The Maryland Child and Adolescent Innovations Institute and Mental Health Institute, University of Maryland, Baltimore School of Medicine

The Maryland Care Management Model: Care Coordination using high-fidelity Wraparound to support the strengths and needs of youth with complex needs and their families

September 2008

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Background

Youth with complex needs and their families typically are involved with multiple providers and systems, or are at very high risk for such involvement. No one provider or system can respond comprehensively to the constellation of needs of these youth and families. As a consequence, youth and families end up with multiple plans of care and multiple care coordinators, a situation that is confusing and inefficient for all concerned. Over the past decade, new technologies have emerged in children's services that create one "locus of accountability" for youth and families involved in multiple systems. These technologies, which support the organization, management, delivery and financing of services and supports across multiple providers and systems, are implemented through a Care Management Entity (CME) structure.

A CME is responsible for developing and implementing comprehensive individualized plans of care (POC) for each participating youth and his or her family. These plans are driven by the strengths and needs of the individual youth and family rather than by the boundaries of discrete programs, agencies or funding systems. The Wraparound model is used to implement the care coordination process provided by the CME, with fidelity to the Wraparound principles and its practice model evaluated by a neutral party. (For a brief description of the Wraparound process and evidence from controlled research studies, see Appendix A). In addition to implementing a Wraparound approach to ensure the development and oversight of an individualized plan of care that governs all providers and systems involved with the youth and his/her family, the CME also provides the youth and family with a dedicated care coordinator (i.e. a full-time care coordinator with a small caseload).

The function of the CME is to design and implement plans of care to achieve defined outcomes for youth and their families that make sense both to the youth and family and to the systems in which the youth is involved. A CME is not a traditional provider and its business is not intake and referral to existing services; rather, the CME assumes the responsibility for the development and management of services to meet the POC objectives for all dimensions of individual and community life, with accountability for achieving outcomes across life domains.

The CME ensures accountability to an individual and his or her family and plan of care through individualized planning, utilization management, and coordination of services, resources and supports, with objective outcome measures mutually determined across multiple providers and systems in partnership with the youth and family. The CME is embedded into the community where the youth and family reside, providing more effective linkages to the natural and informal resources and supports that are available to participants with multi-system and complex needs. The CME is committed to cultural and linguistic competence and strives to reflect the diversity of the communities and populations it serves. The CME works closely with advocacy organizations to ensure that youth and families have access, voice and ownership in the development and implementation of their plans of care.

Youth with complex needs are at high risk for out-of-home placements. The CME approach typically is used by States and communities to organize a community-based alternative to divert youth from out-of-home placements and reduce lengths of stay. The CME approach is being used for various populations of youth and families, including those in or at-risk for residential treatment, detention, group home, and multiple foster home placements, among others. These are populations whose complex needs are not easily addressed through a single system and whose need for intensive care coordination are not readily met through the usual case management services and supports available through public child-family serving agencies.

The Maryland Children's Cabinet has focused its initial resources as they relate to CMEs on the population of youth with Serious Emotional Disturbances who are at-risk for entering a Residential Treatment Center (RTC) level of care. Beginning Fiscal Year 2009, many of these children and youth will be served under a 1915(c) RTC Medicaid Waiver, which will allow them to receive expanded services and supports under the Public Mental Health System and intensive care coordination through a CME approach. The CME infrastructure that is created for this population of youth and families can be utilized as well for other populations with complex

needs. The CMEs in Maryland, in partnership with the local child-family serving agencies, governments, local management boards, and families, have been able to expand the population served to include gang-involved youth and youth at-risk for placement in a group home, treatment foster care home, or an independent living placement.

Key Components of a Care Management Entity

Systems of care values and principles are at the heart of the CME and are evidenced throughout all of its work with youth, families, agencies, and the community. Below are highlights of many of the key components and functions of a CME*. In choosing to contract with a CME, an agency would not be compelled to utilize all functions equally but could emphasize those components that would be most complementary to the services and supports already provided by the agency or that are already available to the target population*.

Supports Provided to Youth and Families by a CME

Child Family Team (CFT) Facilitation using Wraparound Model: The CME convenes and facilitates a CFT that includes the youth, family, involved lead agency representatives, formal support providers, and informal or natural supports, such as relatives or community organization representatives. Teams meet at least monthly to assess how the POC for the youth is meeting the needs of both the youth and family. The CME's data system supports the team, including system partners, to track the services and supports being provided, at what cost, and to what effect.

