MULTISYSTEMIC THERAPY IN MARYLAND: FY 2012 IMPLEMENTATION REPORT

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APRIL 2013

Suggested citation: Farrell, J., Betsinger, S., Mettrick, J., Chen, D., & Zabel, M. (2013). Multisystemic Therapy in Maryland: FY2012 Implementation Report. Baltimore: The Institute for Innovation & Implementation.

Table of Contents

EXECUTIVE SUMMARY

Multisystemic Therapy (MST) is one of five prioritized evidence-based practices chosen by Maryland's Children's Cabinet with the goals of reducing costly out-of-home placements and providing empirically supported community-based practices that address key outcomes (e.g., long-term rates of re-arrest, school attendance, etc.). Since 2007, The Institute for Innovation & Implementation has helped to facilitate MST implementation in Maryland and continues to provide technical assistance and data reporting to providers and stakeholders.

FY12 Data Highlights

Utilization

- In FY12, MST was available in nine jurisdictions throughout Maryland. Based on the number of funded slots, Maryland has the capacity to serve an estimated 336 youth annually.
- 420 youth were referred to MST in FY12. The majority of referrals were provided by the Department of Juvenile Services (DJS) (91%). Of those youth referred, 61% started treatment, which was a slight drop from the percentage admitted in FY11. Issues regarding youth/family availability and consent were the primary reasons youth did not start MST.
- The average age of youth admitted to MST was 16 years old, and the majority of admitted youth were African American/Black (79%) and male (78%). Most youth were involved with DJS upon admission to MST, and these youth had considerable delinquency histories–on average, youth had five prior referrals to DJS. In addition, 37% of youth admitted to MST had prior involvement with the child welfare system.
- The average statewide utilization of funded MST slots was 76%.

Fidelity

- In FY12, the average Therapist Adherence Score (TAM-R) across Maryland providers was .72—well above the MST national target score (.61). Seventy-two percent of youth and families were treated by a therapist with an average adherence score above the .61 target.

Outcomes

- Of the 305 youth who were discharged from MST in FY12, 89% discharged with the opportunity for a full course of treatment. Of those 272 youth, **69% completed MST**—a smaller percentage as compared with the previous two years.
- Of 187 youth who completed MST, at the time of discharge:
  - **98%** were living at home;
  - **88%** were in school/working; and
  - **90%** had no new arrests.
- Of youth who completed MST in FY11, as of one year post-discharge:
  - **48%** did not have a new referral to DJS;
  - **84%** had not been committed to DJS;
  - **81%** had not been placed in a new residential placement with DJS; and
  - **Only 3%** had any new involvement with the child welfare system.

Introduction

Purpose of this Report

In 2007, Maryland's Governor's Office of Children (GOC), on behalf of the Children's Cabinet, and the Department of Juvenile Services (DJS) began to work collaboratively to substantially increase the availability of Multisystemic Therapy (MST) to youth and families in Maryland. MST is a family-based clinical model designed to help youth with behavior problems. It is widely recognized as an evidence-based practice (EBP), suitable for diverse populations in diverse contexts and settings (Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009). Maryland's stakeholders selected MST with the goals of serving youth in their homes, thereby reducing the use of out-of-home placements while improving outcomes for youth and families across the State.

The Institute for Innovation & Implementation (The Institute) collects and analyzes data for a variety of EBPs implemented throughout Maryland. This report provides state and local stakeholders with a summary of MST implementation across the State for fiscal year (FY) 2012. In addition to utilization and MST fidelity indicators, both short- and long-term outcomes for participating youth are examined.

What is an EBP?

An **evidence-based practice (EBP)** is 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.

What is Multisystemic Therapy?

MST is an intensive, family-based treatment program that "focuses on addressing all environmental systems that impact chronic and violent juvenile offenders – their homes and families, schools and teachers, neighborhoods and friends. MST recognizes that each system plays a critical role in a youth's world and each system requires attention when effective change is needed to improve the quality of life for youth and their families." The program serves high-risk youth between the ages of 12 and 17, and their families.

MST therapists typically work with families in their homes and community settings 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 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 (Henggeler et al., 2009).

The goals of MST include reducing anti-social behavior, and thereby risk of out-of-home placements, by improving youth and family functioning while maximizing community-based resources and supports. Ample research has demonstrated that MST is an effective model with juvenile offenders, and a viable

alternative to out-of-home placement (e.g., Henggeler et al., 1997; Timmons-Mitchell et al., 2006). For additional information on MST, please go to www.mstservices.com.

Assessing MST Utilization and Outcomes

The data presented in this report were drawn from multiple sources and fall into three main categories.

