MULTISYSTEMIC THERAPY
Maryland State
FY11 Annual Report

Prepared by The Institute for Innovation and Implementation
University of Maryland School of Social Work

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FY11 ANNUAL REPORT

Executive Summary

Multisystemic Therapy (MST) is one of five prioritized evidence-based practices chosen by Maryland's Children's Cabinet for Statewide implementation in an effort to reduce costly out-of-home placements and provide empirically supported community-based practices that address key outcomes (e.g., long-term rates of re-arrest, school attendance, etc.). Maryland's MST program data for fiscal year (FY) 2011 indicate that a diverse sample of 408 youth and families received MST, and that these services were generally adherent to the MST model. The majority of youth had positive outcomes at discharge from MST, and only a small percentage of youth who received services in past fiscal years were ultimately committed to the Maryland Department of Juvenile Services (DJS) because of a new referral after discharge from MST.

Who did MST serve in Maryland and how were services utilized?

- In FY11, MST was funded in **8 jurisdictions** throughout the State.
- The number of youth served by MST teams in Maryland increased from 373 in FY10 to **408** in FY11—an increase of nearly 10% in one year.
- The median age of youth served was **16 years old**, and the majority of youth served were **African-American (80%)** and **male (81%).**
- The majority of youth completed MST treatment (81%).

Fidelity (Adherence) to MST: Were MST services adequately provided in Maryland?

- **74%** of youth and families were treated by a therapist with an average adherence score above the .61 target; this percentage is higher than the national average of approximately 70%.

How do youth fare at and after discharge from MST?

- Of youth who were discharged from MST in FY11, at the time of discharge:
  - **85%** were living at home; **78%** were in school/working; and **79%** had no new arrests.
- Among youth who were discharged from MST in FY10, as of one year after discharge:
  - **40%** did not have a new arrest or referral to DJS;
  - **87%** had not been committed to DJS or incarcerated;
  - **76%** were not placed in a new residential placement with DJS; and
  - **Less than 5%** had new child welfare system involvement post discharge.
- Compared with demographically similar DJS youth who were discharged from group homes in FY10, MST youth (referred and funded by DJS) were slightly more likely to be arrested (58% vs. 65%), adjudicated delinquent/convicted (11% vs. 31%), and committed to DJS/incarcerated (7% vs. 15%) in the year following discharge. These findings should be assessed within the context of early program implementation; youth outcomes are expected to improve as MST implementation improves, over time.

Introduction

What is the Purpose of this Report?

The purpose of this report is to provide state and local stakeholders and vendors with a summary of Multisystemic Therapy (MST) utilization, fidelity, and outcomes across the state of Maryland in fiscal year (FY) 2011. MST is one of five prioritized Evidence-Based Practices (EBPs)[1] chosen by Maryland's Children's Cabinet for statewide implementation in an effort to reduce costly out-of-home placements and provide field-tested, community-based practices shown to address key youth outcomes (e.g., family functioning, school attendance, association with deviant peers, long-term rates of rearrest). Both short- and long-term effects of this Evidence-Based Practice (EBP) for high-risk, neglected, and/or delinquent adolescents are examined.

Child and family evidence-based practice implementation and evaluation in Maryland

Under contract with the Governor's Office for Children (GOC) on behalf of the Maryland Children's Cabinet, The Institute for Innovation and Implementation's research and evaluation team collects and analyzes data for the State in order to track a variety of EBPs being utilized throughout the State. Guided by the Children's Cabinet, the research and evaluation team collects data from local EBP providers, as well as from national purveyor databases (if available) and state agencies, to routinely report on EBP implementation, including: where services are available and at what capacity, how services are funded, how services are utilized, how well services are being delivered based on model requirements, and outcomes for youth following treatment discharge.

Definitions

What is an evidence-based practice?

An evidence-based practice refers to the integration of the best available research with clinical expertise in the context of youth and family characteristics, culture, and preferences. The effectiveness of an EBP to help children and families reach desirable outcomes is measured by three vital components (American Psychological Association [APA], 2002; APA Presidential Task Force on Evidence-Based Practice, 2006; U.S. Department of Health & Human Services, 1999):

1) Extent of scientific support of the intervention's effects, particularly from at least two rigorously designed studies;
2) Clinical opinion, observation, and consensus among recognized experts (for the target population); and
3) Degree of fit with the needs, context, culture, and values of families, communities, and neighborhoods.

*An **evidence-based practice** is the integration of the best available research with clinical expertise in the context of youth and family characteristics, culture, and preferences.*

[1] The prioritized EBPs chosen by Maryland's Children's Cabinet include Multisystemic Therapy, Functional Family Therapy, Brief Strategic Family Therapy, Multidimensional Treatment Foster Care, and Trauma-Focused Cognitive Behavioral Therapy.

What is Multisystemic Therapy?

MST is an intensive, family-based therapy program that targets high-risk youth between the ages of 12 and 17 and their families, including juvenile offenders at risk of incarceration and youth at risk of placement due to maltreatment. The goals of MST include providing an alternative to out-of-home placement, minimizing the length of stay in out-of-home placements, and reducing the risk of additional placements by improving youth and family functioning while maximizing community-based resources and supports. Strategies employed differ from conventional interventions in that MST therapists typically work with families in multiple sessions each week over a period of 4 to 6 months (Henggeler, 1999). Throughout the intervention, a therapist is available to the family 24 hours a day, seven days a week to provide additional support as needed. MST therapists are trained to utilize community supports, build skills, and strengthen the family system to cope with the multiple factors known to be related to poor outcomes for youth. Specific treatment techniques are integrated from empirically-supported therapies, including cognitive behavioral, behavioral, and family therapies. With the majority of MST treatment focused on parents/caregivers, the ultimate aim of MST is to provide frequent, intensive therapy in the family context to facilitate lasting positive changes in the home environment.

MST is an intensive, family-based therapy program that targets high-risk youth between the ages of 12 and 17 and their families.

Assessing MST Utilization and Outcomes

Data

The data reported in this document were drawn from multiple sources. The primary sources were MST vendors in Maryland, who routinely submit youth-level data from a basic demographic and utilization measure developed by The Institute for Innovation and Implementation (The Institute)[2] and the Multisystemic Therapy Institute (MSTI) database. With any large-scale implementation and evaluation effort, collecting accurate data is an ongoing process. Throughout this process, the Research and Evaluation Team works closely with providers to establish clear, consistent guidelines about the data collected, ensuring that reports accurately reflect the quality practices that providers deliver. The data presented in this report were accessed in October 2011.

Two State Agencies[3] also provided data in order to better describe the youth who were referred and served by MST, as well as to create additional post-discharge outcome measures (e.g., recidivism). The Department of Juvenile Services (DJS) provided supervision, placement, and offense-related data. The Department of Human Resources (DHR) compiled data regarding child welfare placements and investigations.

[2] Statewide implementation of MST began in FY08; however, use of the data collection measure did not begin until FY09. This measure was developed by the EBP research and evaluation team, which was formerly housed at the Innovations Institute.

[3] Note that the Maryland Department of Health and Mental Hygiene provided data on the interactions of the public mental health system; however, these data require additional validation analyses before reporting.

Utilization

Why do we care about utilization of EBPs?