Care Coordination with assessment tools: In addition to convening and facilitating the CFT, care coordinators working with small caseloads are employed (or contracted) by the CME to facilitate the implementation of the individualized Plan of Care (POC), including coordinating with members of the CFT, connecting the youth and family with service providers, and supporting the family with the use of flexible funds. The Care Coordinator also uses assessment tools that are completed with the CFT to assess functioning and assist in the design of the POC to ensure that it is both strengths-based and needs-driven and draws on natural supports as well as formal services.

Care Monitoring and Review: One of the collective functions of the care coordinator, CFT and CME is to continuously review the care being provided to youth and their families to ensure that it is building on strengths, meeting identified needs, and supporting the individualized goals in the POC. If a particular strategy or service provider is not having the intended effect or meeting expectations, the CFT will revisit the issue as needed to modify the strategy or identify a new service provider until the strategy begins to have its intended impact.

Peer Support Partners are available through the CME to both the youth and his/her caregiver(s). Such Partners have either experience receiving intensive services from multiple agencies themselves or have been the direct caregiver of a youth served by multiple systems. Peer Support Partners use their own past experience to guide youth and family decisions, provide information from a trusted source, provide social support, and act as role models of success in overcoming mental health challenges. In Maryland, CMEs contract with family organizations that employ Peer Support Partners who partner with care coordinators to support the family and youth.

System-Level Functions of a CME

Information Management & Web-based Information System
A Care Management Entity utilizes an information system (IS) capable of maintaining an individual family record as well as linking financial costs with services authorized. The IS is web-based and has ability to set viewing and editing rights at different levels. The CME IS platform can link with other IS platforms for the purposes of data dumping and report generation.

Provider Network Recruitment and Management
A Provider Network is recruited and managed by the CME and includes both formal and informal providers of supports and services to meet the individualized needs of youth and families. In addition to building a Network, the CME may contract for and purchase services identified by the Child and Family Team to support the

individualized plan of care. Under the 1915(c) RTC Waiver, the CME plays a significant role in recruiting and enrolling providers to become Medicaid providers. The CME also could be used for organizing and managing a network to support child and family teams operating within given child-serving systems, for example, to support Family Group Conferencing teams in the child welfare system.

Utilization Review
A CME can provide utilization review and/or management both for the population of youth for which it has financial responsibility and for a larger population identified by the state, often one that consumes expensive services. Utilization review involves the identification of the services being used by youth, their cost, and the effectiveness of the services in meeting desired client outcomes. Such reviews guide decisions about what services will best serve the needs of the youth at the least cost. Utilization management closely manages access to certain restrictive and/or expensive services to minimize use of such services when less restrictive services are more appropriate and ensure that they are only used when specific criteria are met. Utilization management also pays close attention to "outliers", that is children that are using more or less services than what one typically would expect and providers that are providing more or less services that expected for the population being served.

The CME performs utilization review as part of its normal work for its specific populations of focus. The CME also may provide a utilization review function upon request from a local or state agency, analyzing data, trends, and demographic variables to identify the types of services being utilized, at what cost, and with what degree of effectiveness. Utilization management typically occurs when the CME is put financially at-risk for a population of youth; the CME must serve the youth within a fixed amount of funds and, therefore, is monitoring the type and volume of services a child is receiving and their effect and is closely monitoring more expensive services to ensure that they are only used when necessary and appropriate. A CME's undertaking utilization management as a result of being financially at risk (usually through being paid a case rate for the population served) is a typical scenario. However, the CME may also be paid an administrative fee to provide a utilization management function for the State or a given agency to ensure that the appropriate type and volume of services is provided to a given population or specifically to restrict access to particularly expensive services to only those who meet prescribed criteria. (This latter function is done in Maryland by the Administrative Services Organization for the Public Mental Health System; all youth who wish to access a residential treatment center must meet medical necessity criteria for that level of care and gain access to RTCs through the ASO.)

Utilization management of youth with complex needs and their families is best accomplished through a CME approach that embeds UM functions within the Wraparound approach. Specifically, child and family teams pay attention to both quality and cost concerns and outcomes and ensure the appropriate type and volume of services for every individual child and family served. The CME ensures that, across the populations it serves, children are indeed receiving the appropriate type and volume of services through the child and family team process and that outcomes are being met. This is a different orientation than a typical ASO in the managed care world that tends not to operate within a Wraparound context and is not accountable for outcomes in the same way as the CME. In some States, the CME initially may be paid an administrative fee to perform UM functions and then gradually assumes financial risk responsibility for given populations through a case rate arrangement. Other States begin CME implementation within a case rate (i.e., financial risk) structure.