- ***Utilization data*** are drawn from youth-level data routinely submitted by providers in Maryland, as well as data provided by DJS and the Department of Human Resources (DHR). These data include demographic information, delinquency history, child welfare system history, and details of the case processing (e.g., referral sources, reasons for not starting treatment, etc.). As a whole, utilization data indicate the "who, when, and why" for youth referred to and served by MST. Readers should note that use of the data collection instrument did not begin until January 2010, and data from July through December 2009 were collected retrospectively. While FY10 data are presented in this report, these findings should be interpreted with caution, as they may reflect some missing information.

- ***Fidelity data*** measure the degree to which the EBP has been delivered as intended by the program developers.

- ***Outcomes data*** allow us to assess whether MST has achieved the desired results for youth and families. MST focuses on individual, family, peer, school, and neighborhood factors that place youth at an increased risk for offending, while also building supports and 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). The different types of outcome data collected are detailed in Table 1.

Table 1. MST Outcome Data—Types and Sources

Type	Indicator	Source
Case Progress	➢ Treatment completion ➢ Reason for non-completion (if applicable)	MST Providers
Instrumental Outcomes at Discharge	➢ Improvements in parenting skills ➢ Improvements in family relations ➢ Improvements in family social supports ➢ Youth educational/vocational success ➢ Evidence of youth pro-social activities ➢ Sustained positive changes by the youth	MST Providers
Ultimate Outcomes at Discharge	➢ Whether the youth was living at home ➢ Whether the youth was in school or working ➢ Whether the youth had any new arrests	MST Providers
Longitudinal Outcomes	➢ Delinquency (e.g., DJS referral, adjudication, and commitment) ➢ Involvement in the child welfare system (e.g., services and placements)	DJS DHR

Descriptive and bivariate analyses (e.g., chi-square, t-test) are utilized to assess statewide utilization, fidelity, and outcomes data from FY12. Where possible, data are presented and comparisons are drawn for previous fiscal years. Please refer to Appendix 1 for FY12 descriptive data presented by funding source, provider, and jurisdiction.

Where was MST Offered in Maryland?

During FY12, MST was implemented in nine jurisdictions[1] 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 (NAFI), and Way Station, Inc.—administered MST for an estimated annual capacity of 336 youth.[2] Across the State, MST was funded by DJS and the Children's Cabinet Interagency Fund (CCIF); funding sources varied by jurisdiction (see Table 2). Note that NAFI was no longer providing MST in Baltimore City or Central Region at the close of FY12; this circumstance likely impacted utilization rates, and potentially fidelity and outcomes, in these areas.