Utilization data provide information about the youth referred and served by EBPs, as well as details of the admission process. Utilization data are important because they inform stakeholders of which populations are accessing services and which populations are not able to benefit from services. Utilization data also highlight parts of the admission process that are working smoothly, and parts that are in need of improvement. For MST, the utilization data collected include date of referral, date of acceptance, date of rejection, date of assignment to an MST therapist, date of first visit, and date of discharge. These dates are used to calculate the length of time a youth and his or her family are waiting at each stage of the admissions process and their total MST length of stay. Reasons for why some youth are not accepted, waitlisted, or discharged are also collected. In combination with demographic information gathered for all youth referred to MST, these data provide a picture of the "who, when, and why" of MST service delivery in Maryland.

Fidelity

Why do we care about fidelity to an EBP?

Fidelity is defined as the degree to which the EBP is delivered as intended by the program developers (Dusenbury, Brannigan, Falco, & Hansen, 2003). It is critical that the program is implemented with strict adherence to the model's specific selection and readiness criteria, techniques, and practice standards, to ensure that the expected outcomes are attained. In several MST studies, it has been found that the model's overall effectiveness in reducing risk of out-of-home placement, reducing prevalence of delinquent behavior, and improving youth and family functioning is significantly reduced when therapists have not followed the MST treatment protocol (e.g. Henggeler, Melton, Brondino, Scherer, & Hanley, 1997). One way to facilitate and ensure fidelity is for EBP implementation efforts to include methods to complete continuous fidelity monitoring and to provide consistent feedback to therapists (Aarons, Sommerfeld, Hecht, Silovsky, & Chaffin, 2009).

What is fidelity in MST?

In MST, therapist adherence to the nine core treatment principles that govern therapist's behavior and interactions define treatment fidelity (Henggeler et al., 1997). The MST Quality Assurance System was developed to facilitate MST transportability, and ensure the adherence of therapists, supervisors, and organizations to MST and the nine treatment principles. This quality assurance system includes validated measures of clinical supervision practices and therapist adherence, and requires a number of procedures (e.g., family report about treatment, therapist ratings of supervisors) to verify that fidelity to the MST model is maintained over the course of treatment (Henggeler, Schoenwald, Liao, Letourneau, & Edwards, 2002; Schoenwald, 2008).

How is fidelity measured in MST?

The MST Quality Assurance System consists of two measures, the *Therapist Adherence Measure-Revised (TAM-R)* and *Supervisor Adherence Measure (SAM),* which assess model adherence. The TAM-R is a 28-item questionnaire that assesses the therapist's adherence to the MST model as

reported by the youth's primary caregiver. The TAM-R should be completed during the second week of therapy and approximately every four weeks thereafter until treatment ends. The adherence score ranges from 0 to 1, with 1 representing the highest level of adherence. A threshold score of .61 indicates that the therapist is delivering the MST intervention with fidelity.

The SAM is a 43-item questionnaire that assesses supervisory behavior across four domains (i.e., Structure and Process, Adherence to Principles, Analytical Process and Clinical Development) as reported by the therapists s/he supervises. Supervisors receive one score in each of the four domains, which is averaged across all therapists providing ratings during a report period. In each domain, higher scores indicate greater adherence to the MST model. Because not all MST sites are required to complete the SAM, scores will not be included and described in this report.

Outcomes

Why do we care about outcomes in EBPs?

Implementing an EBP effectively in a community is an ongoing, planned process, with specific steps that should lead to positive outcomes or positive direct effects of a program for the population served (Chinman, Imm, & Wandersman, 2004). Good outcomes are not based on the mere availability and utilization of EBPs; they are critically dependent on how well therapists deliver the practices and the "fit" with the population being served. In order to understand whether an EBP works and achieves the desired level of change, it is critical to identify, carefully define, and evaluate the outcomes of that EBP.

What are the outcomes of interest in MST?

MST focuses on changing the individual, family, peer, school, and neighborhood factors that place youth at increased risk for offending, while also building protective factors. As such, the outcomes of particular interest in MST include reducing the frequency and number of days spent in out-of-home placements, reducing delinquent behaviors, and improving family functioning (Henggeler, Schoenwald, Bourduin, Rowland, & Cunningham, 1998).

MST outcomes at discharge

Upon discharge from MST, each case is evaluated in three areas: (1) treatment completion (i.e., case progress), (2) change in factors associated with problem behaviors (i.e., instrumental outcomes), and (3) status in three areas of functioning that are of primary interest to stakeholders (i.e., ultimate outcomes).

Instrumental outcomes include six "yes" or "no" items that were developed by MSTI to capture whether or not youth have achieved skills that are "instrumental" in producing positive outcomes. Each item is rated by an MST therapist at discharge and reflects changes or improvements in areas thought to be important to successful client functioning. Therapists are required to elicit feedback from a youth's family, school, and Case Manager (if applicable) to generate these ratings, and their direct clinical supervisors and MST systems specialists then verify that these ratings are accurate.

Ultimate outcomes provide basic, but critical, information about how the youth is functioning in the community at the time of discharge. These outcomes are completed by MST therapists, and they include whether the youth was living at home, was in school or working, and had any new arrests as of treatment discharge. Individual youth data are aggregated to compute the percentages of youth within jurisdictions or across the state who achieve these ultimate outcomes. The ultimate

outcomes are most pertinent for the Statewide EBP implementation effort, allowing stakeholders to gauge if the program is having the desired impact on youth.

MST utilizes the MST Program Dashboard Rating Criteria to guide interpretation of the ultimate outcomes by delineating cut off points to categorize ultimate outcome discharge data. These categories are called *performance categories*, and are labeled *within target* (green), *needs monitoring* (yellow), and *area of concern* (red). Targets for each ultimate outcome are set according to findings from numerous clinical trials, or are based on recommended best practices. The use of the performance categories is intended to facilitate program monitoring and management, and can help program managers and implementers identify which areas need to be targeted for improvement.

Table 1. MST Program Dashboard (Final v.6.0, 7/11/2008)

ULTIMATE OUTCOMES REVIEW	Target	**Within Target** Green Zone	**Needs Monitoring** Yellow Zone	**Area of Concern** Red Zone
Percent of youth living at home	90%	>88%	80-87.9%	<80%
Percent of youth in school/working	90%	>85%	75-84.9%	<75%
Percent of youth with no new arrests	90%	>85%	75-84.9%	<75%

State outcomes of interest post-discharge

Based on input from Maryland's EBP Implementation Committee, which includes representatives from all State child-serving Agencies, The Institute collects data on specific outcomes from state agency databases. These data will be used to determine the long-term impact of prioritized EBPs, such as MST. Specifically, the State is interested in measuring outcomes in the following areas:

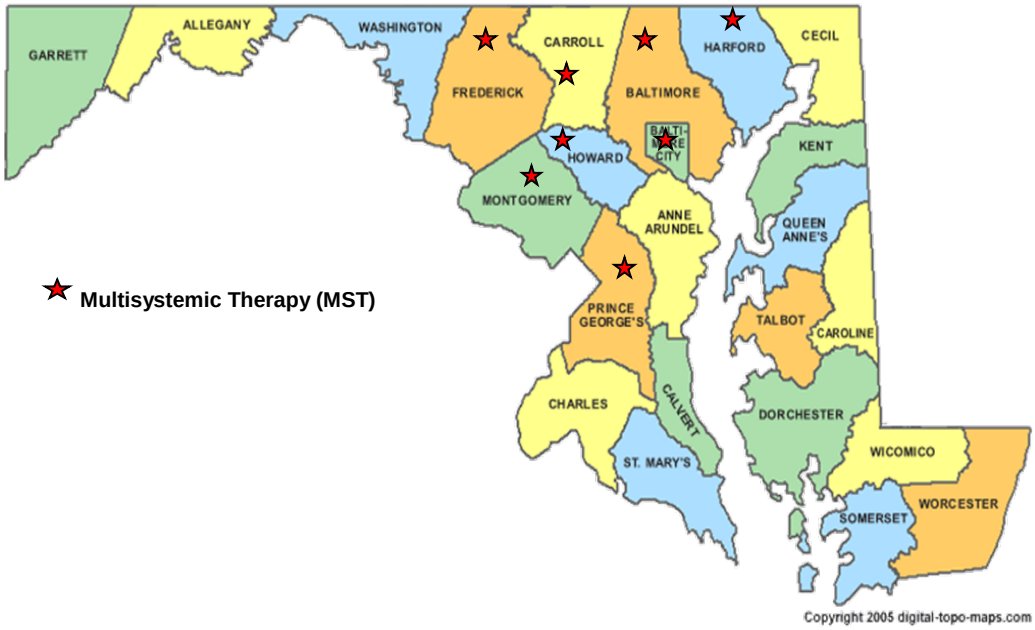
- Youth residential and community stability;
- Youth and family functioning;
- Youth recidivism and rearrest;
- Youth school attendance and performance;
- Youth mental health functioning; and
- Youth safety.

Data reflecting these outcomes are expected to be collected at the start of services, at discharge, and one year *after* discharge. Currently, The Institute has data related to youth recidivism and rearrest, as well as child welfare investigations and placements, which are detailed in the Outcomes section of this report.

MST focuses on changing individual, family, peer, school, and neighborhood factors that place youth at increased risk for delinquency.

Multisystemic Therapy in Maryland

Figure 1. Map of MST in Maryland by Jurisdiction, FY11



Where was MST Offered in Maryland?

During FY11, MST was offered in 8 jurisdictions[4] in Maryland. The Eastern and Southern DJS Regions of the State did not have this program. Four providers—Community Counseling & Mentoring Services, Inc., Community Solutions, Inc., North American Family Institute, and Way Station, Inc.—administered MST for an estimated annual capacity of 385 youth[5]. MST was funded by DJS and the Children's Cabinet Interagency Fund (CCIF); funding sources varied by jurisdiction (see Table 2).

Table 2. MST in Maryland, FY11

Region (DJS)	Jurisdiction(s) Served	Provider	Funding Source	# Funded Daily Slots*
Baltimore	Baltimore City	North American Family Institute	DJS	45
Central	Baltimore	Community Solutions, Inc	DJS	20
	Carroll, Harford, and Howard	North American Family Institute	DJS	15
Western	Frederick	Way Station, Inc	CCIF	--
Metro	Montgomery, Prince George's	Community Counseling & Mentoring Services, Inc	DJS CCIF	25 --

*The estimates provided represent the number of **slots funded by DJS as of June 30, 2011**. Note that estimates for CCIF will be available in FY12. Also, the number of active slots may vary by region during the fiscal year due to reallocation and other factors.

[4] Jurisdictions in Maryland refer to all Counties and Baltimore City.
[5] This figure is only based on the number of DJS-funded slots for FY11.

How was MST Utilized in Maryland?

Who was referred to MST?

In FY11, 489 youth were referred to MST across the State. Referrals to MST have generally increased since the first quarter of FY10 (see Figure 5).

The majority of these referrals were made by DJS (91%), followed by DHR (4%). Five percent of referrals came from other sources, which primarily included self-referrals. (Refer to the Appendices for program and county-level distributions of all descriptive statistics).

The median age of youth referred was 16 years old, and ages ranged from 10 to 18 years old. Approximately four-fifths of referred youth were African American/Black (79%)—only a small share was Hispanic/Latino (4%) or another minority race/ethnicity (3%). Seventy-nine percent of these youth were male. Note that, to the extent that DJS is the primary referral source for this program, the percentage of female referrals to MST (21%) is slightly less than the percentage of annual female referrals to DJS (27% in FY10).

Figure 2. Referral Sources for Youth Referred to MST, FY11

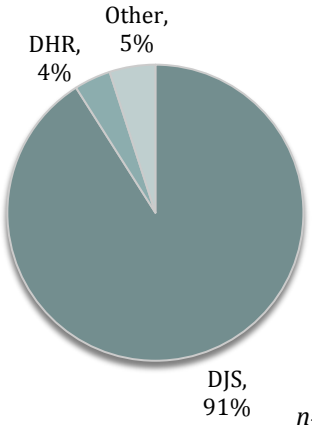


Figure 3. Ages of Youth Referred to MST, FY11

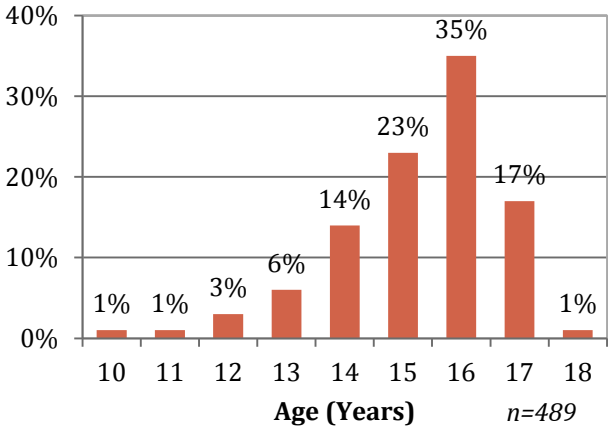
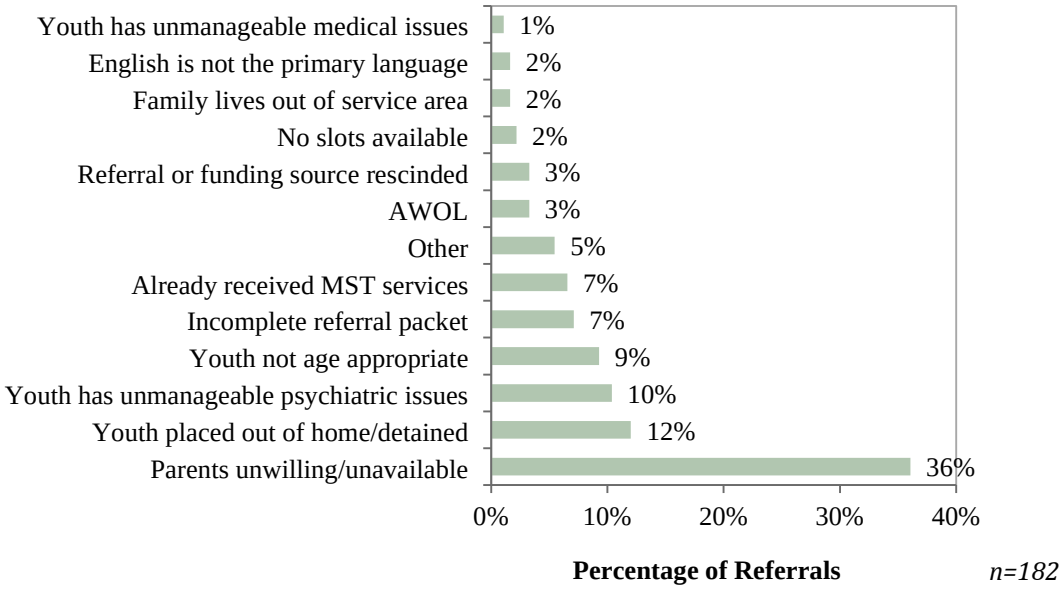