Financing Model
Ideally, a CME is financed by a case rate and is, therefore, at financial risk. However, Maryland has not been prepared to fully implement an at-risk model. For the purposes of the 1915(c) RTC Waiver, the financing model is fee-for-service, with the CME being funded through the Medicaid Administrative Claim while Medicaid eligible services are purchased from vendors on a fee-for-service basis. Financial risk under the Waiver is held by the Department of Health and Mental Hygiene, which is responsible for ensuring cost neutrality to the federal government under the Waiver. There have been some instances in Maryland, however, where the CMEs have been supported by a case rate for a different population, for example, youth diverted from detention, which has allowed the CME to have added flexibility in its service delivery model.

Evaluation, Outcomes and Continuous Quality Improvement
The CME uses an array of data obtained from its IS, feedback from Child Family Teams, surveys, and assessment tools to monitor outcomes and assess the impact of the model and service array on the well-being

of youth and families. The CME uses these data to modify its provider network, identify gaps in training and experience, and improve practice. The CME also uses the data to ensure responsibility and accountability to State purchasers (i.e. those State agencies investing in the CME model) for a particular population.

Using CMEs Flexibly within a State or Large Jurisdiction

It is important to note that CMEs may not be the method for serving all youth with complex needs. Youth with the most complex needs and their families could benefit from the full array of services and supports offered by a CME, while other populations could be served with a Child Family Team (CFT) model using Wraparound inside of a public child-family serving agency and benefit from the resource development and utilization review/management functions available through the CME. For example, as described earlier, the CME could be used to support Family Group Conferencing teams in child welfare to access a broad, flexible array of services and supports through the CME's organized provider network, and/or the CME could be used to manage utilization of services.

Evidence Base for Wraparound and Care Management

Since the initiation of the National Wraparound Initiative, there has been a clearer understanding nationally of what is meant by high fidelity Wraparound. Fidelity tools have been developed, and there is a growing national literature base regarding the effectiveness of Wraparound. (See Appendix A for a review of controlled studies.) As a result, Wraparound has become a nationally recognized promising practice that has been included in two Surgeon General's reports (1999, 2000), mandated for use in federal grant programs (such as the SAMHSA systems of care program), and described as having a promising body of evidence in the 2003 Report from the President's New Freedom Commission on Mental Health (Suter & Bruns, 2008). Wraparound has been cited as an evidence-based practice by a number of states (e.g., Oregon Department of Health Services, 2008) and policy centers (e.g., Center on Education, Disability, and Juvenile Justice). Additionally, the California Evidence-Based Clearinghouse for Child Welfare cited Wraparound as a promising practice, with particular relevance in child welfare with regard to permanency.

The construct in which Wraparound is embedded, however, varies considerably across the country. Therefore, it becomes difficult to directly compare the outcomes across CMEs in various cities, counties and states. The information below highlights some of the outcomes data for sites using Wraparound within a CME structure in Maryland, with an identification of the population served and the service delivery structure in which Wraparound was provided. To the extent possible, the data below are for the child welfare population; additional data are available for juvenile justice and mental health populations. All of the projects described below have a per child cost that is either equal to or, more often, less than the cost that would have been incurred if the child had been served in a traditional out-of-home placement.

Maryland Choices: Baltimore City & Montgomery County

There are CMEs operating in Maryland in four jurisdictions; Maryland Choices operates the CME in Baltimore City, Montgomery County, and St. Mary's County, and New Transitions operates the CME in Wicomico County. The CMEs in Baltimore City and Montgomery County were the first two in Maryland and, therefore, have the most data accumulated to-date. Therefore, the data below are just for those two CMEs with only a snapshot of some of the pots of funding for two populations; similar successes are being achieved in St. Mary's County and in Wicomico County, using the same CME model.

Baltimore City & Montgomery County CME Data: FY2008 (Source: Maryland Choices)

Jurisdiction	Baltimore City		Montgomery County	
Population	RTC	Group Home Diversion	RTC	Group Home Diversion
Funding Source	*Wrap Pilot*	*DJS-9*	*Wrap Pilot*	*DJS-9*
Number of youth served	47	30	69	30
Percentage of youth had an increase in overall functioning as measured by the CANS 12 months after enrollment.	83%	92%	91%	N/A
Percentage of families served with an increase in overall functioning (as measured by the CANS) at 12 months after implementation of plan of care	75%	100%	94%	N/A
Percentage of youth who remained in a setting with low restrictiveness or moved to a lower level of restrictiveness 12 after implementation of plan of care	93%	100%	97%	86%
% of youth who attended school at least 80% of the time 12 months after implementation of plan of care	82%	40%	71%	90%

In FY07, the Baltimore City CME had entered into contracts with over 50 providers and the Montgomery County CME had entered into contracts with over 70 providers. Since FY07, the relationships with community providers have continued to grow, with the community resource manager at each site playing an important role in identifying quality providers and engaging them to work with a complex population of youth and their families.