Figure 1. MST Availability in Maryland, FY12

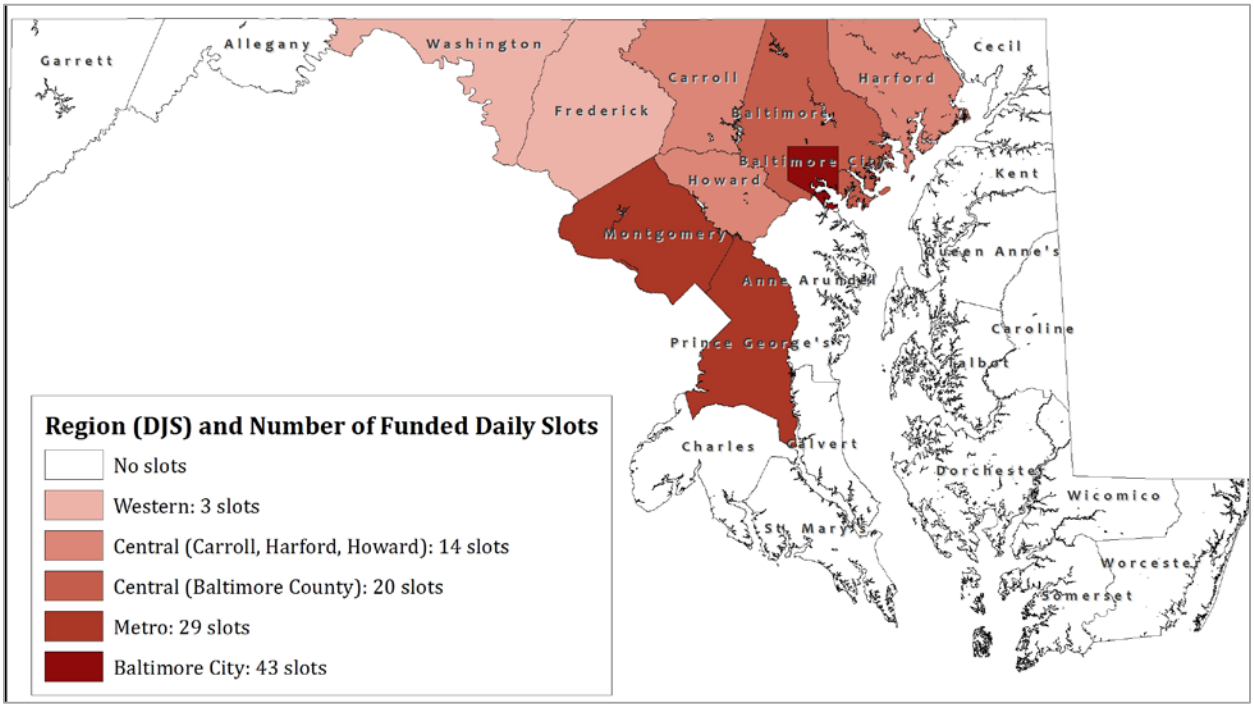


Table 2. MST Provision & Funding Sources in Maryland, FY12

Region (DJS)	Jurisdiction(s) Served	Provider	Funding Source	# Funded Daily Slots
Baltimore	Baltimore City	North American Family Institute	DJS	45.0
Central	Baltimore County	Community Solutions, Inc.	DJS	20.0
	Carroll, Harford, and Howard	North American Family Institute	DJS	15.0
Western	Frederick, Washington	Way Station, Inc.	DJS	3.3*
Metro	Montgomery, Prince George's	Community Counseling & Mentoring Services, Inc.	DJS CCIF	25.0 4.2*

*The number of funded slots changed in this jurisdiction during FY12. The *# Funded Daily Slots* represents a weighted average of the number of slots based on these changes.

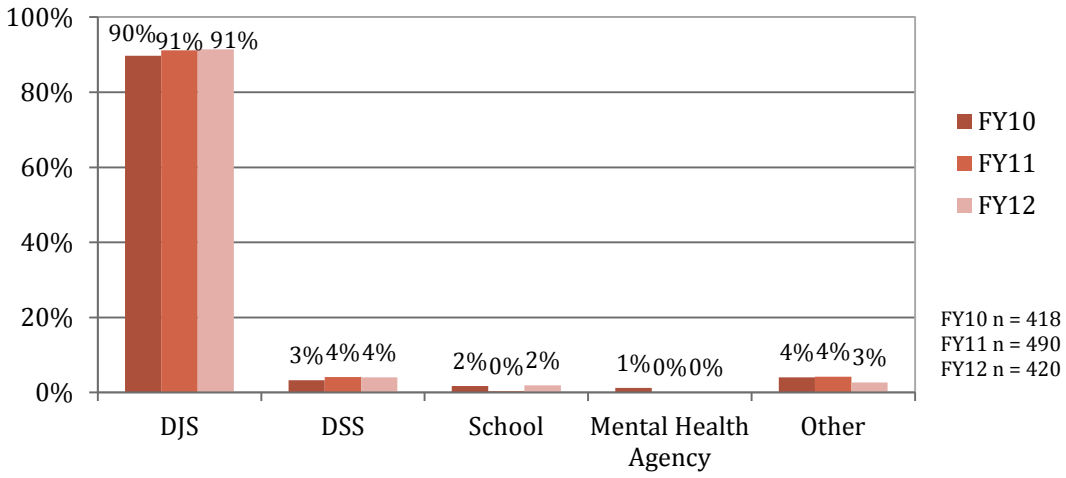
[1] Jurisdictions in Maryland refer to all Counties and Baltimore City.

[2] This estimated number is based on the average number of slots funded by DJS and CCIF during FY12 (n=112). It assumes that each youth will remain in MST for an average length of stay of 120 days (the targeted rage is 100 to 140 days), and that three youth can be served in each slot during the course of the year.

Referrals to MST

Maryland youth may be referred to MST from a variety of sources, but in FY12, the majority of the 420 referrals were made by DJS (91%), followed by local Departments of Social Services (DSS; 4%) and schools (2%; Figure 2). DJS has been the principal referral source in Maryland over the past few years.

