responsible for all provider marketing, education and relations functions necessary to initiate and maintain this demonstration. All provider marketing, and educational material shall be made available by the contractor to all Military Treatment Facilities, TRICARE Service Centers, Lead Agents, beneficiaries and providers, both network and nonnetwork, within the demonstration area via methods consistent with current TRICARE Central Region contractual requirements. No later than 30 calendar days prior to the start of demonstration, the contractor shall obtain Contracting Officer approval for all marketing materials developed for use during this demonstration. As part of the demonstration marketing, the managed care support contractor shall send a notification of all review requirements, such as preauthorization, concurrent and retrospective review, and review criteria to be used during the demonstration, etc., no later than 30 calendar days prior to the start of the demonstration. Approval of materials will be valid for one year.

**6.5.3.9.** Shall maintain a list of all network providers who have signed agreements to provide care under this demonstration. This list shall be updated monthly or more frequently as changes occur and shall be provided by the 15th of each month to the Case Managers, the OASD(HA) COR and the TMA COR, the Health Benefits Advisors, the Lead Agents and the MTFs.

**6.5.4.** Shall furnish utilization management of the care provided as part of the TRICARE Central Region Mental Health Wraparound Demonstration. To accomplish this the contractor shall:

**6.5.4.1.** Establish and maintain a written Utilization Management (UM) Plan which describes fully all processes, procedures, criteria, staff and staff qualifications, information data collection activities, and requirements the contractor shall use in conducting utilization management activities under this demonstration, to include the specific roles and duties of the case manager in approving the care. The contractor developed UM Plan shall at a minimum include requirements for:

**6.5.4.1.1.** Use of the mental health review criteria prescribed by the TRICARE Central Region managed care support contract, Section C, Task III,d.(5), J-3, currently under Attachment 9, and no other for review of those types and levels of mental health care included in the TRICARE Program.

**6.5.4.1.2.** Continued use of existing mental health review processes and requirements, including utilization review staff qualifications, as proposed/approved under the TRICARE Central Region managed care support contract for all beneficiaries.

**6.5.4.1.3.** Provisions for access to qualified mental health professionals at each TRICARE Service Center location for the purpose of screening and evaluating potential demonstration participants, within 72 hours of identification as a potential project participant.

**6.5.4.1.4.** Provide for an adequate number of qualified mental health providers to provide care to demonstration participants.

**6.5.4.1.5.** Establish methods for the identification of potential participants for the demonstration through existing preauthorization process, concurrent and retrospective review processes, or PCM/MTF referral, etc. The contractor shall update written review procedures and policies to include demonstration requirements/benefits/parameters for eligibility, and procedures for becoming a participant in the demonstration. The procedures and policies shall be available at the start of the demonstration and shall be provided by the contractor to the OASD(HA) COR, upon request.

**6.5.4.1.6.** Perform an initial evaluation of the participant at the nearest designated comprehensive treatment facility.

**6.5.4.1.7.** Assign a demonstration case manager for each demonstration participant, upon initial evaluation at the comprehensive treatment facility, who will be responsible for the coordination and monitoring of all services provided by each member of the participant's treatment team. The contractor shall ensure that the position of case manager is held by an individual meeting the educational requirements of a masters prepared registered psychiatric nurse, licensed masters prepared psychiatric social worker, or a doctoral level

clinical psychologist, all of whom must have at least two years of case management experience. The case manager's responsibility shall exceed traditional utilization management functions. The case manager shall serve as a link between participants, providers, the contractor/subcontractor, the OASD(HA) and the TMA CORs, the Lead Agents and the MTFs. The primary responsibility of the case manager shall be to develop guidelines/procedures that contribute to the goals of the demonstration. The case managers shall, beyond case coordination, have the authority to make implementation decision about the provisions of all mental health services required by a participant. Case managers shall maintain a current care plan that shall be presented to the clinical management committee upon entry into the demonstration and quarterly thereafter. The quarterly care plan shall include a quantified evaluation of the improvement of the patient using the metrics of the demonstrations. The contractor shall ensure the case managers workload shall be appropriately structured to allow case managers sufficient time to properly and timely perform all review, coordination, consultation, research, notification, administration and reporting functions required under this demonstration. Under no circumstances shall a full-time case manager's case load exceed 15 beneficiaries (part-time case managers' case loads shall be proportional). THE DEMONSTRATION CASE MANAGER SHALL NOT NEGOTIATE OR DENY THE LEVEL OF CARE OR SERVICE REQUESTED.

**6.5.4.1.8.** (Assign a PCM for each demonstration participant. This PCM will be ultimately responsible for the demonstration participant's overall medical care.) The Case Manager is responsible for coordination of mental health care under the demonstration.

**6.5.4.1.9.** Provide for emergency referrals and access to 24 hour treatment.

**6.5.4.1.10.** Provide policies and procedures for outlining crisis stabilization treatment/methods based on current standards of practice within the mental health community.

**6.5.4.1.11.** Develop specific policies and procedures for timely processing of non-emergency referrals, including time frames for gathering pertinent data from the appropriate sources.

**6.5.4.1.12.** Establish procedures for regularly scheduled Treatment Team Reviews with treatment plan modifications as necessary at each service location.

**6.5.4.1.13.** Establish measurable goals for the internal monitoring and improvement of the UM Plan as well as the criteria for measuring improvements

**6.5.4.1.14.** Establish procedures/processes for authorization/notification of the provider and claims processor, to include samples of the authorization/notification for OASD(HA) COR approval 30 calendar days prior to start of demonstration.

**6.5.4.1.15.** Definitions for all wraparound services provided under the demonstration.

**6.5.4.2.** The contractor shall submit for OASD(HA) COR's approval, the UM Plan 30 calendar days after issuance of the contract modification. The OASD(HA) COR will provide written approval to the contractor within 15 calendar days of receipt.

**6.5.4.3.** The contractor shall ensure the participants' case manager verifies eligibility for the TRICARE Program on the Defense Enrollment Eligibility Reporting System (DEERS) prior to authorizing care under this demonstration.

**6.5.4.4.** The contractor shall be responsible for the following information collection and reporting requirements:

**6.5.4.4.1.** The establishment and maintenance of a database of participants in the demonstration which includes the following patient data and routine medical record intake data requirements for:

- Participants: name, sponsor name and social security number, 5 digit zip code, date of entry into demonstration, the source of referral, diagnosis, age, care costs, specific type of care authorized and length of time care was authorized.
- Beneficiaries screened as ineligible for demonstration participation: name, sponsor name and social security number, five digit zip code, date of entry into demonstration, the source of referral, diagnosis, age, care costs, specific type of care authorized, length of time care was authorized and reason for denial, and alternative care provided the ineligible beneficiary. All sentinel events (hospitalization, self-destructive behavior, expulsion from school, juvenile arrests, and pregnancy) will be tracked.
- Total number of beneficiaries identified, screened, assisted, by beneficiary category, military affiliation, source of referral service or assistance required or requested.

**6.5.4.4.2.** The data shall be electronically transferred to the OASD(HA) COR via a format agreed upon by the contractor and the OASD(HA) COR no later than the 15th of each month.

**6.5.4.4.3.** Other ad hoc reports not to exceed five, which may be specified by the OASD(HA) COR during the demonstration period.

**6.5.4.5.** The contractor shall be responsible for the processing and payment of claims for participants of this demonstration in accordance with existing TRICARE Central Region managed care support contract claim processing requirements, including HCSR reporting requirements. HCSR reporting will be used for cost-comparison.

**6.5.4.6.** The contractor shall comply with the TRICARE appeals policies, procedures and processes required by current TRICARE rules and regulations as specified under the current TRICARE Central Region managed care support contract.

**6.5.4.7.** The contractor shall share financial risk by accepting as a maximum annual payment for such services a case-rate (i.e., capitated rate), determined via modification. The capitated rate (case-rate) will be paid one month in arrears. The contractor will bill the government one-twelfth of the annual capitated rate for each enrollee covered during the previous month using a DD Form 250. Requests for payment should be sent to TMA-Aurora, Contract Resource Management Directorate.

**6.5.4.8.** The costs paid the contractor affect to a degree those costs incurred as a result of this demonstration. Any equitable adjustment to either the government or the contractor shall be settled through modification.



## **Appendix C: Matrix of DOD Requirements and TriWest/MBC Proposal**



{PRIVATE}Chapter 23, Section 3 Requirements	Section	TriWest Proposal	Section
<b>BACKGROUND REQUIREMENTS</b>			
Control Group shall be from Regions 9 and 10	2.3	Control group – Regions 9 and 10	Tech Prop I., Para 2.
Maximum annual payment – case rate reimbursement not in excess of the annual standard TRICARE residential treatment benefit.	2.4	<b>Administrative costs only:</b> <ul style="list-style-type: none"> <li>• Option year 1 (3/1–3/31/98) \$298,736</li> <li>• Option year 2 (4/1/98–3/31/99) \$1,111,240</li> <li>• Option year 3 (4/1/99–3/31/00) \$1,164,012</li> <li>• Option year 4 (4/1/00–1/31/01) \$1,126,447.</li> </ul> <b>Case rates:</b> <ul style="list-style-type: none"> <li>• Not subject to bid price adjustment.</li> </ul>	3.0
<b>APPLICABILITY</b>	4.0		
Applies to children/adolescents ages 4–16 in the Central Region	4.0.		
<b>POLICY</b>	5.0		
Eligibility Criteria <ul style="list-style-type: none"> <li>• Serious emotional disturbance generally regarded as amenable to treatment</li> <li>• Between ages of 4–16 on entry</li> <li>• Lives in and is expected to remain in Region for duration of Demo</li> <li>• Has a valid DSM-IV dx</li> <li>• At referral, requires at least residential/inpatient care</li> </ul>	5.1	MBC Eligibility Criteria <ul style="list-style-type: none"> <li>• Hx of anti-social behaviors as a result of a treatable mental disorder</li> <li>• Between ages of 4–16 at entry</li> <li>• Resides in Region and expects to remain there</li> <li>• Has a valid DSM-IV dx</li> <li>• Meets HMSI criteria for residential or inpatient or is preparing for discharge</li> </ul>	TP, p.16

<ul style="list-style-type: none"> <li>• Or, is preparing for discharge from an RTC/inpatient and is at risk for recidivism.</li> </ul>		<ul style="list-style-type: none"> <li>• Does not have a hx of substance abuse, poor motivation for rehab.</li> </ul>	
Removal of an eligible child requires CO approval.	5.1.2		
<p>Services covered may include:</p> <ul style="list-style-type: none"> <li>• Psychiatric in home</li> <li>• Brief respite services</li> <li>• Therapeutic foster homes</li> <li>• Therapeutic group homes</li> <li>• Crisis stabilization in group homes</li> <li>• Institutional care</li> <li>• Other residential, nonresidential, ancillary mental health services not included require approval of CIR.</li> <li>• Must include detailed summary of each service.</li> </ul> <p>If approved, TSO will prepare necessary contract changes for the new benefit.</p>	5.2.1	Submitted and will maintain Plan describing all processes, procedures, criteria, staff, staff qualifications, information data collection, UM requirements, specific roles and duties of Case Managers, Anchor Facilities, Acute care, Partial, RTC, Outpatient MH Therapists. Respite, Therapeutic foster, Therapeutic group homes, respite, and in-home psychiatric services.	<p>TP I. Para 3</p> <p>TP, p.8</p> <p>TP p.9</p>
<b>Excluded:</b> Children with a DSMIV dx not generally regarded as either serious or amenable to treatment, custodial care, or primarily educational.	5.2.5	Will screen potential cases, admitting up to 150 during first 12 months. Cases will remain in program for 24 months from date approved for entry.	<b>TP p8</b>
<b>DOD RESPONSIBILITIES</b>			
<p>OASD(HA) will:</p> <ul style="list-style-type: none"> <li>• Monitor and evaluate</li> <li>• Serve as COR</li> <li>• Provide clinical oversight</li> </ul>	<p>6.1.1</p> <p>6.1.3</p> <p>6.1.4</p>		

<ul style="list-style-type: none"> <li>• Track data needed to meet objectives via medical records</li> <li>• Support any modifications necessary</li> <li>• Provide claims adjudication</li> <li>• Provide review and evaluation of claims process.</li> </ul>	<p>6.1.5</p> <p>6.2.3</p> <p>6.2.4</p> <p>6.2.5</p>		
<p>Medical treatment facilities (MTFs) will actively participate</p> <ul style="list-style-type: none"> <li>• Will actively participate through identification of patients and provision of available services</li> <li>• Work with contractor to develop services or treatment plans</li> <li>• Work with contractor in maintaining member residence in area</li> <li>• Work with contractor to ensure members maintain active family involvement</li> <li>• Will provide a specific POC</li> <li>• Ensure HBAs cooperate.</li> </ul>	<p>6.3.1</p> <p>6.3.2</p> <p>6.3.3</p> <p>6.3.4</p> <p>6.3.5</p> <p>6.3.6</p>		
<p><b>CONTROL GROUP MCSC RESPONSIBILITY</b></p>			
<ul style="list-style-type: none"> <li>• Shall provide COR with list of beneficiaries who meet parameters no later than 15<sup>th</sup> of each month.</li> <li>• Shall allow access to patient’s medical record.</li> </ul>	<p>6.4.2</p> <p>6.4.3</p>		
<ul style="list-style-type: none"> <li>• Shall designate a POC within 30 calendar days.</li> </ul>	<p>6.4.4</p>		