Additionally, each CME measures the number of informal and natural supports on the CFT at the start of service provision as compared to discharge. In FY08, in Wicomico County, there was an average of 1 informal support per family at 90 days after implementation of the plan of care but an average of 3 informal supports at discharge. This highlights the emphasis that is placed by the CMEs and the community on connecting with or developing natural and informal supports for each family to assist them in the transition out of Care Management and Wraparound.

Outcomes from Other Prominent CME Models Nationally

Marion County, IN: The Dawn Project
The Dawn Project is run by Choices, Inc., the same parent organization that operates the CME in three Maryland jurisdictions. The business structure for the Dawn Project is essentially the same as Maryland's CME model, making it one of the most comparable.

In calendar year 2007, the Dawn Project served 239 youth from the Marion County Department of Child Services and 183 youth from the Juvenile Division of the Marion Superior Court. The majority of youth served in the Dawn Project are involved with child welfare. The Dawn Project uses four case rate tiers, serving youth with the most complex needs in the RTC and Intensive Case Rate Tiers, and other youth in the Early Intervention and Prevention Case Rate Tiers. The average age of the youth was higher, the number of strengths identified using the CANS was lower, and the number of needs identified using the CANS was greater in the RTC and intensive tiers, which is supported by a higher case rate than the Early Intervention/Prevention Tier.

Below are some of the key outcomes for the youth served from the Marion County Department of Child Services:

- 86% showed improvement in their living situation;
- 76% have achieved permanency or had a placement consistent with the permanency plan;
- 66% previously in group homes, residential treatment centers, hospitals or juvenile correction facilities are now in home-like placements;

- 75% have developed strengths in educational areas;
- 74% of youth have shown significant improvement in school behavior and achievement; and
- 94% of youth had needs met in their adjustment to trauma.

In addition, the Dawn Project contracts with more than 200 providers, including natural supports, over half of whom provide services exclusively to Dawn (Choices, Inc., 2008).

Wraparound Milwaukee

Wraparound Milwaukee is a behavioral health population carve-out that serves youth with serious emotional disorders and who are identified by the child welfare or juvenile justice system as being at-risk for residential or correctional placement. Various state and county agencies fund Wraparound Milwaukee, including child welfare, juvenile probation services, and Medicaid, creating a pooled fund. The fund supports the administration of Wraparound Milwaukee, which is a CME operating within county government, and supports an extensive provider network and dedicated care coordinators. Wraparound Milwaukee is a special managed care entity operating under 1915(a) of the Social Security Act (Stroul, Pires, Armstrong, McCarthy, Pizzigati, & Wood, 2008).

Wraparound Milwaukee has had significant impact on the youth served and their families. For example,

- The child welfare placement disruption rate decreased from 65% to 30%.
- School attendance for child welfare-involved youth improved from 71% of days attended to 86% of days attended.
- The average daily RTC population was reduced from 375 to 50.

Central Nebraska (Region 3)

Central Nebraska has been implementing systems of care initiatives since 1989, under the Child and Adolescent Services System Program (CASSP). There are several different programs currently operating in Central Nebraska to serve children and youth with differing needs. One of these programs is Integrated Care Coordination Unit (ICCU), which is intensive care management based on Wraparound and family-centered practice for children and youth who are in state custody and have complex behavioral health needs and multiple agency involvement (Stroul et al, 2008). The ICCU functions as a CME and is supported by a case rate financed from child welfare, behavioral health and juvenile justice dollars.

In 2005, Central Nebraska reported the following outcomes for its Integrated Care Coordination Unit:

- The percentage of children in group or residential care went from 35.8% at enrollment to 5.4% at disenrollment;
- The percentage of children in psychiatric hospitals went from 2.3% at enrollment to 0% at disenrollment;
- The percentage of children living in the community went from 41.4% at enrollment to 87.1% at disenrollment;
- There were dramatic improvements in CAFAS scores, equal to those found for a group of youth enrolled in Multisystemic Therapy (MST) in the same system of care (see Stambaugh et al., 2007); and
- An overall cost savings estimated at $900,000. (Baxter, 2005).