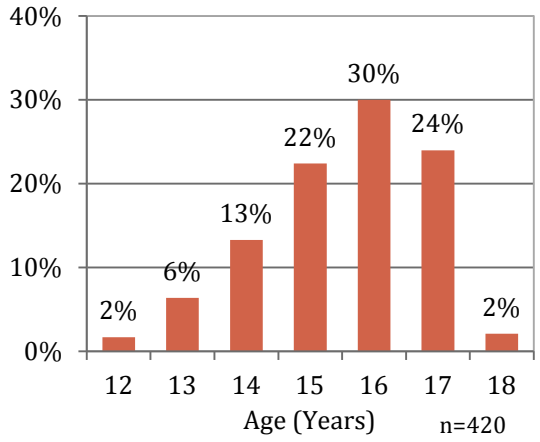
Figure 2. MST Referral Sources, Percentage of Total Youth Referred, FY10-FY12



Characteristics of Referred Youth

MST can serve male and female youth from diverse racial and ethnic backgrounds who are between the ages of 12 and 17 years old. In FY12, almost all of the referred youth met the age criteria, though they tended to be older adolescents. Approximately three-quarters (76%) of the referred youth were between the ages of 15 and 17 years old (Figure 3), and the average age at referral was 16.0 years old (Table 3). Seventy-nine percent of referred youth were African American/Black, followed by 14% Caucasian/White youths; only a small share was Hispanic/Latino (6%) or another minority race/ethnicity (1%). Seventy-eight percent of these youth were male.

Figure 3. Ages of Youth Referred to MST, FY12



Characteristics of youth referred to MST have changed slightly over time. Since FY10, the proportion of African American/Black youth referred in Maryland has significantly declined (85% in FY10, 79% in FY12), while the proportion of Hispanic/Latino youth has increased (1% in FY10, 6% in FY12). Further, a significantly greater share of the referrals were for females in FY12 (22%), relative to FY10 (16%).

Table 3. Demographic Characteristics of Youth Referred to MST, FY10-FY12

		FY10	FY11	FY12
	Total Number of Youth	436	492	420
Gender	Male	365 (84%)	388 (79%)	328 (78%)
	Female	71 (16%)	104 (21%)	92 (22%)
Race/Eth.	African American/Black	369 (85%)	388 (79%)	333 (79%)
	Caucasian/White	51 (12%)	71 (14%)	57 (14%)
	Hispanic/Latino	6 (1%)	19 (4%)	24 (6%)
	Other	9 (2%)	14 (3%)	6 (1%)
	Average Age (s.d.)	16.0 (1.3)	15.8 (1.4)	16.0 (1.3)

Referred Youth Who Did Not Start MST

Not all youth referred to MST start treatment. In some cases, the MST provider may determine that the youth and/or family are not eligible for MST treatment, and in other cases, the youth/family may be eligible but they choose not to start for another reason. Figure 4 lists the reasons for not starting MST, which are indicated by the providers. These reasons are closely monitored over time as they offer important information about how to improve the referral process, including how to increase appropriate referrals and decrease barriers to treatment engagement. Ultimately, utilization is highly dependent on a sufficient flow of referrals for eligible youth and families who could benefit from MST.

Figure 4. Reasons for Not Starting MST

Youth may not start MST due to exclusionary factors that make them **ineligible** for participation, including:

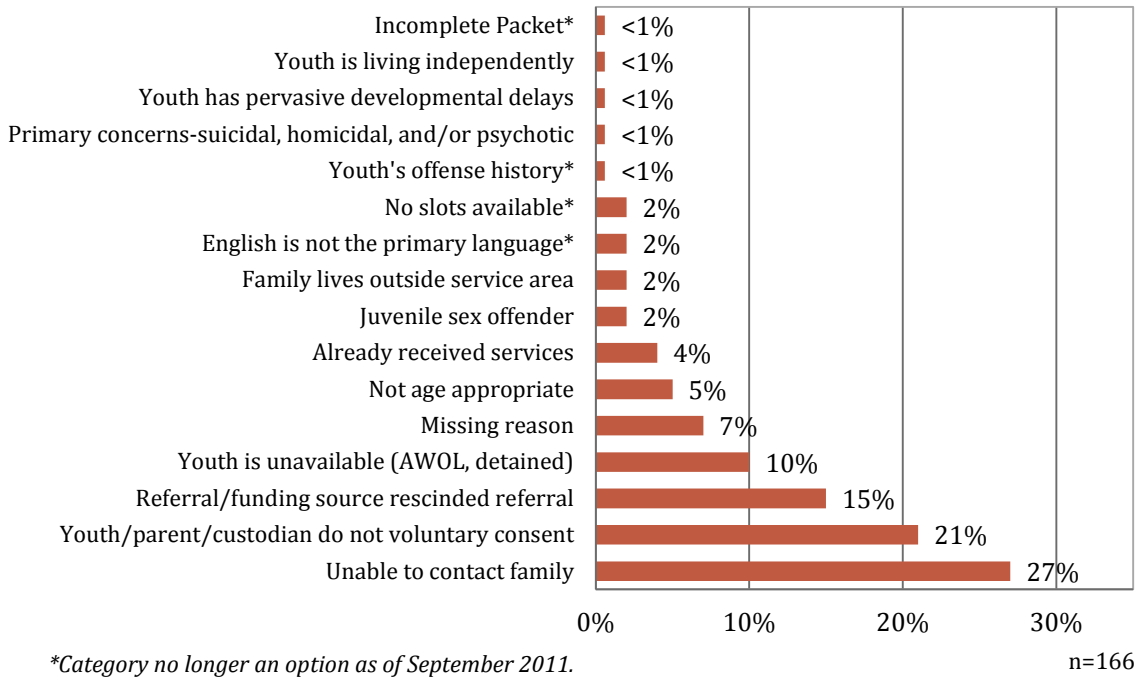
- *Age appropriateness;*
- *Youth is living independently;*
- *Primary concerns related to suicidal, homicidal, or psychotic behaviors;*
- *Pervasive developmental delays;*
- *Juvenile sex offender; or*
- *Unavailable (AWOL, detained).*