		<ul style="list-style-type: none"> <li>• Ensures clinical QM throughout Region</li> <li>• Resource for Care managers</li> <li>• Meets at least monthly.</li> </ul>	
<ul style="list-style-type: none"> <li>• Establish and maintain an exclusive mental health network</li> <li>• Certify all mental health providers of care</li> <li>• Credential providers of "unique" wraparound services</li> <li>• Ensure that all providers have provider agreements with TriWest</li> <li>• Release Demonstration information to the NQMC</li> <li>• Certifies/re-certifies all providers</li> <li>• Ensure that Providers offer discounts</li> <li>• Network includes at least two comprehensive mental health facilities (i.e., anchor facilities.</li> </ul>	<p>6.5.3</p> <p>6.5.3.1 &amp; 6.5.3.2 6.5.3.3</p> <p>6.5.3.5</p> <p>6.5.3.6</p>	<p>Will develop exclusive provider network: Anchor Facility, acute care, partial, RTC, Opt MH Therapists, respite, therapeutic foster, therapeutic group homes, respite, in-home psychiatric.</p> <p>MBC will utilize comprehensive metal health facilities (Anchor Facilities).</p>	<p>TP p.8</p> <p>TP, p10–14</p> <p>TP, p10</p>
<p>Comply with minimum access requirements</p> <ul style="list-style-type: none"> <li>• Provides emergency referral and services within 25 hours, 7 days a week</li> <li>• PCM access same day via telephone or appointment, 24 hours a day, 7 days a week.</li> </ul>	6.5.3.7	Will provide emergency referral and PCM access as required.	TP, p14
<p>Marketing materials</p> <ul style="list-style-type: none"> <li>• Make marketing materials available beneficiaries and providers, both network and non-network.</li> </ul>	6.5.3.8	Will develop provider education and marketing materials and make available to MTFs, Service Centers, etc.	TP, p14
Marketing materials shall include notification of review	6.5.3.8		

requirements to be used, such as preauthorization, concurrent, and retrospective review.			
Provide a list of all network providers, updated monthly and provided to CMs, COR, HBAs, LAs, MTFs.	6.5.3.9		
<p>Establish and maintain a UM plan, to include requirements for:</p> <ul style="list-style-type: none"> <li>• Use of criteria prescribed by the TRICFARE Central Region MCS contract, and no other</li> <li>• Use of existing MH review processes, including staff qualifications</li> <li>• Access to qualified MH professionals for screening and evaluation of potential participants with 72 hours of identification</li> <li>• Provide for an adequate number of qualified MH providers</li> <li>• Establish methods for identifying potential participants</li> <li>• Perform an initial evaluation of the participant at the nearest designated comprehensive treatment facility</li> <li>• Assign a case manager [(4)(a)7].</li> </ul>	<p>6.5.4.1</p> <p>6.5.4.1.1</p> <p>6.5.4.1.2</p> <p>6.5.4.1.3</p> <p>6.5.4.1.4</p> <p>6.5.4.1.6</p> <p>6.5.4.1.7</p> <p>6.5.4.1.8</p>	<p>MBC will use HMSI criteria, except where the LOC is not part of the existing criteria.</p> <p>Demonstration staff will be:</p> <ul style="list-style-type: none"> <li>• Project Director – 1 FTE</li> <li>• Medical Director .25FTE</li> <li>• Care Managers 3 FTEs</li> <li>• Case Managers 1–15 participants</li> <li>• Admin Asst 2 FTE, Data Analyst 1 FTE.</li> </ul> <p>Will identify potential participants through current MBC caseload, Health Care Finders (HCFs) at MTFs, HCFs at intake at MBC, existing CM patients.</p> <p><b><u>Process on Referral</u></b></p> <p><b>Time Frames:</b> 1 week from referral for cases meeting Eligibility and Suitability Review; 2 weeks for referrals appearing ineligible unless both reviews can be performed at a single meeting of the committee (TP, p.17, para 3)</p>	<p>TP 1. Para9</p> <p>TP1. Org Structure 1.</p> <p>Structure 2</p> <p>TP, p15</p>

<p>Responsibilities of Case Managers</p> <ul style="list-style-type: none"> <li>• Coordinate care</li> <li>• Have authority to make implementation decisions about provision of care</li> <li>• Maintain a current care plan</li> <li>• Present care plan to CMC upon entry and quarterly thereafter.</li> </ul> <p>Quarterly update uses metrics of the demonstration.</p>	6.5.4.1.8	<p>With Anchor Facility drafts a Master Treatment Plan (p.17)  (Coordinates with Anchor Facility and parents to draft Master Treatment plan – p.15)  Presents cases to the CMC.</p>	
Assign a PCM for each participant.	6.5.4.1.8		
Provide emergency referrals and access to 24 hour treatment.	6.5.4. 9		
Provide policies and procedures for outlining crisis stabilization treatment.	6.5.4.10		
Develop specific policies for timely processing of non-emergency referrals, including time frames for gathering pertinent data from the appropriate sources.	6.5.4.1.11		
Establish procedures for regularly scheduled treatment team reviews with treatment plan modifications at each service location.	6.5.4.1.12		
Establish measurable goals for the internal monitoring and improvement of the UM Plan.	6.5.4.1.13	<p>MBC will comply with the TRICARE appeals policies, procedures, and processes required by current TRICARE rules and regulations as specified under the current TRICARE Central Region MCS contract.</p>	TP I. Para 3
Establish procedures for authorization of provider and claims	6.5.4.1.14		

processor.			
Define wraparound services provided under the Wraparound Demonstration.	5.5.4.1.15		
Ensure CM verifies eligibility for TRICARE before providing services.	6.5.4.3	<p>MBC Care Manager</p> <ol style="list-style-type: none"> <li>1. Opens the potential case</li> <li>2. Verifies eligibility and collects records and hx</li> <li>3. Identifies Anchor Facility that will handle case and notifies them of potential admission</li> <li>4. Eligibility Review: <ul style="list-style-type: none"> <li>• Verifies that child/adolescent meets program eligibility requirements*</li> <li>• Obtains written permission from parents/guardian for child to participate</li> <li>• Obtains written commitment from parent/guardian to participate in treatment</li> <li>• Verifies parent/guardian’s agreement to have child enrolled in Prime at no cost</li> <li>• Cases that do not appear to meet eligibility criteria are presented to the CMD for review</li> </ul> </li> <li>5. Suitability Review—for cases appearing to meet eligibility criteria <ul style="list-style-type: none"> <li>• Prepares appropriate documents <ol style="list-style-type: none"> <li>a. Psycho-social hx, including special/cultural</li> </ol> </li> </ul> </li> </ol>	TP. Pp15–17

		needs of family b. Developmental hx c. Medical hx d. Psychiatric/substance abuse hx e. Psychiatric/substance abuse hx (including discharge summary if avail) f. Current psychological assessment.	
Establish and maintain a database of all referrals.	6.5.4.4.1		
Process and pay claims.	6.5.4.5		
Comply with appeals policies.	6.5.4.6		
Share financial risk.	6.5.4.7		
Ensure portability within Region.		MBC will ensure portability.	TP I. Para 4



## **Appendix D: Chronology of Events**

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<b>Date</b>	<b>Event</b>	<b>Effect on Study</b>
March 1, 1998	TriWest contract modification to implement Demonstration.	
September 28, 1998	SAIC awarded Evaluation contract.	20 children/adolescents had been enrolled in the Demonstration. These participants are lost to the evaluation since mental health status at time of enrollment cannot be accurately captured.
December 3, 1998	Government sponsored Evaluation kick-off meeting.	33 children/adolescents are enrolled in the Demonstration and lost to the evaluation.
January 26, 1999	Discussion of potential change in comparison regions.	
March 19, 1999	DoD Defense Manpower Data Center Approval of Evaluation Instruments. Privacy Act requirements met.	42 children/adolescents are enrolled and lost to the evaluation.
March 26, 1999	Submission of a revised study design to mitigate the impact on the study posed by the significant delays in obtaining approval of the evaluation tools, the low rate of enrollment of participants, and the constraint placed on the study design by funding.	Added a scaled back version of two of the options originally proposed to include more frequent data collection points for a smaller number of participants and to collect baseline data from providers.
March 31, 1999	Letter to DoD requesting that MBC begin notification of referrals/enrollment status and that MBC request parental permission for SAIC/Vanderbilt to contact them at intake.	55 children/adolescents are enrolled and lost to the evaluation. Administrative requirements necessary to implement family/provider surveys.
April 19, 1999	Second request for notification of referrals, admissions/denials, status, parental permission.	60 children/adolescents are enrolled and lost to the evaluation.

Date	Event	Effect on Study
May 26, 1999	<p>Meeting held with key stakeholders for the Demonstration Evaluation met in Falls Church, VA to review and discuss the study design and methods. Representatives from Merit Behavioral Care (MBC), TriWest Healthcare Alliance, the Department of Defense (DoD), Science Applications International Corporation (SAIC), and the Vanderbilt Center for Mental Health Policy. Discussion of the Comparison Group confirmed that children in Regions 9 and 10 would not be an adequate Comparison Group. The Comparison Group will be drawn from the Central Region. Eliminating some of the criteria proposed for the study such as substance abuse, may make the groups more comparable but will reduce the probability of having enough participants in the Comparison Group. It was clear that this Comparison Group was not an optimal solution. A suggestion that the study be conducted as a randomized experiment, which would help to ensure that the groups are comparable, was declined by DoD.</p> <p>MBC agreed to provide a letter of agreement to participate in the Evaluation project to SAIC/Vanderbilt to meet the Vanderbilt University Internal Review Board (IRB) requirement. MBC agreed to provide a sample letter to be sent to parents. MBC agreed to begin to send letters to potential Demonstration participants and to notify Vanderbilt as soon as a child or adolescent is referred for the Demonstration.</p>	<p>65 children/adolescents are enrolled and lost to the evaluation.</p> <p>Verbal agreement from DoD to use the Central Region as the Comparison Group.</p> <p>The Evaluation Team noted that the relatively small sample expected may preclude the ability to statistically control for the initial differences between the Demonstration and Comparison Groups.</p> <p>Survey sample cannot be built and interviews cannot begin until parents receive notification letters, and SAIC/Vanderbilt receives referrals and enrollment and denial notifications.</p>
June 29, 1999	Notified by MBC that they are authorized to send participant referrals.	
June 30, 1999	MBC letters to participants approved.	

<b>Date</b>	<b>Event</b>	<b>Effect on Study</b>
June 30, 1999	Received first referral from MBC.	66 children/adolescents are enrolled and lost to the evaluation.
September 26, 1999	Re-submission of the proposed revised study design to include more frequent data collection points for a smaller number of participants and to collect baseline data from providers.	
October 25, 1999	Discussions with DoD regarding the effect of the delays on the evaluation. Tasked to explore ways to capture information for the current 66 participants.	
November 17, 1999	White paper submitted. No further action on this issue.	
September 19, 2000	Meeting with new DoD Project Officer and others.	
September 28, 2000	Submitted Concept Paper revising the study to enable completion of the Evaluation within funding constraints.	Use of Logic Model was deleted, Case Management Quality Study deleted, Adequacy of Wraparound Services Network and potential for portability data collection deleted.



## **Appendix E: Evaluation Instruments**

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A total of 24 clinical data collection instruments were used during the three phases (baseline, concurrent, and followup) of the Evaluation. These tools are grouped into three modules during each phase. Each module contains tools that capture data related to the clinical outcomes of care as perceived by the participating children and adolescents, their parents or primary care givers, and the providers of care, which includes helpers<sup>17</sup>.

Many of the data collection instruments were used during more than one phase. Six were used in a single module of a single phase. One was used in multiple modules of the same phase; one was used in multiple modules of each phase. Because of the repeated usage, there are 52 entries in the tables on the following pages.

**BASELINE**—Baseline data provides information on the initial severity and complexity of the patient’s condition, as well as assessing factors in the child’s or family’s background that moderate or may affect the course of treatment. This phase encompasses the following domains:

- The severity of the child’s symptoms
- Functional impairment
- Family functioning
- Caregiver strain and the quality of family life
- The quality of the relationship between the clinician and child/family

**CONCURRENT**—This phase provides progressive information on the timing and dosage of treatment, therapeutic alliance, adherence to treatment, symptom severity, and functional impairment.

**FOLLOWUP**—This phase provides information on long-term clinical outcomes. The set of tools in the Provider/Helper module is identical to the set in the Provider/Helper module of the Concurrent phase.

It is important to note that the measurement instrumentation for mental health services for children and adolescents is more complex than that for adults, requiring collection of information from multiple informants. Family environment is an essential component of any measurement system for children and adolescents, since the family can foster development and therapeutic gains. Without information about the family's strengths and needs, clinicians are likely to overlook an important treatment resource. Information from children is also critical, since research indicates that while parents can reliably report children’s externalizing behavior, children are better informants concerning their own internalizing symptoms (e.g., anxiety) and covert actions (e.g., substance abuse) (Achenbach, McConaughy, and Howell, 1987).

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<sup>17</sup> In the delivery of wraparound, helpers are nontraditional providers of mental health services. Helpers may include Big Sisters or Big Brothers, Scouts, School Counselors, etc. Because of funding cuts, direct provider/helper information was collected only from Case Managers.

**INSTRUMENTS USED DURING  
BASELINE PHASE**

**Total Administration Time**  
**Parent/Caregiver: 55 minutes**  
**Adolescent: 39 minutes**  
**Provider/Helper: (Mail Survey)**

Instrument Title and Source	Method of Administration Time Required	Dimensions Assessed	Rationale for Selection and Use
<b>Baseline Instruments: Parent/Primary Caregiver Module</b>			
<p>Title: <b>Caregiver Strain Questionnaire (CSQ)</b>                       Source: Brannan, Heflinger, and Bickman (1997)</p>	<p><u>Format:</u> Phone interview  <u>Information source:</u> Parent/primary caregiver  <u>Items:</u> 21  <u>Target population:</u> Families of 4–17 year olds;                      4–17 year olds  <u>Administration time:</u> 4 minutes</p>	<p>Measures parental stress in areas such as financial strain, worry, and emotional strain due to caring for children with behavioral and emotional problems:</p> <ul style="list-style-type: none"> <li>• Objective burden</li> <li>• Subjective burden</li> </ul>	<ul style="list-style-type: none"> <li>• Good internal consistency (= 0.93 in FBEP study).</li> <li>• Past studies have shown that parent's perception of stress improves with child's treatment.</li> </ul>
<p>Title: <b>Child Behavior Checklist (CBCL)</b>                       Source: Achenbach (1991a)</p>	<p><u>Format:</u> Phone interview self-report behavior checklist  <u>Items:</u> 118  <u>Information source:</u> Parent/primary caregiver  <u>Target population:</u> 4–18 year olds  <u>Administration time:</u> 15 minutes</p>	<ul style="list-style-type: none"> <li>• Provides classification of childhood psychopathology based on symptoms.</li> <li>• Nine subscales of behavior problems.</li> <li>• Three global problem scales (Externalizing, Internalizing, and Total Problems).</li> <li>• Social competence.</li> </ul>	<ul style="list-style-type: none"> <li>• Provides classification of psychopathology based on empirically-derived symptoms.</li> <li>• Assesses healthy psychological functioning.</li> <li>• Provides normative data by age and sex.</li> <li>• High test-retest reliability, inter-rater reliability and adequate internal reliability and concurrent and discriminant validity.</li> <li>• Will be used in assessing outcomes.</li> </ul>
<p>Title: <b>Family Background Form</b>                       Sources: Bickman and associates (1995) and Substance Abuse and Mental Health Services Administration (SAMHSA; 1998)</p>	<p><u>Format:</u> Phone interview  <u>Information source:</u> Parent/primary caregiver  <u>Target population:</u> Families of 4–17 year olds;                      4–17 year olds  <u>Administration time:</u> Up to 15 minutes</p>	<ul style="list-style-type: none"> <li>• Family and household composition</li> <li>• Present/past use of mental health services</li> <li>• Strain on family resources</li> <li>• Family background (employment, finances, military experience, health and use of services, contact with law enforcement)</li> <li>• Child background (age, gender, ethnicity, health, and contact with law enforcement)</li> </ul>	<ul style="list-style-type: none"> <li>• Developed to measure characteristics of children and families in the military.</li> <li>• Easily adapted to current project.</li> <li>• Statute requires assessment of access, utilization, quality and cost of services.</li> <li>• An adaptation of the Fort Bragg and up-to-date SAMHSA measures. The SAMHSA measure is currently being used in a national multi-site study.</li> </ul>