Other relevant Wraparound Data

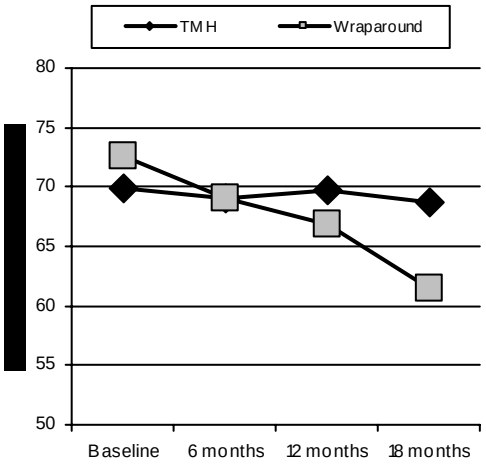
Various studies have been conducted on the effectiveness of Wraparound with different populations. The data below are for Wraparound initiatives that are not necessarily provided within a systems construct of a CME or similar model.

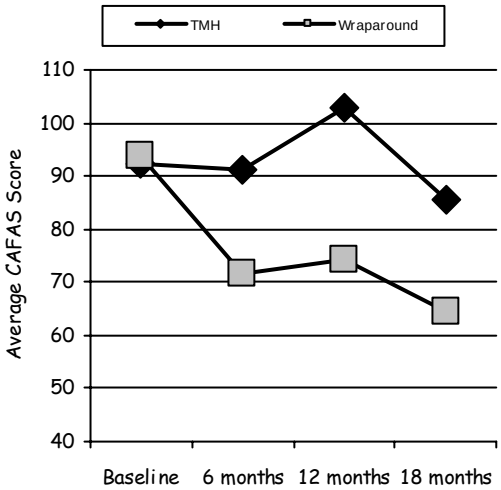
Nevada

An 18-month study of N=33 youth in child welfare custody and receiving Wraparound, the majority of whom had been in custody for over three years, found that, compared to N=34 youth receiving treatment as usual:

- Approximately 82% of youth receiving Wraparound moved to less restrictive environments, compared with approximately 32% in the comparison group.
- Family members were identified to provide care for 11 of the 33 youth in the Wraparound group compared with only six in the comparison group. Prior to receiving Wraparound, most of the youth in the Wraparound group had a permanency plan of long-term foster care placement.

- Mean Child Behavioral Checklist (CBCL) and Child and Adolescent Functional Assessment Scale (CAFAS) scores for youth in Wraparound decreased significantly across six-month intervals (6, 12, 18 months) in comparison with the traditional services group.



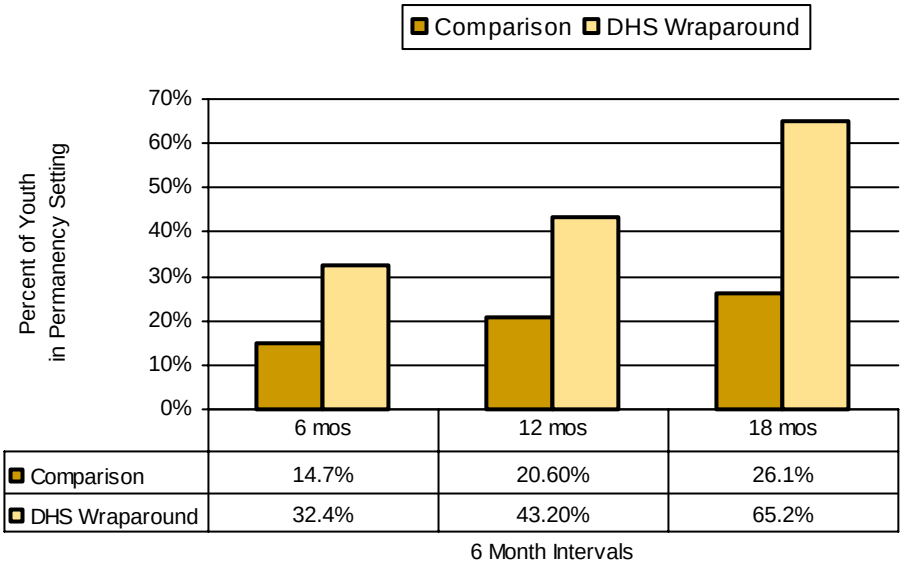


(Bruns, Rast, Walker, Peterson, & Bosworth, 2006; Rast, Bruns, Brown, Peterson, & Mears, 2007 in submission; Rast, VanDenBerg, & Bruns, 2008).