Youth may not start MST despite being **eligible** because:

- *The referral/funding source rescinded the referral;*
- *The youth and/or parent/ guardian do not voluntarily consent;*
- *The family cannot be contacted;*
- *The family is outside of the service area; or*
- *The youth/family already received services.*

Figure 5 shows the reasons that youth did not start MST in FY12 (n=166). The most frequent reason was *unable to contact family* (27%), followed by *youth/parent/custodian do not consent* (21%) and *referral/funding source rescinded referral* (15%). In all three circumstances, these youth were eligible for MST. Only 22% of youth did not start MST because they were deemed ineligible.

Figure 5. Reasons for Not Starting MST (of Youth who Did Not Start), FY12



**Category no longer an option as of September 2011.*

n=166

Further examination of cases in which youth/families did not start MST reveals several trends over time. For one, the percentage of referred youth who did not start MST slightly increased from 38% in FY11 to 40% in FY12. Second, a significantly smaller percentage of referrals were not accepted in FY12 because the youth/family was ineligible (22%) relative to FY11 (44%). Further, it is evident that youth and family unwillingness or unavailability to participate has been a predominant issue since FY10; in FY12, this cluster of reasons constituted 48% of youth/families who did not start. (Note: The reasons for not starting MST have been revised over time, so trends for specific reasons cannot be assessed.) Taken as a whole, these findings suggest that improved communication between MST providers and referral agencies has contributed to an increase of appropriate referrals; however, youth and family engagement to start treatment has continued to be an issue.

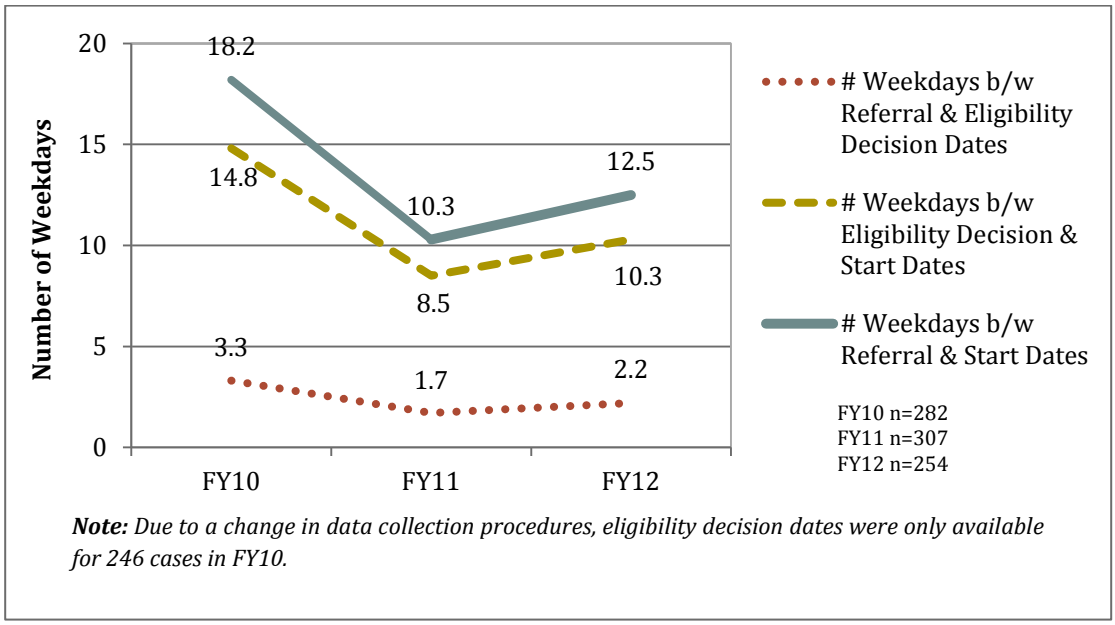
Admissions to MST

Initial Case Processing (Global Admission Length)

Once a youth is referred to MST, it is critical that an eligibility decision is made in a timely manner, and that treatment starts soon thereafter. MST providers report referral, eligibility decision, and start dates, so this process can be closely monitored. The number of days between the referral and start dates is referred to as the *global admission length*.