<p>Title: <b>Parent-Helper Relationship Questionnaire—Primary Caregiver Version</b></p> <p>Source: modified version of the Working Alliance Inventory—Short Form (WAI-S; Tracey &amp; Kokotovic, 1993)</p>	<p><u>Format</u>: Phone interview  <u>Items</u>: 16  <u>Information source</u>: Parent/primary caregiver  <u>Target population</u>: Parents/primary caregivers and their children’s primary providers  <u>Administration time</u>: 3 minutes</p>	<ul style="list-style-type: none"> <li>Relationship between parent/primary caregiver and the child’s primary provider</li> <li>Amount of contact and familiarity with child’s primary provider</li> </ul>	<ul style="list-style-type: none"> <li>Research in children’s mental health indicates that the quality of the relationship between parents or primary caregivers and their children’s providers is related to continuation of services.</li> <li>Pinsof (1994) called for a series of instruments to measure each dyadic alliance and perspective in the family-therapist system.</li> <li>Factor analysis of the WAI-S revealed a strong, general alliance factor and three weaker factors corresponding to Bordin’s (1979) three components of alliance: bond, agreement on tasks, and agreement on goals.</li> </ul>
<p>Title: <b>Service Process Index for Families and Youth (SPIFY)</b></p> <p>Source: Bramley, J., Burchard, J., &amp; Tighe, T. (1999)</p>	<p><u>Format</u>: Phone interview  <u>Items</u>: 24  <u>Information source</u>: Parent/primary caregiver  <u>Administration time</u>: 10 minutes</p>	<p>Measures degree to which there is a team, including the family and child, that works together in selecting, providing, and evaluating services for the child/family.</p>	<ul style="list-style-type: none"> <li>Only tool currently available that attempts to measure this construct.</li> </ul>
<p>Title: <b>Vanderbilt Functioning Index—Primary Caregiver Version (VFI-P)</b></p> <p>Source: Bickman, L., Lambert, E. W., Karver, M. S., &amp; Andrade, A. R. (1998)</p>	<p><u>Format</u>: Phone interview  <u>Items</u>: 24  <u>Information source</u>: Parent/primary caregiver  <u>Target population</u>: 5–17 year olds  <u>Administration time</u>: 5 minutes</p>	<p>Measures functional impairment across several dimensions:</p> <ul style="list-style-type: none"> <li>Antisocial behavior</li> <li>Problems at home</li> <li>Problems at school</li> <li>Problems with peers</li> <li>Self-harm</li> </ul>	<ul style="list-style-type: none"> <li>Provides information on severe functional impairment.</li> <li>Items found to predict several dimensions of service usage.</li> <li>Easy to administer.</li> <li>Parallel youth version.</li> </ul>
<p>Title: <b>Vanderbilt Positive Functioning Index – Primary Caregiver Version (VPFI-P)</b></p> <p>Source: Karver, M. S., &amp; Bickman, L. (in press)</p>	<p><u>Format</u>: Phone interview self-report behavior checklist  <u>Items</u>: 11  <u>Information source</u>: Parent/primary caregiver  <u>Target population</u>: 5–17 year olds  <u>Administration time</u>: 3 minutes</p>	<p>Measures positive activities above and beyond performing basic activities of daily living:</p> <ul style="list-style-type: none"> <li>Peers</li> <li>Extra-curricular activities</li> <li>Helping others</li> <li>Employment</li> </ul>	<ul style="list-style-type: none"> <li>Goal of mental health services not just symptom reduction but promotion of client strengths.</li> <li>Strengths not adequately addressed in mental health services research.</li> <li>Brief measure.</li> </ul>

**Baseline Instruments: Adolescent Module**

<p>Title: <b>Helping Alliance Scale – Adolescent Version (HAS-A)</b></p> <p>Source: Based on Adolescent Working Alliance Inventory; Linscott, DiGiuseppe, &amp; Jilton (1993); and Therapeutic Alliance Scales for Children, Shirk &amp; Saiz (1992)</p>	<p><u>Format:</u> Phone interview  <u>Items:</u> 29  <u>Information source:</u> Children/adolescents  <u>Target population:</u> 11–18 year olds  <u>Administration time:</u> 5 minutes</p>	<p>Measures strength of the helping relationship between a child and a helping person:</p> <ul style="list-style-type: none"> <li>• Openness</li> <li>• Supportive caring</li> <li>• Bond</li> <li>• Agreement on goals</li> <li>• Perceptiveness of helper</li> </ul>	<ul style="list-style-type: none"> <li>• Alliance found related to outcomes across numerous studies in adult literature.</li> <li>• Preliminary studies to date suggest a relationship between alliance and outcomes with children and adolescents.</li> <li>• Alliance not adequately studied in child and adolescent literature.</li> </ul>
<p>Title: <b>Helping Behaviors Checklist – Adolescent Version</b></p> <p>Source: Based on Weersing (1996)</p>	<p><u>Format:</u> Phone Interview  <u>Items:</u> 30  <u>Information Source:</u> Children/adolescents  <u>Target Population:</u> 11–18 year olds and their primary providers  <u>Administration time:</u> 5 minutes</p>	<p>Measures adolescents’ perceptions of helpers’ behaviors that are meant to help the child.</p>	<ul style="list-style-type: none"> <li>• Provides important information on the “black box” of treatment and helping approaches used in wrap-around care.</li> <li>• Provides data concerning helpers outside the wrap-around system that may account for child outcome.</li> </ul>
<p>Title: <b>Perceived Social Support from Family (PSS-FA)</b></p> <p>Source: Procidiano and Heller (1983)</p>	<p><u>Format:</u> Phone interview  <u>Items:</u> 20  <u>Information source:</u> Children/adolescents  <u>Target population:</u> 11–18 year olds  <u>Administration time:</u> 4 minutes</p>	<p>Youth’s perception of social support from his/her family</p>	<ul style="list-style-type: none"> <li>• Chosen as the best measure of social support for children and adolescents in a review by Bickman and associates (1998).</li> <li>• Internal consistency is good.</li> <li>• Factor analysis reveals one global scale of family support.</li> <li>• Correlates highly with identity formation, self-reliance, and work orientation.</li> </ul>
<p>Title: <b>Student’s Life Satisfaction Scale (SLSS)</b></p> <p>Source: Huebner (1991)</p>	<p><u>Format:</u> Phone interview  <u>Items:</u> 7  <u>Information source:</u> Children/adolescents  <u>Target population:</u> 8–18 year olds  <u>Administration time:</u> 2 minutes</p>	<ul style="list-style-type: none"> <li>• Youth’s perception of his/her quality of life</li> </ul>	<ul style="list-style-type: none"> <li>• Chosen as one of the two best measures of quality of life for children and adolescents in a review by Bickman and associates (1998).</li> <li>• Test-retest, internal consistency, and item-total correlation estimates are adequate.</li> <li>• Convergent validity is barely acceptable; however, this indicator of validity is insufficient due to the lack of research in this area.</li> <li>• Cultural bias is limited.</li> </ul>

<p>Title: <b>Vanderbilt Functioning Index – Adolescent Version (VFI-A)</b></p> <p>Source: Bickman, L., Lambert, E. W., Karver, M. S., &amp; Andrade, A. R. (1998)</p>	<p><u>Format:</u> Phone interview  <u>Items:</u> 16  <u>Information source:</u> Children/adolescents  <u>Target population:</u> 11–18 year olds  <u>Administration time:</u> 5 minutes</p>	<p>Measures functional impairment across several dimensions:</p> <ul style="list-style-type: none"> <li>• Antisocial behavior</li> <li>• Problems at home</li> <li>• Problems at school</li> <li>• Problems with peers</li> <li>• Self-harm</li> </ul>	<ul style="list-style-type: none"> <li>• Provides information on severe functional impairment.</li> <li>• Items found to predict several dimensions of service usage.</li> <li>• Easy to administer.</li> <li>• Parallel primary caregiver version.</li> </ul>
<p>Title: <b>Vanderbilt Positive Functioning Index – Adolescent Version (VPFI-A)</b></p> <p>Source: Karver, M. S., &amp; Bickman, L. (in press)</p>	<p><u>Format:</u> Phone interview  <u>Items:</u> 11  <u>Information source:</u> Children/adolescents  <u>Target population:</u> 11–18 year olds  <u>Administration time:</u> 3 minutes</p>	<p>Measures positive activities above and beyond performing basic activities of daily living:</p> <ul style="list-style-type: none"> <li>• Peers</li> <li>• Extra-curricular activities</li> <li>• Helping others</li> <li>• Employment</li> </ul>	<ul style="list-style-type: none"> <li>• Goal of mental health services not just symptom reduction but promotion of client strengths.</li> <li>• Strengths not adequately addressed in mental health services research.</li> <li>• Brief measure.</li> </ul>
<p>Title: <b>Youth Self Report (YSR)</b></p> <p>Source: Achenbach (1991b)</p>	<p><u>Format:</u> Phone interview self-report behavior checklist  <u>Items:</u> 118  <u>Information source:</u> Children/adolescents  <u>Target population:</u> 11–18 year olds  <u>Administration time:</u> 15 minutes</p>	<ul style="list-style-type: none"> <li>• Provides classification of childhood psychopathology based on symptoms.</li> <li>• Nine subscales of behavior problems.</li> <li>• Three global problem scales (Externalizing, Internalizing, and Total Problems).</li> <li>• Social competence.</li> </ul>	<ul style="list-style-type: none"> <li>• Same as for the Child Behavior Checklist (CBCL) in the Parent/Primary Caregiver Module under Baseline Instruments.</li> <li>• Both CBCL and YSR assess the perceptions of both adolescents and parents/primary caregivers on a range of behavior problems.</li> </ul>
<b>Baseline Instruments: Provider/Helper Module (Mail Survey)</b>			
<p>Title: <b>Helping Alliance Scale – Helper Version (HAS-H)</b></p> <p>Source: Based on Adolescent Working Alliance Inventory; Linscott, DiGiuseppe, &amp; Jilton, 1993; and Therapeutic Alliance Scales for Children, Shirk &amp; Saiz (1992)</p>	<p><u>Format:</u> Mail survey  <u>Items:</u> 30  <u>Information source:</u> Primary provider (clinician) and possibly one additional, parent- or youth-identified provider or helper  <u>Target Population:</u> 11–18 year olds  <u>Administration time:</u> 5 minutes</p>	<p>Measures strength of the helping relationship between a child and a helping person:</p> <ul style="list-style-type: none"> <li>• Openness</li> <li>• Supportive caring</li> <li>• Bond</li> <li>• Agreement on goals</li> <li>• Perceptiveness of helper</li> </ul>	<ul style="list-style-type: none"> <li>• Same as for the Helping Alliance Scale – Adolescent Version in the Adolescent Module under Baseline Instruments.</li> <li>• Can be used with clinician and non-clinician helpers.</li> <li>• Parallel adolescent and helper versions to assess different perspectives and discrepancies in perspectives.</li> </ul>
<p>Title: <b>Helping Behaviors Checklist – Clinician Version</b></p> <p>Source: Based on Weersing (1996)</p>	<p><u>Format:</u> Mail survey  <u>Items:</u> 58  <u>Information Source:</u> Primary provider and possibly one additional, parent- or youth-identified provider  <u>Administration time:</u> 10 minutes</p>	<p>Measures provider’s behaviors that are meant to help the child.</p>	<ul style="list-style-type: none"> <li>• Provides important information on the “black box” of treatment and helping approaches used in wraparound care.</li> </ul>

<p>Title: <b>Helping Behaviors Checklist—Non-Clinician Version</b></p> <p>Source: Based on Weersing (1996)</p>	<p><u>Format</u>: Mail survey  <u>Items</u>: 30  <u>Information Source</u>: Primary provider and possibly one additional, parent- or youth-identified provider  <u>Administration time</u>: 5 minutes</p>	<p>Measures helper’s behaviors that are meant to help the child.</p>	<ul style="list-style-type: none"> <li>• Provides important information on the “black box” of treatment and helping approaches used in wraparound care.</li> <li>• Provides data concerning helpers outside the wraparound system that may account for child outcome.</li> </ul>
<p>Title: <b>Parent-Helper Relationship Questionnaire—Clinician Version</b></p> <p>Source: modified version of the Working Alliance Inventory—Short Form (WAI-S; Tracey &amp; Kokotovic, 1993)</p>	<p><u>Format</u>: Mail Survey  <u>Items</u>: 16  <u>Information source</u>: Clinician  <u>Target population</u>: Parents/primary caregivers and their children’s primary providers  <u>Administration time</u>: 3 minutes</p>	<ul style="list-style-type: none"> <li>• Relationship between parent/primary caregiver and the child’s primary provider</li> <li>• Amount of provider’s contact and familiarity with child’s parent or primary caregiver</li> </ul>	<p>See Baseline Instruments: Parent/Primary Caregiver Module.</p>
<p>Title: <b>Service Process Index for Families and Youth (SPIFY)</b></p> <p>Source: Bramley, J., Burchard, J., &amp; Tighe, T. (1999)</p>	<p><u>Format</u>: Phone interview  <u>Items</u>: 24  <u>Information source</u>: Provider  <u>Administration time</u>: 10 minutes</p>	<p>Measures degree to which there is a team, including the family and child, that works together in selecting, providing, and evaluating services for the child/family.</p>	<ul style="list-style-type: none"> <li>• Only tool currently available that attempts to measure this construct.</li> </ul>
<p>Title: <b>Vanderbilt Helper Background Survey – Clinician Version</b></p> <p>Source: Modification of Fort Bragg Provider Survey (Bickman et al., 1995)</p>	<p><u>Format</u>: Mail survey  <u>Items</u>: 20  <u>Information Source</u>: Primary provider and possibly two additional, parent- or youth-identified providers  <u>Target Population</u>: Clinician providers  <u>Administration time</u>: 4 minutes</p>	<ul style="list-style-type: none"> <li>• Provider background, orientation, and treatment modality</li> <li>• Familiarity with child and family</li> <li>• Treatment interactions with child and family</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Provides important background information that may influence the provider’s approach to helping.</b></li> </ul>
<p>Title: <b>Vanderbilt Helper Background Survey – Non-Clinician Version</b></p> <p>Source: Modification of Fort Bragg Provider Survey (Bickman et al., 1995)</p>	<p><u>Format</u>: Mail survey  <u>Items</u>: 20  <u>Information Source</u>: Parent-identified helper, if applicable  <u>Target Population</u>: Non-clinician providers  <u>Administration time</u>: 4 minutes</p>	<ul style="list-style-type: none"> <li>• Formal or informal helper’s background, occupation, and helping circumstances</li> <li>• Familiarity with child and family</li> <li>• Interactions with child and family</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Provides important background information that may influence the helper’s approach to helping.</b></li> </ul>