Table 3. Demographic Characteristics of Youth, FY11

		Referred*	Started Services	Did Not Start Services
	Total Youth	489	305	182
Gender	Male	79%	81%	76%
	Female	21%	19%	24%
Race/Eth.	African American/Black	79%	77%	84%
	Caucasian/White	14%	17%	8%
	Hispanic/Latino	4%	4%	4%
	Other	3%	2%	4%
	Average Age (s.d.)	15.3 (1.4)	15.4 (1.2)	15.3 (1.7)

**Due to pending admissions at the end of the year, the number of youth who started and did not start services will not total number of youth referred.*

Figure 4. Reasons Why Youth Did Not Start Services, FY11

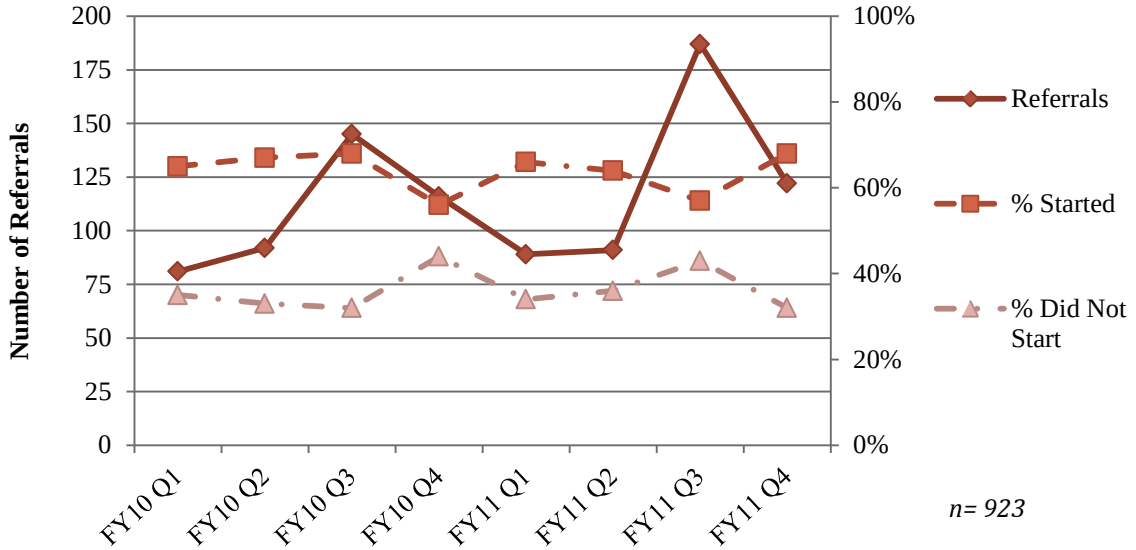


Who did not start MST and why?

Of the 489 youth who were referred to MST in FY11, 182 (37%) did not start services. Compared with youth who started MST, youth who did not start services were more likely to be female and African American/Black. The most frequent reason for not starting MST was *parents unwilling/unavailable* (36%); this was followed by *youth placed out of home/detained* (12%), *youth has unmanageable psychiatric issues* (10%), and *youth not age appropriate* (9%).

The quarterly percentage of youth who did not begin MST fluctuated between 32% and 43% during FY10 and FY11 (see Figure 5). In FY11, the third quarter had the highest percentage of youth who did not start services (43%), with *parents unwilling/unavailable* (36%) being the most common reason provided, followed by *youth not age appropriate* (18%), *youth placed out of home/detained* (18%) and *referral or funding source rescinded* (8%).

Figure 5. Number of MST Referrals, Percent Started Services, and Percent Did Not Start Services by Quarter, FY10 & FY11



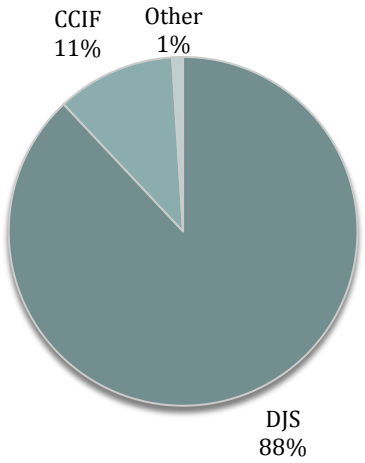
Who was served by MST?

The number of youth served by MST in Maryland increased from 373 in FY10 to 408 served in FY11. (Note that the *number of youth served* includes admissions from FY11 as well as youth who admitted from the previous fiscal year and still receiving services in FY11.)

The majority of youth served by MST were funded by DJS (88%), followed by CCIF (11%).

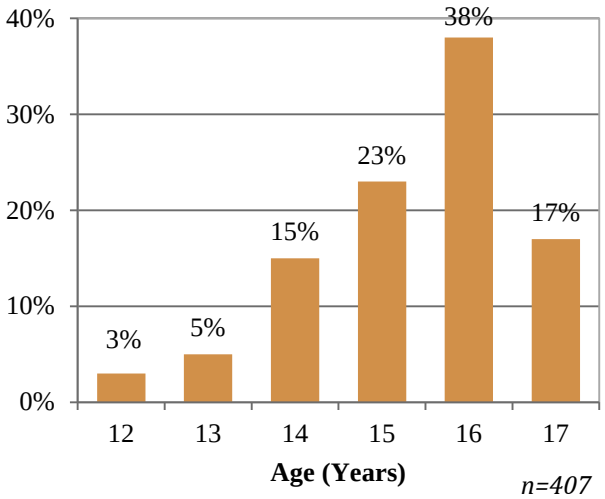
The median age of youth served by MST was 16 years old, and ages ranged from 12 to 17. Most youth were male (81%) and African American/ Black (80%). The share of African American/Black youth served is disproportionately greater than the percentage of African American/Black youth who are referred to DJS (60% in FY10)—the primary referral and funding source for MST. Moreover, the percentage of females served (19%) is less than the percentage of girls referred to DJS (27% in FY10). These shares of youth—female and African American/Black—are likely closer to the proportions of youth at the deeper end of the juvenile justice system (i.e., adjudicated delinquent and under DJS supervision).

Figure 6. Funding Sources for Youth Served by MST, FY11



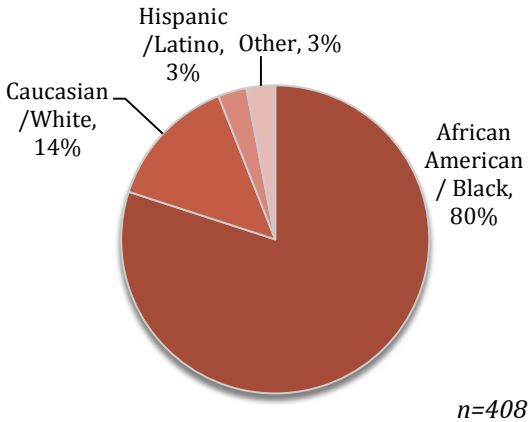
n= 408

Figure 7. Ages of Youth Served by MST, FY11



n=407

Figure 8. Race/Ethnicity of Youth Served by MST, FY11



n=408

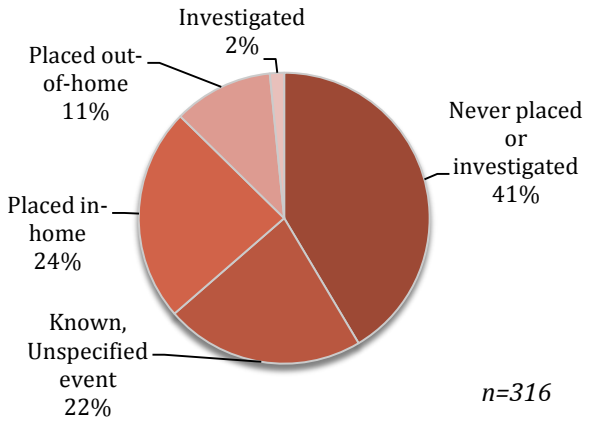
Additional information about youth served

The Institute obtained additional data from DJS and DHR in order to better illustrate youth who were receiving MST during FY11. These data were linked with the EBP service data to describe prior and current involvement with these State Agencies.