Global admission length increased slightly in the most recent year of reporting (Figure 6). In FY12, providers generally made an eligibility decision within two weekdays of receiving the referral, and youth typically started treatment within approximately two weeks (10 weekdays) of this decision. There were a number of statistical differences in the global admission length by subgroups of youth (see Table 4; only significant differences shown), as well as differences across agencies and jurisdictions (Appendix 1).

Figure 6. Global Admission Length, FY10-FY12



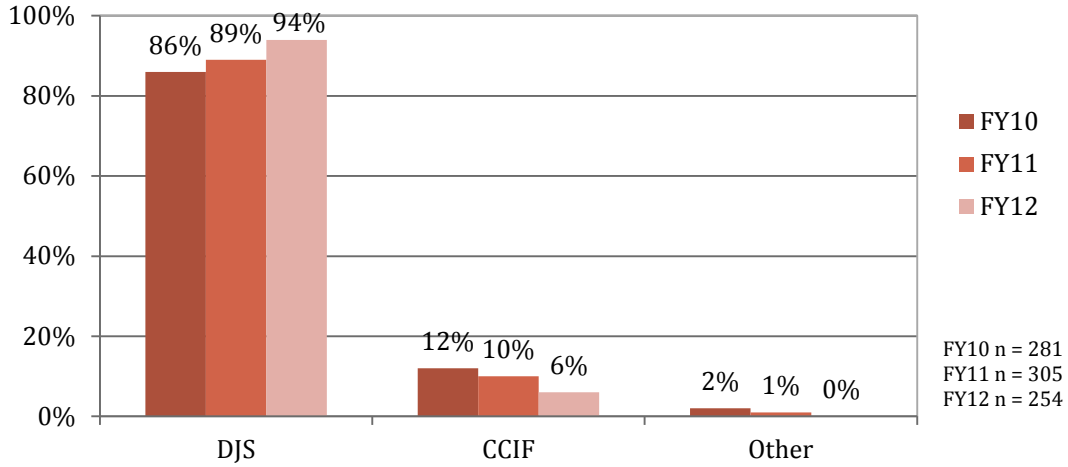
Note: *Due to a change in data collection procedures, eligibility decision dates were only available for 246 cases in FY10.*

Table 4. Statistically Significant Differences in Global Admission Length (GAL; days)		
Factor	**Shorter GAL**	**Longer GAL**
Gender	Male (10.6)	Female (19.2)
Prior Referrals to DJS	Yes (11.9)	No (26.5)
Funding Source	DJS (10.3)	GOC/CCIF (44.4)

Utilization

DJS has been the primary funding source for MST during the past few years; accordingly, the majority of youth admitted to MST in FY12 were funded by DJS (94%), followed by CCIF (6%, Figure 7).

Figure 7. MST Funding Sources, Percentage of Youth Admitted, FY10-FY12



Given the investment to make MST available to youth and families, it has been critical to all stakeholders that the available slots are utilized to their maximum capacity. MST utilization reflects the number of youth who are admitted to treatment, as well as the length of time that youth and families remain in

treatment (see page 15 for descriptive statistics related to length of stay), divided by the number of slots. Utilization is also impacted by the availability of therapists (e.g., if the therapist is out on leave or away for training, or a position vacancy). These factors are tracked closely during the year by providers and referral/funding sources to ensure that MST is reaching as many youth and families as possible.

In FY12, DJS and CCIF collectively funded a daily capacity of 112 MST slots across Maryland (Table 5). Of these slots, an average of 110 was 'active', or available to youth and families for treatment. The average daily population of youth served by MST was 85. Therefore, the average statewide utilization of funded slots was 76%, and utilization for 'active' slots was 77%. The remainder of this section describes the types of youth who participated in MST.