INSTRUMENTS USED DURING  
CONCURRENT PHASE

**Total Administration Time**  
**Parent/Caregiver: 38 minutes**  
**Adolescent: 26 minutes**  
**Provider/Helper: (Mail Survey)**

Instrument Title and Source	Method of Administration Time Required	Dimensions Assessed	Rationale for Selection and Use
<b>Concurrent Instruments: Parent/Primary Caregiver Module</b>			
<p>Title: <b>Ohio Scales – Parent Version (OS-P)</b>                      Source: Ogles, Davis, and Lunnen (1998)</p>	<p><u>Format</u>: Phone interview  <u>Information source</u>: Parent/primary caregiver  <u>Target population</u>: 4–17 year olds  <u>Administration time</u>: 10 minutes</p>	<p>Adolescent perceptions of:</p> <ul style="list-style-type: none"> <li>• Problem behaviors</li> <li>• Functioning</li> <li>• Hopefulness and concerning child’s future</li> <li>• Satisfaction and inclusion with services</li> </ul>	<ul style="list-style-type: none"> <li>• Assesses both functioning impairment and competence.</li> <li>• Allows for multiple perspectives.</li> <li>• Can be used concurrently with treatment.</li> <li>• Made the “best measures” list in a review of 178 child and adolescent mental health measures due to rigorous conceptual development and good psychometric properties.</li> </ul>
<p>Title: <b>Parent-Helper Relationship Questionnaire—Primary Caregiver Version</b>                      Source: modified version of the Working Alliance Inventory—Short Form (WAI-S; Tracey &amp; Kokotovic, 1993)</p>	<p><u>Format</u>: Phone interview  <u>Items</u>: 16  <u>Information source</u>: Parent/primary caregiver  <u>Target population</u>: Parents/primary caregivers and their children’s primary providers  <u>Administration time</u>: 3 minutes</p>	<ul style="list-style-type: none"> <li>• Relationship between parent/primary caregiver and the child’s primary provider</li> <li>• Amount of contact and familiarity with child’s primary provider</li> </ul>	<p>See Baseline Instruments: Parent/Primary Caregiver Module.</p>
<p>Title: <b>Service Process Index for Families and Youth (SPIFY)</b>                      Source: Bramley, J., Burchard, J., &amp; Tighe, T. (1999)</p>	<p><u>Format</u>: Phone interview  <u>Items</u>: 24  <u>Information source</u>: Parent/primary caregiver  <u>Administration time</u>: 10 minutes</p>	<p>Measures degree to which there is a team, including the family and child, that works together in selecting, providing, and evaluating services for the child/family.</p>	<ul style="list-style-type: none"> <li>• Only tool currently available that attempts to measure this construct.</li> </ul>

<p>Title: <b>Service Utilization and Medication</b></p> <p>Source: Based on Substance Abuse and Mental Health Services Administration (SAMHSA; 1998)</p>	<p><u>Format</u>: Phone interview  <u>Information source</u>: Parent/primary caregiver  <u>Target population</u>: 4–16 year olds  <u>Administration time</u>: 15 minutes</p>	<ul style="list-style-type: none"> <li>• Services used by youth and family since last interview</li> <li>• Current medication and compliance with prescription</li> <li>• Service quality and access</li> </ul>	<ul style="list-style-type: none"> <li>• Assesses the presence/absence and quality of services.</li> <li>• An adaptation of the up-to-date SAMHSA measure currently being used in a national multi-site study.</li> <li>• Increased reliability of informant report due to decreased errors associated with informant’s memory.</li> </ul>
<p><b>Concurrent Instruments: Adolescent Module</b></p>			
<p>Title: <b>Helping Alliance Scale – Adolescent Version (HAS-A)</b></p> <p>Source: Based on Adolescent Working Alliance Inventory; Linscott, DiGiuseppe, &amp; Jilton (1993); and Therapeutic Alliance Scales for Children, Shirk &amp; Saiz (1992)</p>	<p><u>Format</u>: Phone interview  <u>Items</u>: 29  <u>Information source</u>: Children/adolescents  <u>Target population</u>: 11–18 year olds  <u>Administration time</u>: 5 minutes</p>	<p>Measures strength of the helping relationship between a child and a helping person:</p> <ul style="list-style-type: none"> <li>• Openness</li> <li>• Supportive caring</li> <li>• Bond</li> <li>• Agreement on goals</li> <li>• Perceptiveness of helper</li> </ul>	<ul style="list-style-type: none"> <li>• Alliance found related to outcomes across numerous studies in adult literature.</li> <li>• Preliminary studies to date suggest a relationship between alliance and outcomes with children and adolescents.</li> <li>• Alliance not adequately studied in child and adolescent literature.</li> </ul>
<p>Title: <b>Helping Behaviors Checklist – Adolescent Version</b></p> <p>Source: Based on Weersing (1996)</p>	<p><u>Format</u>: Phone Interview  <u>Items</u>: 30  <u>Information Source</u>: Children/adolescents  <u>Target Population</u>: 11–18 year olds and their primary providers  <u>Administration time</u>: 5 minutes</p>	<p>Measures adolescents’ perceptions of helpers’ behaviors that are meant to help the child.</p>	<p>See Baseline Instruments: Adolescent Module.</p>
<p>Title: <b>Ohio Scales – Youth Version (OS-Y)</b></p> <p>Source: Ogles, Davis, and Lunnen (1998)</p>	<p><u>Format</u>: Phone interview  <u>Information source</u>: Children/adolescents  <u>Target population</u>: 11–18 year olds  <u>Administration time</u>: 10 minutes</p>	<p>Adolescent perceptions of:</p> <ul style="list-style-type: none"> <li>• Problem behaviors</li> <li>• Functioning</li> <li>• Hopefulness and well-being</li> <li>• Feelings inclusion with services</li> </ul>	<ul style="list-style-type: none"> <li>• Assesses both functioning impairment and competence.</li> <li>• Allows for multiple perspectives.</li> <li>• Can be used concurrently with treatment.</li> <li>• Made the “best measures” list in a review of 178 child and adolescent mental health measures due to rigorous conceptual development and good psychometric properties.</li> </ul>
<p>Title: <b>Perceived Social Support from Family (PSS-FA)</b></p> <p>Source: Procidiano and Heller (1983)</p>	<p><u>Format</u>: Phone interview  <u>Items</u>: 20  <u>Information source</u>: Children/adolescents  <u>Target population</u>: 11–18 year olds  <u>Administration time</u>: 4 minutes</p>	<p>Youth’s perception of social support from his/her family</p>	<p>See Baseline Instruments: Adolescent Module.</p>

<p>Title: <b>Student's Life Satisfaction Scale (SLSS)</b></p> <p>Source: Huebner (1991)</p>	<p><u>Format</u>: Phone interview  <u>Items</u>: 7  <u>Information source</u>: Children/adolescents  <u>Target population</u>: 8–18 year olds  <u>Administration time</u>: 2 minutes</p>	<ul style="list-style-type: none"> <li>Youth's perception of his/her quality of life</li> </ul>	<p>See Baseline Instruments: Adolescent Module.</p>
<p><b>Concurrent Instruments: Provider/Helper Module (Mail Survey)</b></p>			
<p>Title: <b>Helping Alliance Scale – Helper Version (HAS-H)</b></p> <p>Source: Based on Adolescent Working Alliance Inventory; Linscott, DiGiuseppe, &amp; Jilton, 1993; and Therapeutic Alliance Scales for Children, Shirk &amp; Saiz (1992)</p>	<p><u>Format</u>: Mail survey  <u>Items</u>: 30  <u>Information source</u>: Primary provider (clinician) and possibly one additional, parent- or youth-identified provider or helper  <u>Target Population</u>: 11–18 year olds  <u>Administration time</u>: 5 minutes</p>	<p>Measures strength of the helping relationship between a child and a helping person:</p> <ul style="list-style-type: none"> <li>Openness</li> <li>Supportive caring</li> <li>Bond</li> <li>Agreement on goals</li> <li>Perceptiveness of helper</li> </ul>	<p>See Baseline Instruments: Provider/Helper Module.</p>
<p>Title: <b>Helping Behaviors Checklist – Clinician Version</b></p> <p>Source: Based on Weersing (1996)</p>	<p><u>Format</u>: Mail survey  <u>Items</u>: 58  <u>Information Source</u>: Primary provider and possibly one additional, parent- or youth-identified provider  <u>Administration time</u>: 10 minutes</p>	<p>Measures provider's behaviors that are meant to help the child.</p>	<ul style="list-style-type: none"> <li>Provides important information on the “black box” of treatment and helping approaches used in wraparound care.</li> </ul>
<p>Title: <b>Helping Behaviors Checklist —Non-Clinician Version</b></p> <p>Source: Based on Weersing (1996)</p>	<p><u>Format</u>: Mail survey  <u>Items</u>: 30  <u>Information Source</u>: Primary provider and possibly one additional, parent- or youth-identified provider  <u>Administration time</u>: 5 minutes</p>	<p>Measures helper's behaviors that are meant to help the child.</p>	<ul style="list-style-type: none"> <li>Provides important information on the “black box” of treatment and helping approaches used in wraparound care.</li> <li>Provides data concerning helpers outside the wraparound system that may account for child outcome.</li> </ul>
<p>Title: <b>Parent-Helper Relationship Questionnaire—Clinician Version</b></p> <p>Source: modified version of the Working Alliance Inventory—Short Form (WAI-S; Tracey &amp; Kokotovic, 1993)</p>	<p><u>Format</u>: Mail Survey  <u>Items</u>: 16  <u>Information source</u>: Clinician  <u>Target population</u>: Parents/primary caregivers and their children's primary providers  <u>Administration time</u>: 3 minutes</p>	<ul style="list-style-type: none"> <li>Relationship between parent/primary caregiver and the child's primary provider</li> <li>Amount of provider's contact and familiarity with child's parent or primary caregiver</li> </ul>	<p>See Baseline Instruments: Parent/Primary Caregiver Module.</p>
<p>Title: <b>Service Process Index for Families and Youth (SPIFY)</b></p> <p>Source: Bramley, J., Burchard, J., &amp; Tighe, T. (1999)</p>	<p><u>Format</u>: Phone interview  <u>Items</u>: 24  <u>Information source</u>: Provider  <u>Administration time</u>: 10 minutes</p>	<p>Measures degree to which there is a team, including the family and child, that works together in selecting, providing, and evaluating services for the child/family.</p>	<ul style="list-style-type: none"> <li>Only tool currently available that attempts to measure this construct.</li> </ul>

INSTRUMENTS USED DURING FOLLOWUP PHASE

**Total Administration Time**  
**Parent/Caregiver: 45 minutes**  
**Adolescent: 38 minutes**  
**Provider/Helper: (Mail Survey)**

Instrument Title and Source	Method of Administration Time Required	Dimensions Assessed	Rationale for Selection and Use
<b>Followup Instruments: Parent/Primary Caregiver Module</b>			
<p>Title: <b>Caregiver Strain Questionnaire (CSQ)</b>                      Source: Brannan, Heflinger, and Bickman (1997)</p>	<p><u>Format</u>: Phone interview  <u>Information source</u>: Parent/primary caregiver  <u>Items</u>: 21  <u>Target population</u>: Families of 4–17 year olds; 4–17 year olds  <u>Administration time</u>: 4 minutes</p>	<p>Measures parental stress in areas such as financial strain, worry, and emotional strain due to caring for children with behavioral and emotional problems:</p> <ul style="list-style-type: none"> <li>• Objective burden</li> <li>• Subjective burden</li> </ul>	<p>See Baseline Instruments: Parent/Primary Caregiver Module.</p>
<p>Title: <b>Child Behavior Checklist (CBCL)</b>                      Source: Achenbach (1991a)</p>	<p><u>Format</u>: Phone interview self-report behavior checklist  <u>Items</u>: 118  <u>Information source</u>: Parent/primary caregiver  <u>Target population</u>: 4–18 year olds  <u>Administration time</u>: 15 minutes</p>	<ul style="list-style-type: none"> <li>• Provides classification of childhood psychopathology based on symptoms.</li> <li>• Nine subscales of behavior problems.</li> <li>• Three global problem scales (Externalizing, Internalizing, and Total Problems).</li> <li>• Social competence.</li> </ul>	<p>See Baseline Instruments: Parent/Primary Caregiver Module.</p>
<p>Title: <b>Service Process Index for Families and Youth (SPIFY)</b>                      Source: Bramley, J., Burchard, J., &amp; Tighe, T. (1999)</p>	<p><u>Format</u>: Phone interview  <u>Items</u>: 24  <u>Information source</u>: Parent/primary caregiver  <u>Administration time</u>: 10 minutes</p>	<p>Measures degree to which there is a team, including the family and child, that works together in selecting, providing, and evaluating services for the child/family.</p>	<ul style="list-style-type: none"> <li>• Only tool currently available that attempts to measure this construct.</li> </ul>