Overall, 95% of youth served by MST had at least one prior referral to DJS, and these youth tended to have substantial delinquency histories. On average, youth were 13.4 years old at the time of their first referral to DJS, and they had an average of 5 prior DJS referrals. Further, it has already been established by referral and funding data that most of the youth served were involved with DJS, but it is not obvious *how* these youth were involved with the system. Of the approximately 385 DJS-involved youth served by MST during FY11, 66% were under probation supervision at the time of admission, 30% were under aftercare supervision (i.e., committed to DJS), and 4% were under another form of supervision (e.g., pre-court, administrative).[6] Of youth under probation or aftercare supervision, only 6% were involved in DJS's Violence Prevention Initiative (VPI) at the time of admission to MST.

The additional data obtained from DHR show that, of the 316 youth who received MST and were discharged in FY11[7], 185 (59%) had a history of involvement in the child welfare system. Either before starting or during the course of MST treatment, 35 youth (11%) had been placed out-of-home, 75 (24%) had been placed in-home[8], and 5 youth (2%) had received an investigation for sexual abuse (4 of which were indicated). There were 70 youth (22%) otherwise known to the child welfare system that had never been placed or investigated.

Figure 9. Child Welfare Involvement Prior to or During MST among Youth Served, FY11



Of Maryland youth served by MST in FY11:

- ***95%*** *had a history of involvement in the juvenile justice system*
- ***59%*** *had a history of involvement in the child welfare system*

[6] In some DJS-funded cases, MST was used as a step-down program for youth returning from residential placements. In FY11, only 2 youth had been released from an out-of-home placement within 30 days of admission to MST.

[7] The data provided by DHR only included cases that were discharged on or before 6/30/2011. Hence, any youth who received MST in FY11, and did not discharge by 6/30/2011 were not captured in this figure of youth served in FY11.

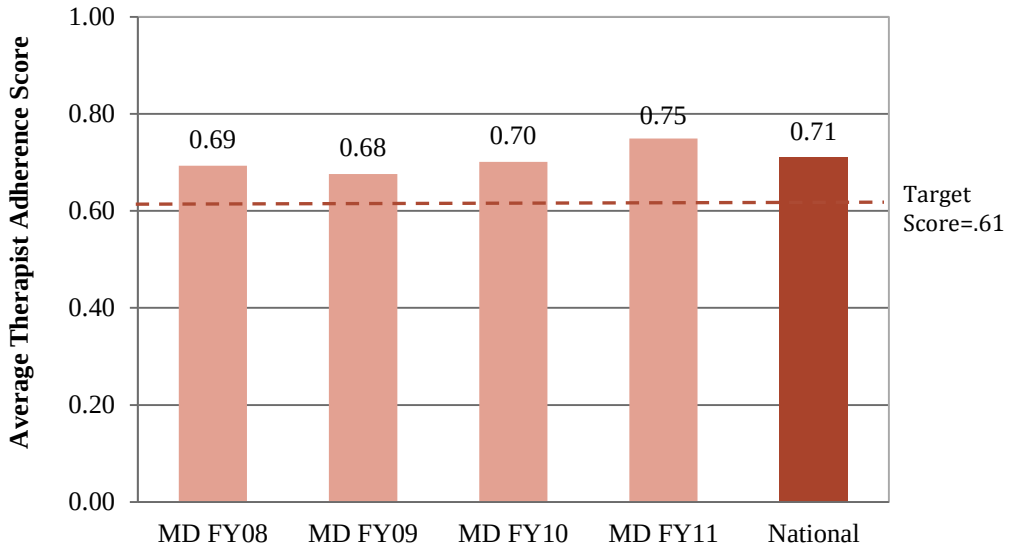
[8] The youth received child welfare services while residing in the home of the caregiver.

Therapists' Fidelity to the MST Model

Therapist adherence is measured through the *Therapist Adherence Measure-Revised (TAM-R)*, which is completed by the primary caregiver starting after the first two weeks of treatment, and then every fourth week until the end of treatment. The target therapist adherence score is .61, which has been associated with good outcomes for families in previous clinical research.

In FY11, 765 TAM-R forms were completed and collected from 314 families, with an average adherence of .75. Overall, 74% of families were served by a therapist with an Average Therapist Adherence Score above the threshold (.61). Therapist adherence scores across MST providers in Maryland have remained above the target score of .61 since statewide implementation in FY08, and have been similar to the national average (.71) each year. Caution should be exercised, however, in interpreting the adherence scores, given that the average percentage of families with at least one TAM-R form completed during each fiscal year has been well below the MST identified target of 100% since FY08. That stated, completion rates have improved from 44% in FY08 to 76% in FY11.

Figure 10. Maryland and National Provider Fidelity Averages, FY08-FY11



MD FY08 n=147
MD FY09 n=349
MD FY10 n=283
MD FY11 n=314
National n=11,151

What do Youth Look Like upon Discharge from MST?

Upon discharge from MST, each case is evaluated based on the following questions:

1. Did the youth and his/her family complete treatment (i.e., case progress)?
2. Were there sufficient changes in factors associated with problem behaviors (i.e., instrumental outcomes)?
3. How was the youth doing in three primary areas of functioning at discharge (i.e., ultimate outcomes)?

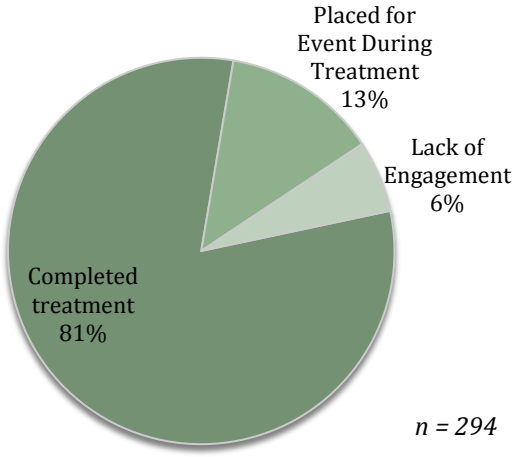
The following section reviews the results for youth discharged from MST in FY11, and compares these findings with the results from previous years where possible.

How many youth were discharged from MST and why?

Youth discharged from MST are classified based on whether they had the *opportunity for a full course of treatment*. Youth who have the *opportunity* include those who were discharged for completing treatment (i.e., case closed by mutual agreement), lack of engagement, or placed for an event during treatment. Youth do *not have the opportunity* if they are discharged for administrative reasons (e.g., funding rescinded), placed for an event that occurred prior to treatment, or moved. Of the 314 cases discharged in FY11, less than 7% of cases did not have the opportunity for a full course of treatment.[9] Note that these cases are not included in subsequent analyses.