Table 5. MST Utilization, FY12

Average Number of Funded Slots (Daily)	112
Average Number of Active Slots (Daily)	110
Average Daily MST Population	85
Average Utilization of Funded Slots	76%
Average Utilization of Active Slots	77%

Characteristics of Admitted Youth

Overall, 254 youth were admitted to MST in FY12, a significant decrease from FY11 (n=307). The characteristics of youth admitted to MST were similar to those of the referral population. Most youth admitted to MST in FY12 were between the ages of 15 and 17 years old (81%; Figure 8), and their average age was 16.0 years old. The majority of youth were male (78%) and African American/Black (78%; Table 6).

The characteristics of youth admitted to MST have changed somewhat over time. A smaller proportion of African American/Black youth and a greater proportion of Caucasian/White youth were admitted in FY12 relative to FY10. Additionally, a greater proportion of females were admitted in FY12 (22%) as compared to FY10 (16%).

Figure 8. Ages of Youth Admitted by MST, FY12

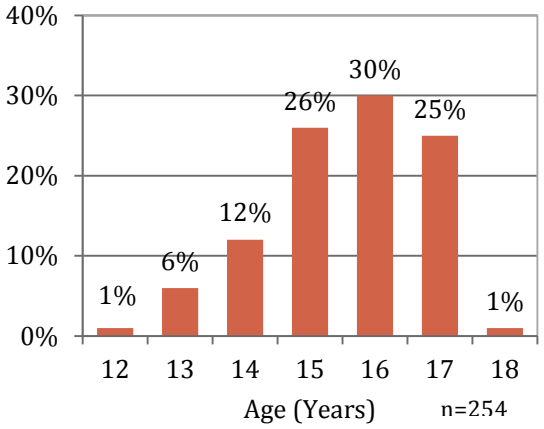


Table 6. Demographic Characteristics of Youth Admitted to MST, FY10- FY12

		FY10	FY11	FY12
	Total Number of Youth	282	307	254
Gender	Male	238 (84%)	247 (81%)	199 (78%)
	Female	44 (16%)	60 (20%)	55 (22%)
Race/Eth.	African American/Black	230 (82%)	235 (77%)	198 (78%)
	Caucasian/White	37 (13%)	55 (18%)	43 (17%)
	Hispanic/Latino	5 (2%)	11 (4%)	10 (4%)
	Other	9 (3%)	6 (2%)	3 (1%)
	Average Age (s.d.)	16.0 (1.2)	15.9 (1.2)	16.0 (1.2)

Involvement with DJS

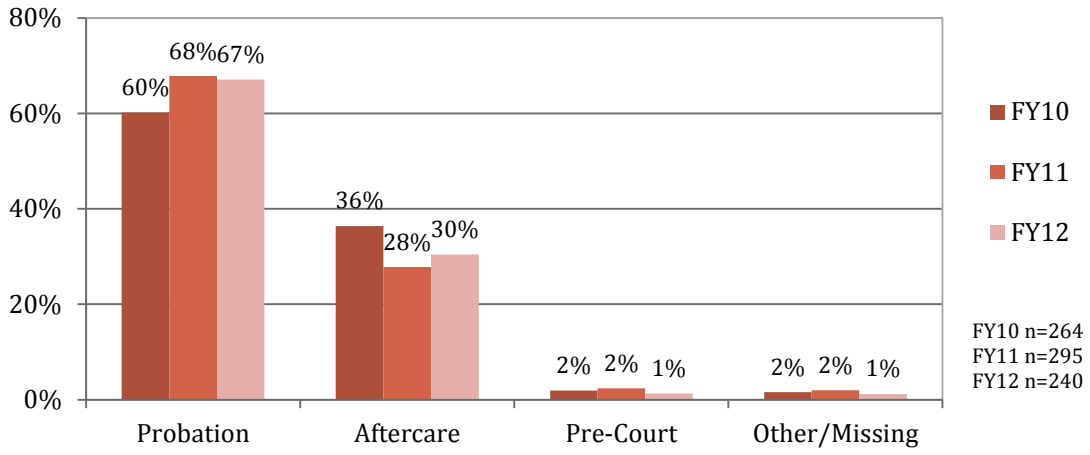
In FY12, 96% of youth admitted to MST had at least one prior referral to DJS, which is similar to youth admitted the previous two years (Table 7). Of those with previous DJS involvement, youth had, on average, five prior DJS referrals and their mean age at first referral was 13.7 years old. Twenty-eight percent of admitted youth had at least one prior commitment to DJS, and this subset of youth averaged 1.4 prior commitments.