<p>Title: <b>Vanderbilt Functioning Index—Primary Caregiver Version (VFI-P)</b></p> <p>Source: Bickman, L., Lambert, E. W., Karver, M. S., &amp; Andrade, A. R. (1998)</p>	<p><u>Format</u>: Phone interview  <u>Items</u>: 24  <u>Information source</u>: Parent/primary caregiver  <u>Target population</u>: 5–17 year olds  <u>Administration time</u>: 5 minutes</p>	<p>Measures functional impairment across several dimensions:</p> <ul style="list-style-type: none"> <li>• Antisocial behavior</li> <li>• Problems at home</li> <li>• Problems at school</li> <li>• Problems with peers</li> <li>• Self-harm</li> </ul>	<ul style="list-style-type: none"> <li>• Provides information on severe functional impairment.</li> <li>• Items found to predict several dimensions of service usage.</li> <li>• Easy to administer.</li> <li>• Parallel youth version.</li> </ul>
<p>Title: <b>Services Assessment</b></p> <p>Source: Brannan, Sonnichsen, and Heflinger (1996)</p> <p>Note: Measures satisfaction within nine service types:</p> <ul style="list-style-type: none"> <li>• Intake and assessment</li> <li>• Outpatient services</li> <li>• Inpatient hospital/residential treatment center</li> <li>• Case management</li> <li>• Day treatment</li> <li>• Therapeutic group home</li> <li>• Therapeutic family home</li> <li>• After-school services</li> <li>• In-home counseling</li> </ul>	<p><u>Format</u>: Phone interview  <u>Items</u>: 23–51; varies by service area  <u>Information source</u>: Parent/primary caregiver  <u>Target population</u>: 5–18 year olds  <u>Administration time</u>: 6–9 minutes, depending on the module</p>	<p>Measures the following content areas:</p> <ul style="list-style-type: none"> <li>• Access and convenience</li> <li>• Child’s treatment</li> <li>• Parent services</li> <li>• Family services</li> <li>• Relationship with therapist</li> <li>• Staff responsiveness</li> <li>• Financial charges</li> <li>• Discharge/transition</li> </ul>	<ul style="list-style-type: none"> <li>• Covers several dimensions of mental health services.</li> <li>• Used in the Fort Bragg Evaluation Project.</li> <li>• Highly adaptable with several modules.</li> <li>• Internal consistency ranges from acceptable to excellent, depending on the informant and module.</li> <li>• Parent and youth versions.</li> </ul>
<p>Title: <b>Vanderbilt Positive Functioning Index—Primary Caregiver Version (VPFI-P)</b></p> <p>Source: Karver, M. S., &amp; Bickman, L. (in press)</p>	<p><u>Format</u>: Phone interview self-report behavior checklist  <u>Items</u>: 11  <u>Information source</u>: Parent/primary caregiver  <u>Target population</u>: 5–17 year olds  <u>Administration time</u>: 3 minutes</p>	<p>Measures positive activities above and beyond performing basic activities of daily living:</p> <ul style="list-style-type: none"> <li>• Peers</li> <li>• Extra-curricular activities</li> <li>• Helping others</li> <li>• Employment</li> </ul>	<ul style="list-style-type: none"> <li>• Goal of mental health services not just symptom reduction but promotion of client strengths.</li> <li>• Strengths not adequately addressed in mental health services research.</li> <li>• Brief measure.</li> </ul>
<b>Followup Instruments: Adolescent Module</b>			
<p>Title: <b>Perceived Social Support from Family (PSS-FA)</b></p> <p>Source: Procidiano and Heller (1983)</p>	<p><u>Format</u>: Phone interview  <u>Items</u>: 20  <u>Information source</u>: Children/adolescents  <u>Target population</u>: 11–18 year olds  <u>Administration time</u>: 4 minutes</p>	<p>Youth’s perception of social support from his/her family</p>	<p>See Baseline Instruments: Adolescent Module.</p>
<p>Title: <b>Student’s Life Satisfaction Scale (SLSS)</b></p> <p>Source: Huebner (1991)</p>	<p><u>Format</u>: Phone interview  <u>Items</u>: 7  <u>Information source</u>: Children/adolescents  <u>Target population</u>: 8–18 year olds  <u>Administration time</u>: 2 minutes</p>	<ul style="list-style-type: none"> <li>• Youth’s perception of his/her quality of life</li> </ul>	<p>See Baseline Instruments: Adolescent Module.</p>

<p>Title: <b>Services Assessment</b></p> <p>Source: Brannan, Sonnichsen, and Heflinger (1996)</p> <p>Note: Measures satisfaction within nine service types:</p> <ul style="list-style-type: none"> <li>• Intake and assessment</li> <li>• Outpatient services</li> <li>• Inpatient hospital/residential treatment center</li> <li>• Case management</li> <li>• Day treatment</li> <li>• Therapeutic group home</li> <li>• Therapeutic family home</li> <li>• After-school services</li> <li>• In-home counseling</li> </ul>	<p><u>Format</u>: Phone interview</p> <p><u>Items</u>: 23–51; varies by service area</p> <p><u>Information source</u>: Children/adolescents</p> <p><u>Target population</u>: 5–18 year olds</p> <p><u>Administration time</u>: 6–9 minutes, depending on the module</p>	<p>Measures the following content areas:</p> <ul style="list-style-type: none"> <li>• Access and convenience</li> <li>• Child’s treatment</li> <li>• Parent services</li> <li>• Family services</li> <li>• Relationship with therapist</li> <li>• Staff responsiveness</li> <li>• Financial charges</li> <li>• Discharge/transition</li> </ul>	<p>See Followup Instruments: Parent/Primary Caregiver Module.</p>
<p>Title: <b>Vanderbilt Functioning Index—Adolescent Version (VFI-A)</b></p> <p>Source: Bickman, L., Lambert, E. W., Karver, M. S., &amp; Andrade, A. R. (1998)</p>	<p><u>Format</u>: Phone interview</p> <p><u>Items</u>: 16</p> <p><u>Information source</u>: Children/adolescents</p> <p><u>Target population</u>: 11–18 year olds</p> <p><u>Administration time</u>: 5 minutes</p>	<p>Measures functional impairment across several dimensions:</p> <ul style="list-style-type: none"> <li>• Antisocial behavior</li> <li>• Problems at home</li> <li>• Problems at school</li> <li>• Problems with peers</li> <li>• Self-harm</li> </ul>	<p>See Baseline Instruments: Adolescent Module.</p>
<p>Title: <b>Vanderbilt Positive Functioning Index—Adolescent Version (VPFI-A)</b></p> <p>Source: Karver, M. S., &amp; Bickman, L. (in press)</p>	<p><u>Format</u>: Phone interview</p> <p><u>Items</u>: 11</p> <p><u>Information source</u>: Children/adolescents</p> <p><u>Target population</u>: 11–18 year olds</p> <p><u>Administration time</u>: 3 minutes</p>	<p>Measures positive activities above and beyond performing basic activities of daily living:</p> <ul style="list-style-type: none"> <li>• Peers</li> <li>• Extra-curricular activities</li> <li>• Helping others</li> <li>• Employment</li> </ul>	<p>See Baseline Instruments: Adolescent Module.</p>
<p>Title: <b>Youth Self Report (YSR)</b></p> <p>Source: Achenbach (1991b)</p>	<p><u>Format</u>: Phone interview self-report behavior checklist</p> <p><u>Items</u>: 118</p> <p><u>Information source</u>: Children/adolescents</p> <p><u>Target population</u>: 11–18 year olds</p> <p><u>Administration time</u>: 15 minutes</p>	<ul style="list-style-type: none"> <li>• Provides classification of childhood psychopathology based on symptoms.</li> <li>• Nine subscales of behavior problems.</li> <li>• Three global problem scales (Externalizing, Internalizing, and Total Problems).</li> <li>• Social competence.</li> </ul>	<p>See Baseline Instruments: Adolescent Module.</p>

**Followup Instruments: Provider/Helper Module (Mail Survey)**

<p>Title: <b>Helping Alliance Scale – Helper Version (HAS-H)</b></p> <p>Source: Based on Adolescent Working Alliance Inventory; Linscott, DiGiuseppe, &amp; Jilton, 1993; and Therapeutic Alliance Scales for Children, Shirk &amp; Saiz (1992)</p>	<p><u>Format:</u> Mail survey  <u>Items:</u> 30  <u>Information source:</u> Primary provider (clinician) and possibly one additional, parent- or youth-identified provider or helper  <u>Target Population:</u> 11–18 year olds  <u>Administration time:</u> 5 minutes</p>	<p>Measures strength of the helping relationship between a child and a helping person:</p> <ul style="list-style-type: none"> <li>• Openness</li> <li>• Supportive caring</li> <li>• Bond</li> <li>• Agreement on goals</li> <li>• Perceptiveness of helper</li> </ul>	<p>See Baseline Instruments: Provider/Helper Module.</p>
<p>Title: <b>Helping Behaviors Checklist – Clinician Version</b></p> <p>Source: Based on Weersing (1996)</p>	<p><u>Format:</u> Mail survey  <u>Items:</u> 58  <u>Information Source:</u> Primary provider and possibly one additional, parent- or youth-identified provider  <u>Administration time:</u> 10 minutes</p>	<p>Measures provider’s behaviors that are meant to help the child.</p>	<ul style="list-style-type: none"> <li>• Provides important information on the “black box” of treatment and helping approaches used in wraparound care.</li> </ul>
<p>Title: <b>Helping Behaviors Checklist—Non-Clinician Version</b></p> <p>Source: Based on Weersing (1996)</p>	<p><u>Format:</u> Mail survey  <u>Items:</u> 30  <u>Information Source:</u> Primary provider and possibly one additional, parent- or youth-identified provider  <u>Administration time:</u> 5 minutes</p>	<p>Measures helper’s behaviors that are meant to help the child.</p>	<ul style="list-style-type: none"> <li>• Provides important information on the “black box” of treatment and helping approaches used in wraparound care.</li> <li>• Provides data concerning helpers outside the wraparound system that may account for child outcome.</li> </ul>
<p>Title: <b>Parent-Helper Relationship Questionnaire – Clinician Version</b></p> <p>Source: modified version of the Working Alliance Inventory—Short Form (WAI-S; Tracey &amp; Kokotovic, 1993)</p>	<p><u>Format:</u> Mail Survey  <u>Items:</u> 16  <u>Information source:</u> Clinician  <u>Target population:</u> Parents/primary caregivers and their children’s primary providers  <u>Administration time:</u> 3 minutes</p>	<ul style="list-style-type: none"> <li>• Relationship between parent/primary caregiver and the child’s primary provider</li> <li>• Amount of provider’s contact and familiarity with child’s parent or primary caregiver</li> </ul>	<p>See Baseline Instruments: Parent/Primary Caregiver Module.</p>
<p>Title: <b>Service Process Index for Families and Youth (SPIFY)</b></p> <p>Source: Bramley, J., Burchard, J., &amp; Tighe, T. (1999)</p>	<p><u>Format:</u> Phone interview  <u>Items:</u> 24  <u>Information source:</u> Provider  <u>Administration time:</u> 10 minutes</p>	<p>Measures degree to which there is a team, including the family and child, that works together in selecting, providing, and evaluating services for the child/family.</p>	<ul style="list-style-type: none"> <li>• Only tool currently available that attempts to measure this construct.</li> </ul>



## Appendix F: Logic Model

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Phase 1	Program Activities	Rationale	Proximal Outputs	Distal Outputs
<b>REFERRAL TO / RECRUITMENT FOR WRAPAROUND PROJECT</b>	Merit Behavioral Care Corporation publicizes Wraparound Program to Merit Case Manager Supervisors, Merit’s Health Care Finders (HCF), Military Treatment Facilities (MTFs), providers, etc.	Wraparound Program wants to consider a broad spectrum of cases for admission, selecting those that best meet its criteria and objectives. For that reason, no restrictions on potential sources for case identification.	Referral sources are aware of wraparound demonstration <ul style="list-style-type: none"> <li>• The Wraparound Program identified and advertised to an exhaustive pool of individuals/organizations that could refer to demonstration (e.g., MTF, healthcare providers, families, schools, mental health treatment facilities, etc.).</li> </ul> Referral sources know how to access the demonstration <ul style="list-style-type: none"> <li>• Referral sources know:               <ul style="list-style-type: none"> <li>• Nature of the program</li> <li>• Target family/child population for program</li> <li>• Method for referring families to the program.</li> </ul> </li> </ul>	<b>Coverage for referral sources</b> – Quantity of referral sources who should know about demonstration <ul style="list-style-type: none"> <li>• Identify individuals and organizations that could refer youth and families to demonstration.</li> </ul> <b>Penetration rate for referral sources</b> —Quantity of referral sources who received information about demonstration <ul style="list-style-type: none"> <li>• Number of referent sources sent information about demonstration divided by all potential referent sources.</li> </ul> <b>Coverage for youth/families</b> —Quantity of youth who are eligible for wraparound demonstration <ul style="list-style-type: none"> <li>• Identify all potentially “eligible” wraparound cases using HCSR data as best proxy.</li> </ul> <b>Penetration rate for youth/families</b> —Quantity of youth who come to the attention of the demonstration and/or where accepted into the demonstration: <ul style="list-style-type: none"> <li>• Number of referred cases divided by total number of eligible cases</li> <li>• Number of enrolled cases divided by total number of eligible cases.</li> </ul>
	Care Managers receive referrals for wraparound services from HCF, MTFs, providers, and families.			