Overall, 294 youth were discharged from MST with the opportunity for the full course of treatment in FY11. The average length of stay (ALOS) in treatment was 117 days, which is well within the targeted length of stay per MST guidelines (100–140 days). Further, the majority of these youth completed treatment (81%, n=237). With regard to those who did not complete MST, 13% percent of all discharged youth were *placed or incarcerated during treatment*, and 6% were discharged due to *lack of engagement*. Note that the ALOS differed significantly for youth who completed MST (124 days) and those who did not (88 days).

Figure 11. Discharge Reasons for Youth Discharged from MST, FY11



[9]Of youth discharged *without* the opportunity for a full course of treatment, 3% were removed by funding or referral source, 2% were placed for an event prior to treatment, 1% moved, and 1% was removed by the provider for administrative reasons.

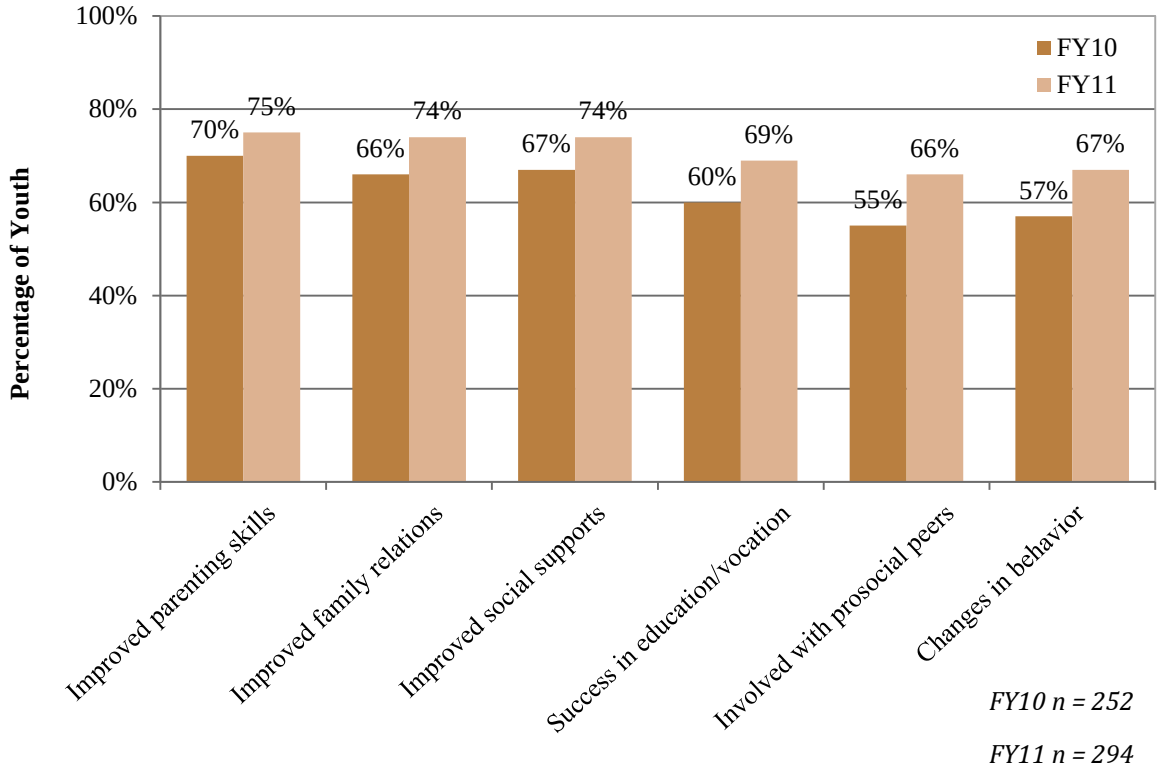
MST instrumental outcomes at discharge

While a youth may complete MST, it does not necessarily mean that the program will be effective for that youth. MSTI encourages the use of both instrumental and ultimate outcomes as a means to gauge the success of the program with each youth. Instrumental outcomes measure therapist-rated change in six target areas of treatment: improvements in parenting skills, family relations, family social supports, youth educational/vocational success, evidence of youth prosocial activities, and sustained positive changes by the youth. Changes or improvements in these areas are thought to be important to successful client functioning. Therapists are required to solicit feedback from schools, DJS case managers, and the youth and family to ensure valid reporting of these indicators. Ratings are also verified with the therapist's supervisor and MST system specialist.

Figure 12 shows the instrumental outcomes for youth discharged from MST in Maryland during FY10 and FY11. Overall, these outcomes have shown substantial improvement from one year to the next. Note that the availability of MST was substantially increased across Maryland in FY08 and FY09, and this program scale-up generated significant implementation challenges (e.g., achieving fully staffed programs, obtaining appropriate referrals, etc.). It is likely that youth outcomes were impacted by these challenges, and it is expected that outcomes will improve as program implementation improves, over time.

In FY11, approximately two-thirds or more of the youth had a positive indication for each of the items. Slightly greater percentages were achieved for parenting skills (75%), family relations (74%), and social supports (74%), compared with items that are more reflective of the youth's individual behavior (i.e., success in school/vocation, involvement with prosocial peers, and changes in behavior).

Figure 12. Instrumental Outcomes for Youth Discharged from MST, FY10 & FY11



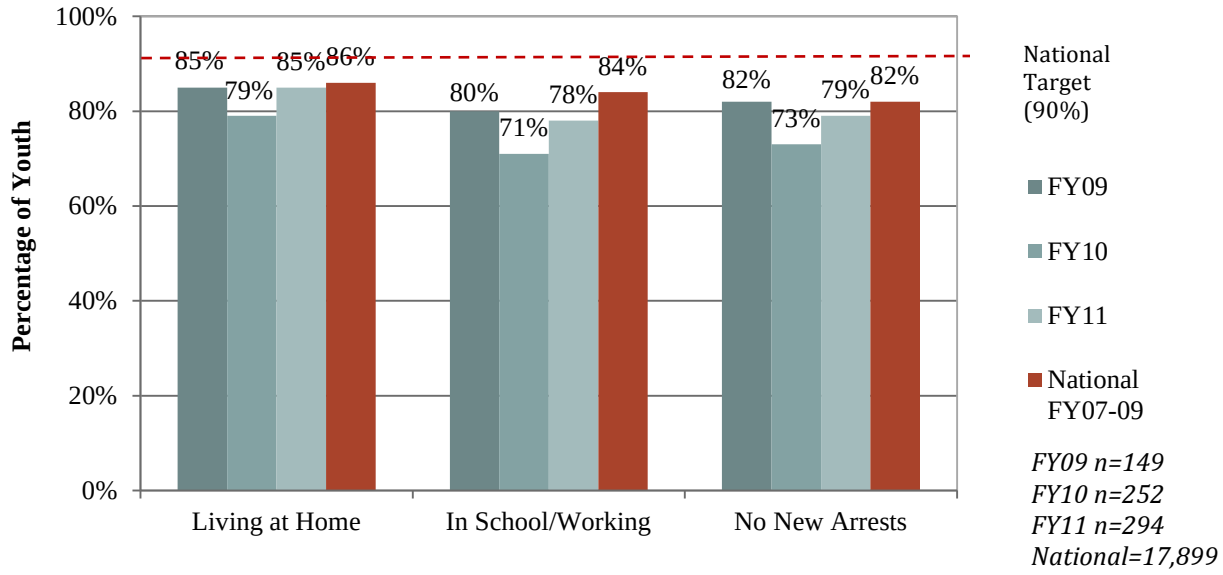
MST ultimate outcomes at discharge

The ultimate outcomes are among the most important indicators for MST's success with youth, and they are key measures to review when evaluating statewide implementation. These outcomes are also rated by therapists and measure youth functioning in three main areas—whether the youth was living at home at discharge, whether the youth was in school and/or working at discharge, and whether the youth had been arrested for a new offense since treatment had started. Additional indicators of success include post-discharge outcomes, which are discussed in the next section.