Oklahoma

Preliminary results of a recent study in Oklahoma of 108 children in the child welfare system who were or expected to be high users of behavioral health services have been promising. Youth identified by child welfare were randomly assigned by research staff to one of three groups: (1) Wraparound facilitation conducted by a child welfare caseworker; (2) Wraparound conducted by a facilitator employed by a local mental health center; or, (3) Services as usual. Researchers found that, when compared to the "services as usual" group, youth receiving Wraparound experienced:

- Fewer school and residential placement disruptions;
- Improved behavioral and functional outcomes; and
- More days overall in a permanency setting (Rast, Vetter, & Poplin, 2008).



Conclusion

Care management provided through a CME approach using high-fidelity Wraparound is a promising approach to achieving improved outcomes for many of Maryland's most complex youth and their families. Early data from Maryland's CMEs signify that this model has been effective for the target population, particularly those who are at-risk of entering an RTC. Similarly, national data indicate that the Wraparound model, particularly when embedded in a CME structure, can achieve significant outcomes and improve well-being for a variety of populations of youth and families with multisystem involvement or at very high risk for such involvement, more frequently serving and stabilizing youth and their families in their homes and communities. The consistency of the principles of high-fidelity Wraparound, combined with the many different functionalities of a CME, offer consider potential and opportunity for Maryland's child-family serving agencies to improve permanency and well-being for youth with complex needs and their families.

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Appendix A

Overview of the Wraparound Process

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November 2006

The Wraparound Process is an intensive, individualized care management process for youths with serious or complex needs. Wraparound was initially developed in the 1980s as a means for maintaining youth with the most serious emotional and behavioral problems in their home and community. In recent years, however, it has been applied within child welfare, juvenile justice, and in schools as a way to improve school outcomes for students with serious emotional disturbance, as well as maintain them in normalized school settings. Wraparound is increasingly being applied in school settings in conjunction with Positive Behavioral Supports (PBS), as a means of supporting students with the most serious and complex behavioral needs.

During the Wraparound process, a team of individuals who are relevant to the well-being of the child or youth (e.g., family members, other natural supports, service providers, and agency representatives) collaboratively develop an individualized plan of care, implement this plan, and evaluate success over time. The Wraparound plan typically includes formal services and interventions, together with community services and interpersonal support and assistance provided by friends, kin, and other people drawn from the family's social networks. The team convenes frequently to measure the plan's components against relevant indictors of success. Plan components and strategies are revised when outcomes are not being achieved.

The process of engaging the family, convening the team, developing the plan, implementing the plan, and transitioning the youth out of formal Wraparound is typically facilitated by a trained care manager or "Wraparound facilitator," sometimes with the assistance of a family support worker. The Wraparound process, and the plan itself, is designed to be culturally competent, strengths based, and organized around family members' own perceptions of needs, goals, and likelihood of success of specific strategies.

Wraparound has been implemented nationally for over 20 years and presented as a promising practice in many publications. However, specification and consistent implementation of the model has occurred only in the past few years. As recently specified, Wraparound is conceived of a four phase process: **Engagement and team preparation, Initial plan development, plan implementation**, and **transition**. The full description of the activities that typically take place in each of these phases can be found in "Phases and Activities of the Wraparound Process," a document available on the website of the National Wraparound Initiative at www.rtc.pdx.edu/nwi.

2. Implementation Essentials

Wraparound is intended to ensure that youth with complex needs (and multiple agency involvement) benefit from a coordinated care planning process that produces a single plan of care that cuts across all agencies and providers. Wraparound plans and Wraparound teams require access to flexible resources and a well-developed array of services and supports in the community. As a result, Wraparound implementation requires that the child-serving system is supportive of Wraparound. Some of the key types of community and system supports include:

- **Community partnership**: Key stakeholder groups, including agencies, providers, and representatives of youths and families have joined together in a collaborative effort to plan and

implement Wraparound.

- **Collaborative action:** Stakeholders involved in the Wraparound effort take concrete steps to translate the Wraparound philosophy into concrete policies, practices and achievements.
- **Fiscal Policies:** The community has developed fiscal strategies to support the Wraparound effort and to better meet the needs of children and youth participating in the Wraparound effort
- **Access to needed supports and services:** The community has developed mechanisms for ensuring access to the services and supports that Wraparound teams need to fully implement their plans.
- **Human Resource Development and Support:** The system supports Wraparound staff and partner agency staff to work in a manner that allows full implementation of the Wraparound model.
- **Accountability.** The community has implemented mechanisms to monitor Wraparound fidelity, service quality, and outcomes, and to oversee the quality and development of the overall Wraparound effort.