Phase 2	Program Activities	Rationale	Proximal Outputs	
<b>ELIGIBILITY REVIEW</b>	See flow chart	<p>Goal of the admissions process is to ensure that the most appropriate cases are placed into the Wraparound Project.</p> <p>Master Plan considers needed services, availability of services, probability that the services will allow the participant to function effectively in the community.</p>	<ul style="list-style-type: none"> <li>• Parents/legal guardians’ level of interest in wraparound project</li> <li>• Parents/legal guardians’ willingness to participate in their child/adolescent’s care while in wraparound</li> <li>• Length of time for assessing parents/legal guardians’ level of interest and willingness to participate in wraparound program.</li> </ul>	
			<p>Eligible youth have the following characteristics:</p> <ul style="list-style-type: none"> <li>• Parent/legal guardian committed participate in their child’s treatment: <ul style="list-style-type: none"> <li>• Agrees to join the treatment team</li> <li>• Agrees to change child’s enrollment to Prime for duration of involvement in wraparound program.</li> </ul> </li> <li>• Location—Family currently resides and is planning to remain in the CENTRAL Region for the next 2 years.</li> <li>• Youth: <ul style="list-style-type: none"> <li>• Is a TRICARE beneficiary</li> <li>• Is 4–16 years old at initiation of the demonstration</li> <li>• Has a valid DSM-IV diagnosis (waived when multiple sibs are involved and one sib has a valid DSM-IV diagnosis)</li> <li>• Meets the approved TRICARE criteria (HMSI) for residential or inpatient care and preparing for discharge from RTC/inpatient setting and be high risk for recidivism: <ul style="list-style-type: none"> <li>• Long standing (at least 6 months) psychiatric condition which hasn’t been stabilized in an outpatient setting</li> <li>• Patient presents with a long standing psychiatric condition characterized by severely distressing, disruptive and/or immobilizing symptoms which are persistent and pervasive</li> <li>• Long standing inability to perform age appropriate roles and tasks in several life areas</li> <li>• Long standing inability to accomplish age-appropriate adaptive and developmental tasks</li> <li>• Long standing impairment in performing essential activities of daily living, which seriously impacts physical and/or mental health.</li> </ul> </li> <li>• Is amenable to treatment: <ul style="list-style-type: none"> <li>• Youth participated past treatment—can assist in his/her treatment</li> <li>• Youth motivated to change/ participate in treatment</li> <li>• Youth has been compliant with past treatment</li> <li>• Youth was actively involved in past treatment</li> <li>• Youth experience reduction in symptoms/ improvement in level of functioning with past treatment</li> </ul> </li> <li>• Does not require long-term custodial care in RTC or nursing facility.</li> </ul> </li></ul>	<p>Ineligible youth have the following characteristics:</p> <ul style="list-style-type: none"> <li>• “Excluded from this demonstration are TRICARE eligible children and adolescents with a valid DSM-IV diagnosis which are not generally regarded as either serious and/or amenable to treatment and mental health services are related to custodial care, or which are determined to be primarily educational.”</li> <li>• Manifestations of “significant” anti-social behaviors that are not the product of a treatable mental disorder (e.g., harm to others, destruction of property, and total disrespect for laws and regulations).</li> <li>• Has a “significant” developmental disability or cognitive impairment that prevents child/adolescent from utilizing the treatment resources of program.</li> <li>• History of abuse/neglect and no workable plan to protect child/adolescent from additional harm.</li> <li>• Not amenable to treatment: <ul style="list-style-type: none"> <li>• Older youth (&gt; 8 years old) has persistent history of procuring and using illicit substances despite appropriate treatment and is not motivated to rehabilitate</li> <li>• Teenagers who are non-compliant with previous treatment</li> <li>• Youth unstable: <ul style="list-style-type: none"> <li>• Cannot function in home environment (exceptions made when youth was in safe/stable living situation that was not in parent’s home)</li> <li>• Requires long-term custodial care</li> <li>• Long term out-of-home placement</li> <li>• Requires supervision</li> </ul> </li> <li>• History of repeated episodes of run away</li> <li>• Youth is a sexual perpetrator</li> <li>• Youth exhibits severe conduct disorder related behaviors</li> <li>• Family has problems too complex/severe to be addressed by wraparound (e.g., poverty, domestic violence)</li> <li>• Youth has significant legal problems that prohibit participation in wraparound.</li> </ul> </li> </ul>
Length of time for eligibility review and preparation for presentation to CMC for suitability review.				

Phase 3	Program Activities	Rationale	Proximal Outputs
<b>SUITABILITY REVIEW</b>	Care Managers and Medical Director and/or Program Director review the case for Suitability Review.	<ul style="list-style-type: none"> <li>• Preliminary suitability review helps determine if case goes further.</li> </ul>	<ul style="list-style-type: none"> <li>• Number of days for suitability review by CMC.</li> </ul>
	Based on initial information gathered for eligibility and suitability review and input from parents and teenagers, draft master plan is written by independent case manager/care manager.	<ul style="list-style-type: none"> <li>• The suitability review allows the CMC to decide if an adequate Master Plan can be developed to assist this child/adolescent to recover from his/her illness and function effectively in the community.</li> </ul>	<ul style="list-style-type: none"> <li>• Based on eligibility criteria and suitability reviews, appropriate applicants are accepted and inappropriate applicants are rejected by the CMC.</li> </ul>
	Care Manager presents case, including Master Plan, to Clinical Management Committee (CMC).		<ul style="list-style-type: none"> <li>• Appropriate Master Plan approved by CMC that addresses:               <ul style="list-style-type: none"> <li>• Educational issues</li> <li>• Community resources</li> <li>• Array/spectrum of traditional and nontraditional services available to youth/family in local area</li> <li>• Need for additional/more in-depth evaluation/assessment</li> <li>• Level/type of services for youth/family</li> <li>• Level/type of therapist for participant youth/family</li> <li>• Frequency of services for youth/family</li> <li>• Coordination of services and providers</li> <li>• If on medications related to behaviors/ mental health, include medication management.</li> </ul> </li> </ul>
	CMC reviews potential case to determine: <ul style="list-style-type: none"> <li>• Case meets eligibility criteria</li> <li>• Case meets selection guidelines.</li> </ul>		
	CMC determines if child/adolescent is likely to “benefit from wraparound” and/or have positive outcome based on: <ul style="list-style-type: none"> <li>• Child/adolescent’s needs</li> <li>• Match between Master Plan and needs</li> <li>• Difficulty finding providers/ services to fulfill Master Plan (CMC has made exceptions when area is not rich in resources)</li> <li>• Parents/legal guardians’ level of commitment.</li> </ul>		
	CMC reviews the Master Plan—accepts, accepts with modifications, or rejects.		

Phase 4	Program Activities	Rationale	Proximal Outputs					
<p><b>ANCHOR FACILITY CASE REVIEW</b></p> <p><b>Anchor facilities were de-emphasized as managers/providers of services as the program matured</b></p> <p><b>Last case accepted by anchor facility was in December 1999</b></p>	<p>Care Manager sends Case Manager background, history and Master Plan for child/adolescent.</p>		<p>Adequate background and clinical information about case.</p>					
	<p>Anchor team (team members vary by facility) review case.</p>		<table border="1"> <tr> <td>Acceptable cases</td> <td>Unacceptable cases</td> </tr> <tr> <td colspan="2">(Individual and/or groupings of criteria may vary by anchor facility.)</td> </tr> </table>		Acceptable cases	Unacceptable cases	(Individual and/or groupings of criteria may vary by anchor facility.)	
	Acceptable cases		Unacceptable cases					
(Individual and/or groupings of criteria may vary by anchor facility.)								
<p>If case accepted, then</p> <ul style="list-style-type: none"> <li>• Anchor facility assigns a Case Manager</li> <li>• Care Managers and Case Managers review the Master Plan and detail how it will be implemented.</li> </ul>	<table border="1"> <tr> <td> <ul style="list-style-type: none"> <li>• Youth has not received RTC for the past 6 months.</li> <li>• Younger children.</li> <li>• Some familiarity with/ control over the child’s therapist.</li> <li>• Parents/legal guardians:               <ul style="list-style-type: none"> <li>• Want wraparound services</li> <li>• Support treatment recommendations</li> <li>• Are “self-starters.”</li> </ul> </li> <li>• Parents/legal guardians are motivated to help their child:               <ul style="list-style-type: none"> <li>• Willing to attend staff meetings</li> <li>• Willing to take child to appointments</li> <li>• Willing to participate in therapeutic activities</li> <li>• Participated in past therapeutic activities.</li> </ul> </li> </ul> </td> <td> <ul style="list-style-type: none"> <li>• Youth:               <ul style="list-style-type: none"> <li>• Is unwilling/ unable to participate in treatment (e.g., chronic runaway, jailed)</li> <li>• Has too high acuity/severity</li> <li>• Psychotic and unwilling to take medication</li> <li>• Requires long-term RTC</li> <li>• “Out of control”</li> <li>• Repeated admissions</li> <li>• Non-fatal suicide gestures</li> <li>• Sex offender</li> <li>• Unable to maintained in home (goes home and falls apart).</li> </ul> </li> <li>• High rate of recidivism—Despite being given full spectrum of services (including previous wraparound services), child keeps coming back to acute setting/RTC.</li> <li>• Parent(s)/guardian(s) are impaired (e.g., abuse drugs or alcohol) and not working towards improvement.</li> </ul> </td> </tr> </table>		<ul style="list-style-type: none"> <li>• Youth has not received RTC for the past 6 months.</li> <li>• Younger children.</li> <li>• Some familiarity with/ control over the child’s therapist.</li> <li>• Parents/legal guardians:               <ul style="list-style-type: none"> <li>• Want wraparound services</li> <li>• Support treatment recommendations</li> <li>• Are “self-starters.”</li> </ul> </li> <li>• Parents/legal guardians are motivated to help their child:               <ul style="list-style-type: none"> <li>• Willing to attend staff meetings</li> <li>• Willing to take child to appointments</li> <li>• Willing to participate in therapeutic activities</li> <li>• Participated in past therapeutic activities.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Youth:               <ul style="list-style-type: none"> <li>• Is unwilling/ unable to participate in treatment (e.g., chronic runaway, jailed)</li> <li>• Has too high acuity/severity</li> <li>• Psychotic and unwilling to take medication</li> <li>• Requires long-term RTC</li> <li>• “Out of control”</li> <li>• Repeated admissions</li> <li>• Non-fatal suicide gestures</li> <li>• Sex offender</li> <li>• Unable to maintained in home (goes home and falls apart).</li> </ul> </li> <li>• High rate of recidivism—Despite being given full spectrum of services (including previous wraparound services), child keeps coming back to acute setting/RTC.</li> <li>• Parent(s)/guardian(s) are impaired (e.g., abuse drugs or alcohol) and not working towards improvement.</li> </ul>				
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Phase 5	Program Activities	Rationale	Proximal Outputs
<p><b>INITIATION OF WRAPAROUND PROGRAM</b></p> <p><b>Development of treatment plan for individual participant</b></p>	Case Manager organizes and develops/coordinates treatment team.	<ul style="list-style-type: none"> <li>• Array/continuum of services and various types of providers address the needs/strengths of youth and families and offer services that allow participant to remain in least restrictive setting closest to home.</li> <li>• Nontraditional services will help keep child in the least restrictive/ costly setting and help youth/ family maintain activities of daily living.</li> <li>• Community resources will allow optimal care of the patient in the community of residence of the member and family.</li> <li>• Providing funding for nontraditional service improves access and flexibility of those services.</li> <li>• Case Managers improve access to services, tie providers together, keep treatment team members informed about services and child/family response to services.</li> <li>• Master treatment plan is intended to be a fluid document that is reflective of the patient’s treatment needs and provides direction on how to meet those needs.</li> <li>• With input from the CMC and Care mangers, operationalization of the Master Plan via the treatment plan is left to the Case Manager because s/he knows the family the best.</li> <li>• Care Managers, Case Managers, Medical director, Clinical Director, and Anchor facility will work together to produce a treatment strategy likely to produce a positive outcome.</li> <li>• Children relate better if they are kept in the family home – they have better rapport and confidence in providers</li> <li>• Families continue to actively participate in therapy when it is home based.</li> </ul>	<ul style="list-style-type: none"> <li>• The treatment plan that is developed, meets the following characteristics: <ul style="list-style-type: none"> <li>• Individualized to participant’s need—“less generic”</li> <li>• Flexible—“people willing to look at other options”</li> <li>• Addresses child/adolescent, family, community strengths</li> <li>• Includes a systematic review in education, physical health, mental health</li> <li>• Addresses crisis intervention plan in place</li> <li>• If participant goes into inpatient/ RTC and communication is timely with wraparound program, case/care manager involved in after-care planning.</li> </ul> </li> <li>• Master Plan is operationalized so that the treatment plan is consistent with Master Plan: <ul style="list-style-type: none"> <li>• Services that the Master Plan recommends are offered to the participant and family</li> <li>• Services that are not on the Master Plan are not offered to the participant and family.</li> </ul> </li> <li>• Match youths/families to services/providers based on pool of available resources: <ul style="list-style-type: none"> <li>• Try to meet families’ requests.</li> </ul> </li> <li>• Good match between youths/families to providers: <ul style="list-style-type: none"> <li>• Therapist is not authoritarian</li> <li>• “Connects” with family (therapeutic alliance).</li> </ul> </li> <li>• Intensive case management: <ul style="list-style-type: none"> <li>• No more than 15 wraparound clients in case load per Case Manager FTE</li> <li>• Each Case Manager spends at least 2.5 hours a week on each participant in caseload</li> <li>• Assistant service locator (e.g., find providers/services in child’s local community, facilitates provider returning credentialing materials)</li> <li>• Knowledgeable about “big picture” with respect to youth’s current service utilization, general current and future treatment plans, individual providers current treatment plans, and youth’s status/progress</li> <li>• Information conduit for wraparound offices, CMC, providers, and families</li> <li>• Supports providers through consultants and feedback</li> <li>• Provides central wraparound offices (care manager) with regular updates on youth’s status, treatment, and progress</li> <li>• Insures treatment goals are measurable/objective and monitors progress towards goals</li> <li>• Addresses problems if youth/parents are not compliant with treatment plan/recommendations</li> <li>• Provides support to parents – advocate for child/family, “near therapist”</li> <li>• Liaison between parents and central wraparound offices/CMC</li> <li>• Addresses youth’s crisis.</li> </ul> </li> <li>• Number of days between case being presented to (anchor facility)/independent case manager and Care Manager receives treatment plan.</li> <li>• Number of days to receipt of first services.</li> <li>• Number of days to receipt of all services included in Master Plan.</li> <li>• Number of days to receipt of all service included in treatment plan.</li> </ul>
	Case Manager will establish rapport with the patient, family and treatment team.		
	Case Managers will serve as a link between participants, providers, and the Merit wraparound staff (e.g., care managers, project director, medical director).		
	Treatment team (i.e., Case Manager, attending physician, identified service providers, patient, legal guardians/ parents, guardian ad litem, probation officer, school personal) develops treatment plan based on Master Plan.		
	Case Managers provide intensive case management.		
	The Case Manager and treatment team (usually parent with input some point I time from other providers) will prepare and present to the Care Manager a detailed, operationalized plan for implementing the Master Plan.		
	CMC reviews the treatment plan if there is a major change in youth’s case (e.g., change in diagnosis, request for new services, sentential event, etc.).		