Figure 13 shows the ultimate outcomes for youth discharged from MST in Maryland from FY09 through FY11. While outcomes have fluctuated during this time frame, in the most recent year, 85% of youth were living at home, 78% were in school and/or working, and 79% had no new arrests upon discharge. These percentages fall short of the national target of 90% in the three categories of outcomes, but are comparable to the figures compiled from MSTI's national data from 2007 through 2009 (see Figure 13).[10] MST completers in FY11 come closer to this 90% mark—97% were living at home, 84% were in school and/or working, and 81% had no new arrests upon discharge (results not shown). Further, 79% of the youth who completed treatment had positive results in all three of the ultimate outcomes.

Readers should note that the ultimate outcomes are reported by MST therapists, who may not be aware of all youth contacts with law enforcement or the justice system. Further, not all contacts with the system may be the result of an arrest—youth may also be referred to DJS from other sources (e.g., school). According to DJS data, 27% of youth had been referred to DJS while receiving MST in FY11—as opposed to the reported 21% who had new arrests upon discharge (see above).

Figure 13. Maryland & National MST Ultimate Outcomes for Discharged Youth



[10] Similarities and differences between national MSTI data and Maryland data should be interpreted with caution because the data were collected during different time periods, the sample sizes are considerably different for each data source, and the demographic and risk characteristics of the Maryland and National samples may be different.

How do youth fare after discharge from MST?

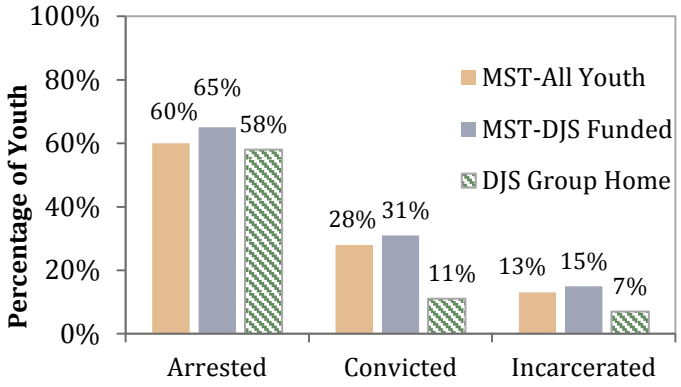
Juvenile and criminal justice system involvement. Research has demonstrated that participation in MST is associated with a reduced risk for delinquency and criminal behavior over time. In order to assess longitudinal outcomes in Maryland, the Institute provided DJS with the name, gender, race/ethnicity, and date of birth of *all* youth who were discharged from MST in FY10, in order to identify matches in DJS's automated case management system (ASSIST). DJS also requested and retrieved related records from the adult criminal justice system since many of these youth were older (e.g., 17 years old) and any new offenses may fall under adult jurisdiction. Following DJS's recidivism criteria, subsequent involvement with DJS and the adult system during the follow-up period were combined and categorized as arrested, convicted, and incarcerated (see insert for definitions of these terms). Once again, the following findings should be assessed within the context of early program implementation.

> ***Juvenile & Criminal Justice Involvement/Recidivism Measures***
>
> For the purposes of this report, subsequent involvement with the juvenile and criminal justice systems will be combined and labeled as the following categories:
>
> ***Arrest*** refers to any subsequent contact with either the juvenile or adult justice system.
>
> ***Conviction*** refers to any youth who has a judiciary hearing and is adjudicated delinquent, or is arrested and has a criminal hearing in the adult system and is found guilty.
>
> ***Incarceration*** refers to any youth who is committed to DJS custody for placement, or is arrested, convicted, and incarcerated in the adult system.

In FY10, 252 youth were discharged from MST. Of those 252, 44 (17%) had been placed in a secure DJS facility (i.e., detention, staff-secure residential, and hardware-secure residential) at the time of MST discharge. Recidivism rates for these 44 youth are not reported due to insufficient follow-up data. Of the 208 youth who remained in the community, 60% were arrested,[11] with 28% having a charge that resulted in a conviction, and 13% ultimately being incarcerated in the 12 months following discharge.[12] Youth who completed MST (n = 185) had similar rates: 60% were arrested, 30% were convicted, and 14% were incarcerated within one year.

In order to evaluate how well MST youth fared in comparison to similar youth in other treatments or placements, DJS identified a sample of youth who were demographically similar to those in MST but discharged from either group homes or therapeutic group homes in FY10. In Maryland, MST is used as a diversion option for those youth who are at risk of placement in group homes, rendering this a suitable comparison group.

Figure 14. 12-Month Recidivism Rates for Youth Discharged from MST and DJS Group Homes, FY10



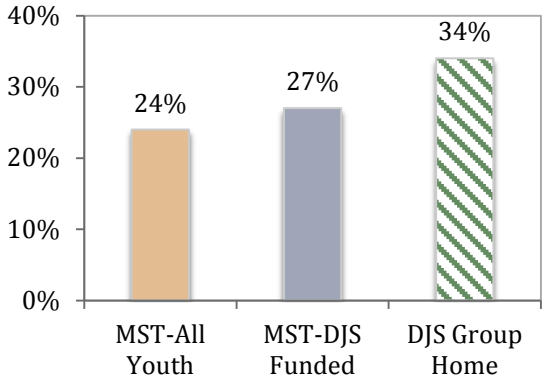
MST-All n=208
MST-DJS Funded n=173
DJS Group Home n=314

[11] Note that 23% of the new referrals to DJS were for felony offenses.
[12] There were no significant differences in the likelihood of conviction or incarceration 12 months post-treatment by gender; females were significantly less likely to be arrested.

The group home sample of youth was primarily male (83%) and African American (75%), with an average age of 16 years old. The average length of stay in group homes was 7 months. Of the 401 discharged youth, 22% (n=87) were placed in a secure DJS facility upon release. Of the 314 youth who remained in the community, 58% were arrested, 11% were convicted, and 7% were incarcerated in the year following release from the group home. Compared with MST youth, youth released from group homes had lower rates of arrest (65% vs. 58%), conviction (31% vs. 11%), and incarceration (15% vs. 7%). Caution should be exercised when interpreting these estimates though, since this analysis did not account for all potential differences between MST and group home youth. And again, MST implementation challenges may have impacted youth outcomes.

New residential placement with Juvenile Services. Youth involved with DJS do not need to commit a new offense and processed through the juvenile court in order to be placed in a residential facility. Consequently, more youth may be admitted to a new residential placement following discharge from MST than indicated by rates of incarceration (shown above). Of the 208 youth who were discharged from MST to the community in FY10, 24% were admitted to a residential facility[13] by DJS during the 12 months following discharge. The most common facility types included Youth Centers and Substance Abuse Programs. Compared with the sample of DJS youth who were released from group homes in FY10, significantly fewer MST youth under DJS supervision (i.e., DJS funded) experienced a subsequent residential placement (34% vs. 27%). Note that these percentages do not include youth who were detained or residing in a facility at discharge from MST or group homes (see above).