In addition to system supports, the Wraparound process requires skilled facilitators and family support partners who have the right working conditions to do their jobs. As a result, the lead agency responsible for implementing the Wraparound process for families must support implementation in several key ways, including maintaining adequately low caseload sizes; ensuring that primary staff receive comprehensive training and skill development; supporting Wraparound team efforts to get necessary members to attend meetings and participate collaboratively; and making timely decisions regarding funding for strategies developed by teams to meet families' unique needs.

3. Program Evaluation

The Wraparound process has been implemented widely across the United States and internationally because of the documentation of its successful use in several communities, its alignment with the value base for systems of care, and its resonance with families and family advocates. However, the formal Wraparound research base has been slow to develop because of several reasons: (1) its status as a care management *process* rather than a focal treatment for a specific disorder; (2) its grassroots development rather than development by a single research team; and (3) its individualized nature, in that the identified needs and specific strategies for each family participating in Wraparound should be unique.

At the same time, the research base on Wraparound continues to expand and evolve:

- To date, positive results have been found from three published experimental studies, six published quasi-experimental studies, and numerous pre- post longitudinal studies.
- The Wraparound process has been cited as a promising practice in Surgeon General's reports on both youth violence and mental health.
- Since the Wraparound practice model has been more fully specified, four random assignment control studies have been begun in four different locations, all with a consistent practice model and training and coaching model. Fidelity measures aligned with the Wraparound model described above are also now available and in use in all the above studies.

A summary of published controlled outcomes studies of Wraparound is provided below.

4. Resources

The Wraparound process is not proprietary. The website of the National Wraparound Initiative (www.rtc.pdx.edu/nwi) includes a description of the practice model, as well as many implementation

resources compiled from trainers, technical assistance providers, and program sites nationally. The NWI website also includes a list of consultants and trainers that communities and organizations may wish to access. More comprehensive examples of how Wraparound has been implemented in schools can be found at the Illinois Positive Behavioral Supports network website (http://www.pbisillinois.org), and in Eber (2003). Information about implementation and fidelity measures for Wraparound can be found at the Wraparound Evaluation and Research Team's website at http://depts.washington.edu/wrapeval.

Training and Technical Assistance. Many communities and programs have been trained and coached by experts on the Wraparound process to successfully implement the Wraparound process. Typical curricula include initial 4 day training sessions for staff (e.g., facilitators and parent partners) followed by shadowing of experienced staff, and in-vivo coaching. Supervisors also receive a series of human resource development activities so they can collect data about staff performance and support staff over the long term via intensive group and individual supervision, as well as ongoing coaching.

SUMMARY OF PUBLISHED CONTROLLED RESEARCH ON WRAPAROUND

The research selected for inclusion in this Table include the eight controlled (experimental and quasi-experimental) outcomes research studies published in peer-reviewed journals relevant to the Wraparound process. Studies are organized by the population studied. These include two studies of youths served through the child welfare system, two studies of youths served because of their involvement in (or risk of involvement in) juvenile justice, and four studies of youths served because of their intensive mental health needs.

Study	**Citations**	**Outcome(s)**
Randomized control study (18 months) of youth in **child welfare** custody in Florida: 54 in Wraparound vs. 78 in standard practice foster care.	Clark, Lee, Prange, & McDonald, 1996; Clark et al., 1998.	Significantly fewer placement changes for youths in the Wraparound program, fewer days on runaway, fewer days incarcerated (for subset of incarcerated youths), and older youths were significantly more likely to be in a permanency plan at follow-up. No group differences were found on rate of placement changes, days absent, or days suspended. No differences on internalizing problems, but boys in Wraparound showed significantly greater improvement on externalizing problems than the comparison group. Taken together, the findings provided moderate evidence for better outcomes for the Wraparound program; however, differences appear somewhat limited to boys and externalizing problems.