Phase 6	Program Activities	Rationale	Proximal Outputs
<p><b>INITIATION OF WRAPAROUND PROGRAM</b></p> <p><b>Credentialing/ Privileging providers/ services for individual participant</b></p>	<p>Through Master Plan, CMC may direct type of providers that are suitable for fulfilling Master Plan recommendations. Often Independent/(anchor facility) Case managers and Care Manager will determine the type of practitioners needed to deliver the most appropriate level of care.</p>	<p>Providers and services meet basic credential and safety standards.</p>	<ul style="list-style-type: none"> <li>• MBC TRICARE Credentialing Committee will meet to review completed credentialing packets within 5 days.</li> <li>• Number of days to find providers in community for traditional and nontraditional providers.</li> <li>• Number of days to credential/authorize providers/service settings.</li> <li>• Improved access to services – participants receive services more quickly than comparison group.</li> <li>• Identify and/or develop an intensive, community-based array of treatment services:               <ul style="list-style-type: none"> <li>• System based – entire service system is involved in service delivery</li> <li>• Services are local to child and family</li> <li>• Total number of children who receive services within 50 miles of their home/ total number of children enrolled in wraparound</li> <li>• Total number of children who do not receive services within 50 miles of home/ total number of children enrolled in wraparound</li> <li>• Greater quantity/variety of services available for inclusion in treatment plan</li> <li>• Increased variety/ array of services</li> <li>• Safety plan in place for timely responses for emergencies</li> <li>• Includes traditional services – outpatient therapy (individual, group, family), partial hospitalization, inpatient/ RTC</li> <li>• Includes nontraditional services—in-home services (e.g., therapist, attendants), behavioral health care technicians, therapeutic foster care, respite care, phone consultations, support for parents, mentors, group homes, recreational services.</li> </ul> </li> <li>• High quality providers:               <ul style="list-style-type: none"> <li>• No criminal record</li> <li>• Educational background appropriate to youth/family needs and demands of treatment plan</li> <li>• Informed/educated about conditions found in wraparound population (formal education not a proxy for this concept)</li> <li>• Collaborate with youth/families</li> <li>• Adjust treatment based on feedback from youth, family, and/or case manager</li> <li>• Overall, youth/family satisfied with provider</li> <li>• Provider establishes therapeutic alliance with youth and/or family.</li> </ul> </li> <li>• Appropriate match between providers and each wraparound participant.</li> </ul>
	<p>Care Managers, Independent (Anchor Facility) Case Managers, families and/or Merit Credentialing Team (e.g., Judy Sears) attempt to identify providers and/or services in child/adolescent’s local community.</p>		
	<p>If provider/services are not credentialed/privileged, then Merit’s Credentialing Team investigates provider/services.</p>		
	<p>Merit’s Credentialing Team (e.g., Judy Sears) contact providers to collect information for credentialing process. Process can include extensive research (e.g., interviews, reviewing program services – “detailing” a facility confirmation of licensure) and utilization of resources.</p>		
	<p>MBC credentialing office will verify providers credentials and MBC TRICARE Credentialing Committee will review packet.</p>		
	<p>When questions about services/ providers in an area with limited resources, CMC reviews privileging/credentialing packet. May make exceptions to original Master Plan recommendations for providers based on provider availability in community and supervision by advanced providers.</p>		

Phase 7	Program Activities	Proximal Outputs	Distal Outputs
<p><b>WRAPAROUND PROGRAM</b></p> <p><b>Implement treatment plan for individual participant</b></p>	<ul style="list-style-type: none"> <li>Case Manager speaks with family and providers at least once a week (and occasionally youths) to monitor the implementation of the treatment plan, gather information about family's progress, compliance with current treatment recommendations, new service needs, renewal for current services, problem solve service/ treatment issues.</li> <li>Case Manager and Care Manager communicate via phone, e-mail, written reports/letters about treatment plan, participant's progress and status at least once a week.</li> <li>Care Manager reports participant's progress to CMC at least quarterly.</li> <li>Should problems with child/adolescent's behaviors/symptoms, treatment services, or other arise, the CMC is available for consultation to problem solve.</li> <li>Consultations with wraparound psychiatrist available for children who are having medication problems, sudden change in status (e.g., sentential event without explanation).</li> <li>Based on communication and feedback among the wraparound treatment team, changes to treatment plan not included in the master plan, are decided by the Case Manager, treatment team, and Care Manager with consultation and approval by MBC medical director, project director, and CMC.</li> </ul>	<p>In contrast to comparison group, Wraparound participants have:</p> <ul style="list-style-type: none"> <li>Greater alliance between family and treatment team <ul style="list-style-type: none"> <li>Parents are treatment team members</li> <li>Parent reports feeling involved in treatment</li> <li>Parent provides feedback to providers</li> <li>Parent/youth (&gt;=1 lish) report seeing/signing treatment plan</li> <li>Parent satisfaction with services</li> </ul> </li> <li>Greater therapeutic alliance <ul style="list-style-type: none"> <li>Between parent and Case Manager</li> <li>Between child and primary therapist</li> <li>Between parent and primary therapist</li> </ul> </li> <li>Services more consistent with wraparound components and philosophy</li> <li>Improved compliance with treatment recommendations <ul style="list-style-type: none"> <li>50 percent increase in keeping scheduled appointments</li> <li>50 percent increase in following medication schedule</li> <li>Decreased numbers of against medical advise (AMA) discharges</li> <li>Fewer elopements from inpatient/ RTC</li> </ul> </li> <li>More dynamic, adaptive and responsive Master Plan/ treatment plan <ul style="list-style-type: none"> <li>The increased communication among the wraparound agents will lead to more timely acknowledgement of <ul style="list-style-type: none"> <li>Youth/family needs for new and current services,</li> <li>Youth/family compliance with treatment,</li> <li>Changes in youth/family status,</li> <li>Youth behavioral symptoms</li> </ul> </li> <li>Treatment plan/services will adjust accordingly.</li> </ul> </li> </ul>	<p>In contrast to comparison group, child/Wraparound participants:</p> <ul style="list-style-type: none"> <li>Remain in family home or least restrictive setting for greater period of time</li> <li>Have reduced utilization and costs for services/ medications <ul style="list-style-type: none"> <li>Fewer episodes/ less recidivism for hospitalizations and/or RTC</li> <li>15 percent reduction in number of days for inpatient/ RTC</li> </ul> </li> <li>Have more cost effective outcomes <ul style="list-style-type: none"> <li>Better outcomes for less money from hospitalizations and/or RTC</li> <li>Less cost shifting among wraparound program, educational system, juvenile justice system, state/local welfare systems</li> </ul> </li> <li>Have less involvement with legal system and Departments of Human Services <ul style="list-style-type: none"> <li>Fewer contacts (e.g., investigations, services, monitoring) with Child Protective Services</li> <li>Fewer contacts with law enforcement and court system</li> <li>Fewer episodes of domestic violence</li> </ul> </li> <li>Have improved child outcomes <ul style="list-style-type: none"> <li>Decreased polypharmacy</li> <li>More stable mood</li> <li>Better coping</li> <li>Better functioning with school, home and peers</li> <li>Improved rate of passing classes/ grade level</li> <li>Improved classroom performance</li> <li>Improved classroom grades</li> <li>Fewer sentinel events—(hospitalizations, self-destructive behaviors, expulsions from school, arrests, pregnancy)</li> </ul> </li> <li>Have improved parent/family outcomes <ul style="list-style-type: none"> <li>Reduced family mental health expenditures</li> <li>Decrease in family turmoil</li> <li>Parents/ legal guardians recognize child's needs</li> <li>Family increases/improves self care activities</li> <li>Increase in family activities that involve all family members</li> <li>Increased family involvement in the community</li> <li>Parents/ legal guardians miss fewer days of work</li> <li>Able to access services, if needed, in the future</li> <li>Better disciplining – consistency, appropriate punishments.</li> </ul> </li> </ul>



## **Appendix G: Fact Sheet**

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## **MENTAL HEALTH WRAPAROUND DEMONSTRATION PROJECT**

*Mental Health Services for Children and Teens Provide Care with a Difference*

### **What is “Wraparound”?**

The Mental Health Wraparound Demonstration Project tests the hypothesis that the use of a wide array of traditional and non-traditional community-based mental health services builds support for the patient, enables shorter inpatient stays, reduces recidivism for residential care, lowers the overall cost of care, and decreases the out-of-pocket expense to the military family.

The Project is available for selected beneficiaries residing in the TRICARE Central Region. The target population is children and teens, ages 4–16, who are dependents of active duty service members or military retirees, and have a psychiatric disorder that is safely amenable to community-based care.

Wraparound services are individually tailored mental health services designed to allow the child or teen to remain at home or in the least restrictive treatment setting. Key to the concept of the Wraparound Demonstration Project is the close relationship between parents and the case managers at treatment centers known as “anchor facilities.” The parents and anchor facility case managers are brought together to form the hub of treatment to meet the needs of the child or teen.

The Project is administered and supported by Merit Behavioral Care (MBC) Corporation. MBC is the mental health and substance abuse (MH/SA) subcontractor for TriWest Healthcare Alliance in the TRICARE Central Region and is a wholly owned subsidiary of Magellan Behavioral Health.

### **Who qualifies for this Project?**

The Project is scheduled to run for a two-year period and will provide services to 150 children and teens selected from the TRICARE Central Region. The following outlines the qualifications for participation in the Project:

- Participants must be TRICARE-eligible.
- Children and teens selected must be between the ages of 4 and 16 on the date accepted.
- There must be at least one parent willing and available to participate.

- The child/teen and participating parent(s) must reside in the TRICARE Central Region and expect to remain in the Region throughout the duration of the Project.
- The child/teen must have a valid DSM-IV diagnosis that is safely amenable to community-based treatment.
- The child/teen must meet approved criteria for inpatient or residential level of care, or be in preparation for discharge from that level of care, and at high risk for recidivism.
- Parents and teens must provide a statement of written commitment to accept and abide by the terms of the Project.
- The joint Government/MBC Clinical Management Committee and the anchor facility must provide approval for acceptance of all participants.

### **What's different about Wraparound?**

Wraparound is family-centered and community focused. The parent(s) and the anchor facility case manager are co-captains of the treatment team. They meet regularly, in-person, or telephonically to discuss progress and plan treatment. Treatment team meetings may also include other care providers and/or the child/teen.

This tailored approach to patient care allows MBC to authorize comprehensive and creative mental health services. The services encompass traditional outpatient care, inpatient and residential services, and alternative mental health services such as in-home therapy, telephone consultation, respite care, therapeutic group and foster home and mentor services. Additional mental health services can be provided, as needed, with the approval of the TRICARE Management Activity Office.

In the past, mental health services for children and teens often included lengthy stays in hospital or long-term residential treatment facilities. While utilizing psychiatric hospitalization and residential care as may be required, the focus of the Project is to provide comprehensive services in the community. The Project seeks to recognize and build on strengths inherent in the individual, the family and the area where the family resides. It is the goal of the Project to prevent institutionally based care and to move swiftly from institutional services to community care, when it is safe to do so.

All children and teens accepted into the Project are covered under the TRICARE Prime option for all mental health services. The customary copayments for traditional mental health services will apply, but for services that are unique to the Project (e.g., mentor, in-home therapy, telephone outreach, etc.), no copayments apply.

The child/teen may be referred by MBC TRICARE, practitioners at the military treatment facility (MTF), the PCM, community social services or by the parent(s). While the child/teen is in the Project, close coordination with the PCM and all other health care providers will be maintained.

**How do I refer a child/teen to the Wraparound Demonstration Project?**

Any physician, parent, mental health provider or social service professional may refer a child/teen to the Project. To refer a child/teen, call the MBC Wraparound Project staff at 1-800-871-5079, extension 2364. The office is open weekdays from 8 a.m. to 5 p.m., Mountain Standard Time. (The office is located in Phoenix, Arizona. Arizona does not observe daylight saving time.) A MBC care manager will provide information about the Project and obtain information from the referring source concerning the child/teen. If the case seems appropriate, the MBC care manager will obtain additional information from available records and the family, and will discuss the case with the case manager at the anchor facility. The time it takes to process a referral to the Project depends on the complexity of the case and the cooperation of the parent(s).

If the child/teen meets all criteria and the family agrees to participate in the Project, the case will be presented to the Government/MBC Clinical Management Committee, which is chaired by a board-certified child and adolescent psychiatrist.

**I'm a mental health professional. How do I become a provider for the Project?**

Selection of Wraparound providers is based on the needs and location of the patient. The first step in becoming a provider for the Wraparound Project is to contact the case managers at the anchor facilities. The case managers help to identify appropriate and creative treatment options tailored to the specific needs of the children and teens in the Project. The Wraparound Project, in large measure, depends on the knowledge and expertise of the case managers at the anchor facility.

Currently, the Project has five anchor facilities. The facilities are located in Lenexa and Topeka, Kansas; Colorado Springs, Colorado; Phoenix, Arizona; and Boise, Idaho. To obtain the names and numbers of the case managers, please call the Wraparound Project office at 1-800-871-5079, extension 2364.

If you are already a TRICARE provider and are approved for the Wraparound Project, the Wraparound staff can assist you immediately. If you are a licensed mental health practitioner and are chosen to provide services in the Wraparound Project, the Wraparound Project Resource Development Team in Denver will assist you in the MBC credentialing process.

If you become part of the Wraparound Project treatment team, you are required to stay in close communication with your assigned anchor facility case manager. You are expected to report compliance and progress to the case manager, and are also required to request additional authorization for services from the case manager.

**What if I have more questions about the Project?**

Please call the Wraparound Project director at 1-800-871-5079, extension 2364 during business hours.



## **Appendix H: Provider Clinical Discipline By State**

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Year End 1998		
State	Providers	Enrolled
Arizona	17	8
Colorado	20	18
Idaho	3	3
Illinois		
Iowa	2	1
Kansas	8	3
Minnesota		
Missouri	10	10
Montana	1	1
Nebraska	4	2
Nevada	9	4
N. Mexico	8	3
N. Dakota	1	
S. Dakota	1	1
Texas	2	2
Utah		
Wyoming		
Total	86	56

Providers by Discipline and State—1998												
State	MD	MSW	PhD	Para	MHC	LMFT	SW	Case Mgr	Mentor	Other	UNK	Total
Arizona	2	7	2	2	3			1				17
Colorado	8	7	1	2	2							20
Idaho	1	2										3
Illinois												0
Iowa		1	1									2
Kansas	2	4	1		1							8
Minnesota												0
Missouri	3	3	3	1								10
Montana		1										1
Nebraska	1	1	1		1							4
Nevada	2	1	1	4	1							9
N. Mexico	2	4		1					1			8
N. Dakota		1										1
S. Dakota		1										1
Texas	1	1										2
Utah												0
Wyoming												0
Total	22	34	10	10	8	0	0	1	1	0	0	86

Year End 1999		
State	Providers	Enrolled
Arizona	24	15
Colorado	22	24
Idaho	10	10
Illinois*	1	
Iowa		
Kansas	23	4
Minnesota	2	2
Missouri	15	5
Montana	6	2
Nebraska	6	2
Nevada	3	
N Mexico	3	
N. Dakota	5	3
S. Dakota	3	2
Texas	7	6
Utah	4	2
Wyoming		
Total	134	77

Providers by Discipline and State—1999												
State	MD	MSW	PhD	Para	MHC	LMFT	SW	Case Mgr	Mentor	Other	UNK	Total
Arizona	8	4	4	2	2	1				2	1	24
Colorado	3	6	4	3	5		1					22
Idaho	2	1			3					4		10
Illinois	1											1
Iowa												0
Kansas	4	3	5	7	2	1				1		23
Minnesota	1					1						2
Missouri	4	5	1	3	1					1		15
Montana	3	1			1					1		6
Nebraska		3	2		1							6
Nevada	1	1				1						3
N. Mexico	1		1		1							3
N. Dakota	2		2			1						5
S. Dakota	1	1	1									3
Texas	1	1		2	3							7
Utah	2		2									4
Wyoming												0
Total	34	26	22	17	19	5	1	0	0	9	1	134

\*Although Illinois is not in the Central Region, at least one provider was recruited there in 1999.