Figure 15. New DJS Residential Placement within 12 Months Post-Discharge of MST and DJS Group Homes, FY10



MST-All n=208
MST-DJS Funded n=173
DJS Group Home n=314

Child welfare system involvement. Similar to DJS, The Institute provided DHR with the names, dates of birth, and other demographic variables of all youth who were discharged prior to the last day of FY10. DHR matched these youth in their Children's Electronic Social Services Information Exchange (CHESSIE) to retrieve information about contact with DHR post-MST discharge. As per DHR data, 165 (65%) of the 252 youth who discharged in FY10 had a history of involvement in the child welfare system, most of which occurred either prior to or during MST treatment. In the 12 months following discharge, only 3 youth (1%) were placed out-of-home[14], and 5 youth (2%) were placed in-home[15]. One youth, who discharged due to lack of engagement, was the subject of an [indicated] investigation for neglect.

[13] In this case, DJS residential placements include places such as Youth Centers, group homes, residential treatment facilities, treatment foster care, etc. It does not include detention.
[14] Out-of-home placements included 1 youth in a Residential Group Home, 1 youth in a Residential Treatment Center, and 1 youth in Treatment Foster Care.
[15] In-home placements included 3 youth in Continuing Protective Services, 1 youth in Interagency Family Preservation Services, and 1 youth in Services to Families with Children.

SUMMARY

Significant Findings

Who did MST serve in Maryland and how were services utilized?

- In FY11, MST programs were funded in **8 jurisdictions** throughout the State.
    - The increase in teams enhanced Maryland's capacity to provide community-based services for at risk and delinquent youth.
- **408 youth were served** by MST in FY11—an increase of nearly 10% in one year.
- The median age of youth served was **16 years old**, and the majority of youth served were **African-American** and **male**.
- The majority of youth completed MST (cases closed by mutual agreement).
    - The percentage of youth discharged from MST due to "lack of engagement" (i.e., discharge decision made because MST team was unable to engage the family in treatment despite therapist's persistence) was **6%** in FY11, lower than the national average of **8%**.
    - The percentage of youth discharged due to placement during treatment was **13%.**

Fidelity (Adherence) to MST: Were MST services adequately provided in Maryland?

- **74%** of youth and families were served by a therapist with an average adherence score above the .61 target threshold, which is higher than the national average of about **70%.**
- Although the Maryland State average adherence score for FY11 **(.75)** was above the target threshold (.61), **caution should be exercised in interpreting the adherence scores given the low percentage of families completing at least one TAM-R form**.

Did MST affect youth outcomes in Maryland as expected?

- Among youth who were discharged from MST in FY11, **85%** were living at home, **78%** were in school or working, and **79%** had no new arrests as of discharge.
    - Of MST completers, **97%** were living at home, **84%** were in school or working, and **81%** had no new arrests as of discharge.
- **40%** of youth discharged from MST were not arrested or referred to DJS in the year following discharge, and **87%** had not been committed or incarcerated. Further, **76%** of these youth did not have a new residential placement with DJS, and **less than 5%** of the youth discharged from MST had any subsequent involvement in the child welfare system.
- Compared with a sample of demographically similar DJS youth who were discharged from group homes and therapeutic group homes in FY10, MST youth (referred and funded by DJS) were slightly more likely to be arrested, convicted, and incarcerated.

Implications

The aggregated MST data provided in Maryland for FY10 and FY11 indicate that a diverse sample of families received MST, and that these services were generally adherent to the MST model. The majority of youth had positive outcomes at discharge from MST, and a small percentage of youth who received services in FY10 were ultimately committed to DJS or an adult correctional facility

because of a new referral or arrest after their discharge from MST. These outcomes are expected to get better as MST implementation is improved over the coming years.

FUTURE DIRECTIONS AND RECOMMENDATIONS

1. State and local stakeholders should support MST providers in conducting informational briefings with the judiciary system.
2. Referral agencies and MST providers should continue frequent and consistent communication to track and maintain referral flow based on current openings and upcoming discharges. Given the high rates of youth not starting services due to parental unwillingness or availability, greater efforts should be expended to educate parents on the goals of the program, encourage participation, and work with parents to ensure that the program suits their circumstances.
3. Referral sources should contact their MST providers before making a referral for youth in an out-of-home placement. Further, both the referral source and MST providers should work together to enhance family engagement.
4. The EBP Advisory Committee subgroup on Family Engagement should continue to develop small grants to pilot a peer support model designed specifically for EBP implementation.
5. MST vendors should continue educating referral sources and judicial leadership about MST goals and strategies.
6. Stakeholders should support regular communication between Contract Management System staff and MST Therapists.
7. MST vendors should continue working closely with the MST Expert at The Institute for Innovation and Implementation to systematically carry out improved engagement strategies to better support TAM-R completion/collection.
8. The Institute for Innovation and Implementation should continue to facilitate discussions between MST national consultants, MST providers, and referral agencies to improve implementation of MST in Maryland.
9. The Institute for Innovation and Implementation should continue to work with DJS to identify a comparable youth sample to youth who receive MST, matched on additional factors (including those individual and family factors that may place youth at increased risk of delinquency), to better understand how MST compares to other treatment options available in Maryland for delinquent youth at risk of out-of-home placement.

General EBP Implementation and Evaluation

Presented below is a brief outline of the necessary phases of program implementation, especially useful for EBPs. These phases are based on work developed by the National Implementation Research Network and published in Implementation Research: A Synthesis of the literature (Fixsen et al., 2005; found at http://www.fpg.unc.edu/~nirn). Careful consideration and adoption of these phases is critical to the successful implementation of EBPs, and improves the likelihood that the EBPs will achieve their desired outcomes. In addition, utilization and EBP model fidelity are highly dependent on how well these phases of implementation are established and at what phase a program is on this continuum.

PHASES OF IMPLEMENTATION

1. **Exploration and Adoption** – When a determination is made regarding whether a specific EBP is a match for the community. An assessment of the community's needs, available resources, and readiness to implement a new practice is completed, and research findings are used to determine the most appropriate EBP to meet the community's needs. Assessment questions include: What are the needs of the community? How ready is the community for change? Who are the key stakeholders? What are the community resources to support the EBP? This phase may take approximately 2-3 months to complete.
2. **Program Installation** – When several tasks are completed to ensure that the community and organization implementing the EBP have the necessary infrastructure and support to implement the EBP model with fidelity. Tasks may include ensuring availability of funding streams, creating referral mechanisms, ensuring staffing resources, ensuring staff qualifications, and communicating expectations around reporting and outcomes. This phase may take approximately 2-3 months to complete.
3. **Initial Implementation** – The process of adopting the new EBP is ongoing, and the community and organization is supported via additional education, practice, and technical assistance. This phase may take approximately 1-2 years to complete.
4. **Full Operation** – Occurs when learning the EBP is fully integrated into existing community and organization practices, policies, and procedures, and the EBP is used with proficiency and high fidelity. This is an ongoing phase that occurs *at least* 1-2 years.
5. **Innovation** – Occurs when minor changes are made to the EBP that might facilitate implementation in the community and organization, and enhance the standard EBP model; these changes occur *after* the EBP has become fully operational and is done with consistent high fidelity.
6. **Sustainability** – When the EBP has become fully implemented and the goal is to determine ways to ensure its long-term and continued effectiveness in the community. Phases 5 and 6 are ongoing processes that occur *at least* over a 2-4 year period, after full operation has been successfully achieved.

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