Matched comparison study (18 months) of youth in **child welfare** custody in Nevada: 33 in Wraparound vs. 32 receiving MH services as usual	Bruns, Rast, Walker, Bosworth, & Peterson, 2006; Rast, Bruns, Brown, Peterson, & Mears (in submission)	After 18 months, 27 of the 33 youth (approximately 82%) who received Wraparound moved to less restrictive environments, compared to only 12 of the 32 comparison group youth (approximately 38%), and family members were identified to provide care for 11 of the 33 youth in the Wraparound group compared to only six in the comparison group. Mean CAFAS scores for youth in Wraparound decreased significantly across all waves of data collection (6, 12, 18 months) in comparison to the traditional services group. More positive outcomes were also found for the Wraparound cohort on school attendance, school disciplinary actions, and grade point averages. No significant differences were found in favor of the comparison group.
Randomized control study (18 months) of "at risk" and **juvenile justice** involved (adjudicated) youth in Ohio: 73 in Wraparound vs. 68 in conventional services	Carney & Buttell, 2003	Study supported the hypothesis that youth who received Wraparound services were less likely to engage in subsequent at-risk and delinquent behavior. The youth who received Wraparound services did not miss school unexcused, get expelled or suspended from school, run away from home, or get picked up by the police as frequently as the youth who received the juvenile court conventional services. There were, however, no significant differences, in formal criminal offenses.
Matched comparison study (>2 years) of youth involved in **juvenile justice** and receiving MH services: 110 youth in Wraparound vs. 98 in conventional MH services	Pullmann, Kerbs, Koroloff, Veach-White, Gaylor, & Sieler, 2006	Youths in the comparison group were three times more likely to commit a felony offense than youths in the Wraparound group. Among youth in the Wraparound program, 72% served detention "at some point in the 790 day post identification window" (p. 388), while all youth in the comparison group served detention. And of youth in the Connections program who did serve detention, they did so significantly less often than their peers. Connections youth also took three times longer to recidivate than those in the comparison group. According to the authors, a previous study by Pullman and colleagues showed "significant improvement on standardized measures of behavioral and emotional problems, increases in behavioral and emotional strengths, and improved functioning at home at school, and in the community" (p. 388) among Connections youth.
Randomized control study (12 months) of youths referred to out-of-home placements for serious **mental health** problems in New York State: 27 to family centered intensive case management (Wraparound) vs. 15 to treatment foster care.	Evans, Armstrong, & Kuppinger, 1996; Evans, Armstrong, Kuppinger, Huz, & McNulty,1998	Significant group differences were found in favor of the case management/ Wraparound program for behavioral and mood functioning. No differences were found, however, with respect to behavior problems (internalizing and externalizing), family cohesiveness, or self-esteem. No differences found in favor of the TFC group. Overall, small sample size plus loss of data on many of the outcome measures resulted in the study having very low power to detect differences between groups.

Quasi-experimental (6 months) study in Department of Defense demonstration site of youths with serious **mental health** issues: 71 in Wraparound group vs. 40 in comparison group (study refusers/ineligible youths).	Bickman, Smith, Lambert, & Andrade, 2003	Findings included higher utilization of "Wraparound services" (e.g., case management, in-home supports, and nontraditional services) for the demonstration group, higher costs for the demonstration group (primarily due to this group remaining in treatment longer), and no consistent differences between the groups on outcome measures (e.g., behavior, functioning, caregiver strain, perceived social support, family environment). Limitations of this study include the short time span (6 months) and whether the demonstration project truly followed the Wraparound process. Authors stated the "wrap" condition had access to informal services and flexible funding, but authors did not assess "wrapness" and stated that, "there is no evidence that the content or the quality of the services were different for the Wraparound children." (p.151)
Quasi-experimental (24 months) study of youths with serious **mental health** issues in urban Baltimore: 45 returned or diverted from residential care to Wraparound vs. 24 comparison.	Hyde, Burchard, & Woodworth, 1996	Primary outcome was a single rating that combined several indicators: restrictiveness of youth living situation, school attendance, job/job training attendance, and serious problem behaviors. Youths received ratings of "good" if they were living in regular community placements, attending school and/or working for the majority of the week, and had fewer than three days of serious behavior problems during the course of previous month. At 2-year follow-up, 47% of the Wraparound groups received a rating of good, compared to 8% of youths in traditional MH services. Limitations of the study include study attrition and group non-equivalence at baseline.
Quasi-experimental (multiple-baseline case study) of four youths referred to Wraparound because of serious **mental health** issues in rural Michigan.	Myaard, Crawford, Jackson, & Alessi (2000).	The multiple baseline case study design was used to evaluate the impact of Wraparound by assessing whether outcome change occurred with (and only with) the introduction of Wraparound at different points in time. The authors tracked occurrence of five behaviors (compliance, peer interactions, physical aggression, alcohol and drug use, and extreme verbal abuse) for each of the youths. Participants began receiving Wraparound after 12, 15, 19, and 22 weeks. For all four participants, on all five behaviors, dramatic improvements occurred immediately following the introduction of Wraparound.

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