Year End 2000		
State	Providers	Enrolled
Arizona	14	9
Colorado	17	16
Idaho	10	3
Illinois		
Iowa		1
Kansas	12	6
Minnesota		
Missouri	15	11
Montana	2	1
Nebraska	9	7
Nevada	5	5
N. Mexico	5	3
N. Dakota	3	
S. Dakota	6	2
Texas	12	15
Utah	13	9
Wyoming		
Total	123	88

Providers by Discipline and State—2000												
State	MD	MSW	PhD	Para	MHC	LMFT	SW	Case Mgr	Mentor	Other	UNK	Total
Arizona	3		3	1	1	2	1			3		14
Colorado	4		3			1	7			2		17
Idaho	3	2			2		1			2		10
Illinois												0
Iowa												0
Kansas	4		3		1	1	2			1		12
Minnesota												0
Missouri	9	1			4	1						15
Montana	1						1					2
Nebraska	4				5							9
Nevada						2	1			2		5
N. Mexico		2					3					5
N. Dakota	2						1					3
S. Dakota	1		2	2			1					6
Texas	2		2	1	2		5					12
Utah	4		3	1			1			4		13
Wyoming												0
Total	37	5	16	5	15	7	24	0	0	14	0	123



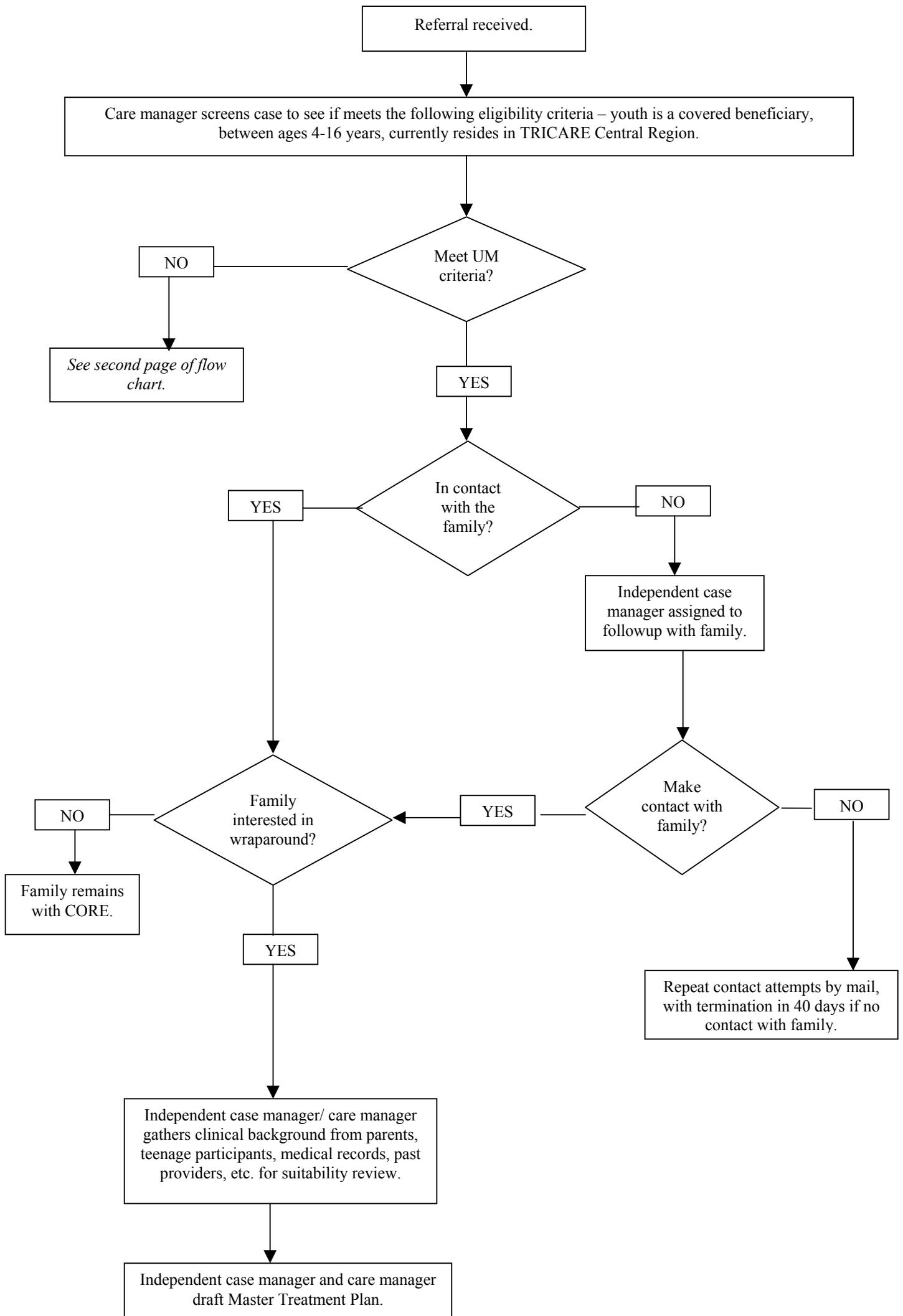
## **Appendix I: Intake Process**

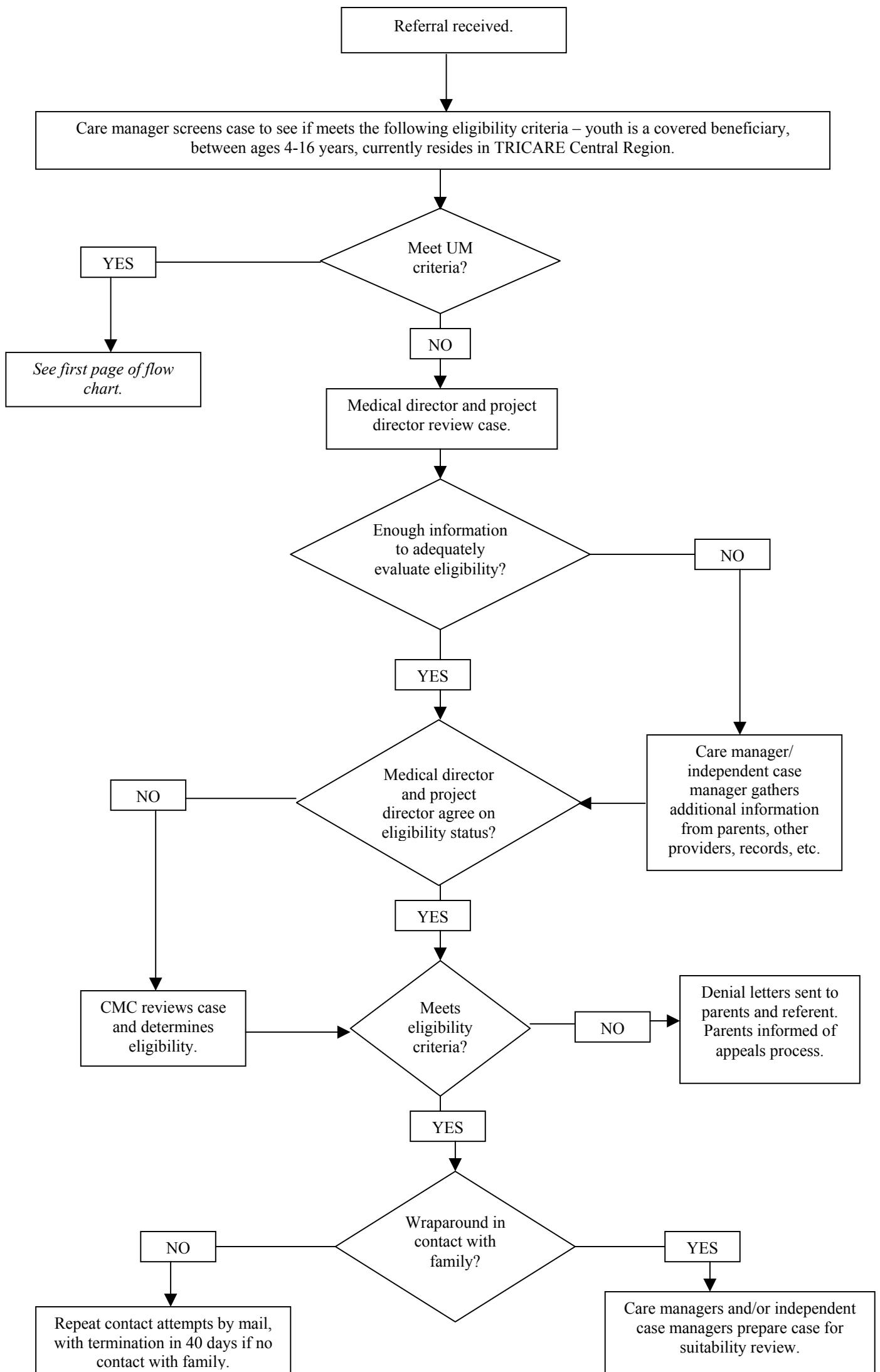
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## Phase 2: Eligibility Review

Eligibility Review is a complex multi-stage process with multiple key decision points that has evolved over the course of the program. Multiple individuals contribute to the eligibility review and their duties may vary on a case-by-case basis. As a result, it is difficult to describe the “usual” process that result in the outputs for this phase of the program. The following flow chart attempts to describe key program activities, the key actors, and the key decision points, which determines if a referral will proceed to the suitability review.





## **Appendix J: The Relationship Between HCSR Services Paid and Negotiated Case Rates**

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From the N=222 children who were referred to Wraparound services, “there were 180 project participants considered in Merit Behavioral Care Corporation/Magellan Health Services funding for the demonstration project. For each of these participants, their status as Type II or I was determined at the time of enrollment in the project. The amounts of \$20,451/\$9,537 reflect the average baseline measures (for Type I and Type II respectively) calculated based on the individual participants, their Type classification and the number of months in the project.” “Type I cases were patients who enrolled in the demonstration project prior to an RTC admission and included historical RTC costs. Type II cases were patients who enrolled in the demonstration project after the RTC discharge. Costs for Type II cases did not include their first RTC stay.” (Rowe, T.L., VP Finance Merit/Magellan, personal communication, September 26, 2001).

Figure 93 shows the actual HCSR reported total cost per child (N=176) and the corresponding Magellan rate per Type I/Type II status. In 77 percent of Type I children, the HCSR reported cost was lower than the negotiated rate; for the remaining 23 percent of children the HCSR was up to five times the negotiated rate. In 72 percent of children classified as Type II, the HCSR reported cost was higher than the negotiated rate.

**Figure 93. HCSR and Magellan Cost Per Treated Child**

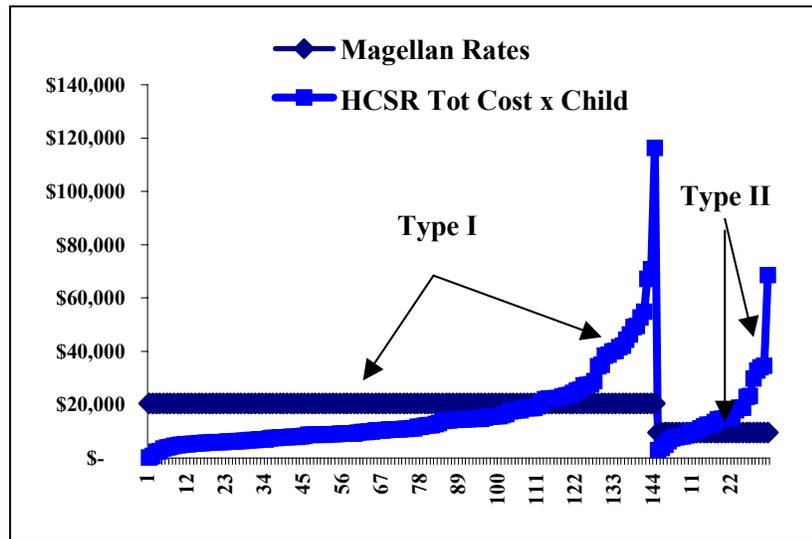


Figure 94 shows that the HCSR and Magellan total and average cost per status type. At the mean, Magellan rates are higher than HCSR. Results from an analysis of whether cost was equal or not between these two sources are reported below.

**Figure 94. HCSR and Magellan Cost for Type I and II**

	Total Cost		Cost x Child	
	HCSR	Magellan	HCSR	Magellan
Type I (N=144 children)	\$2,353,396	\$2,944,944	\$ 16,343	\$ 20,451
Type II (N= 32 children)	\$ 526,455	\$ 305,184	\$ 16,452	\$ 9,537
Total	\$2,879,851	\$3,250,128	\$ 16,363	\$ 18,467
Difference (Magellan – HCSR)		\$ 370,277		\$ 2,104

Using a two-sample Wilcoxon test, which is appropriate considering the largely skewed HCSR cost distribution, the HCSR and Magellan rates are different ( $p=0.0001$ ), on average, the total cost per child in HCSR is \$2,104 lower than the Magellan rates. However, Magellan cost estimates included pharmacy costs, which are not represented in the HCSR data. When we correct with this using the Magellan estimate of pharmacy costs (\$150 per participant per month, over an average of 13.8 months per participant) we find \$372,600 in anticipated pharmacy costs which were included in the Magellan costs, but are not represented in the HCSR. With an adjustment for this expected cost, the difference between Magellan and HCSR becomes negligible and statistically equal to zero.