Table 7. Prior DJS Involvement for Youth Admitted to MST, FY10-FY12

	FY10	FY11	FY12
Total Number of Youth	282	307	254
One or More Prior DJS Referrals	266 (94%)	295 (96%)	244 (96%)
Avg. # of Prior DJS Referrals (s.d.)	6.2 (4.5)	5.0 (3.5)	5.0 (3.5)
Avg. Age at First DJS Referral (s.d.)	13.3 (1.9)	13.6 (1.9)	13.7 (1.8)
One or More Prior DJS Commitments	83 (29%)	77 (25%)	70 (28%)
Avg. # of Prior DJS Commitments (s.d.)	1.5 (1.0)	1.3 (0.6)	1.4 (.7)

Ninety-four percent of the admitted youth had some form of active involvement with DJS (Figure 9). Of these, 67% were under probation supervision, 30% aftercare supervision (i.e., committed to DJS), 1% pre-court supervision, and 1% were under another form of supervision (e.g., administrative) or missing this information. Of youth under probation or aftercare supervision, 21% were involved with the Violence Prevention Initiative (VPI), a more intensive supervision program for youth who had previously been a perpetrator and/or victim of violence. Further, 20 youth (9% of youth under aftercare or probation supervision) had been released from a committed residential placement within 30 days of starting MST.

Figure 9. DJS Supervision for Youth Admitted to MST, FY10-FY12

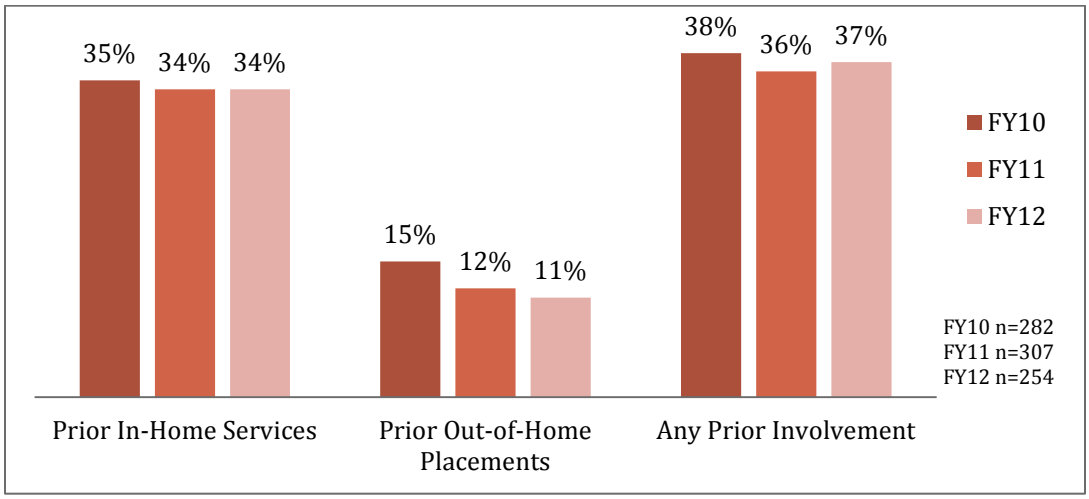


Involvement with DSS

Of the 254 youth admitted to MST in FY12, 93 (37%) had some form of prior contact with the child welfare system (Figure 10). Prior to being referred to MST, 29 youth (11%) had been placed out-of-home,

and 86 youth (34%) had received in-home services. On average, youth were 7.9 years old at the time of their first in-home service and 8.0 years old at the time of their first out-of-home placement.[3]

Figure 10. Prior Child Welfare Involvement FOR Youth Admitted to MST, FY10-FY12



Simple bivariate analyses were conducted to determine if youth who started MST differed from those who did not start. These findings are summarized in Figure 11. Notably, Caucasian/White youth were significantly more likely to start MST relative to youth of other races/ethnicities. Also note that rates of admission varied substantially by provider agency and jurisdiction; these figures can be found in Appendix 1.

Figure 11. Factors Related to Starting MST

Youth who started MST were statistically <u>more likely</u> to:

- ✓ Be Caucasian/White
- ✓ Have DJS funding for MST

Starting MST was not statistically related to:

- x Gender
- x Age at the time of referral to MST
- x Having one or more prior DJS referrals
- x Having one or more prior DJS commitments

MST Model Fidelity

The MST Quality Assurance System includes validated measures of clinical supervision practices and therapist adherence, and requires a number of procedures (e.g., family reports 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). This quality assurance system includes two measures, the *Therapist Adherence Measure-Revised (TAM-R)* and the *Supervisor Adherence Measure (SAM)*. Because not all MST sites are required to complete the SAM, scores will not be included and described in this report.

The *Therapist Adherence Measure-Revised (TAM-R)* is a 28-item questionnaire completed by the primary caregiver starting after the first two weeks of treatment, and then every fourth week until the end of treatment. The adherence score ranges from 0 to 1, with 1 representing the highest level of adherence. The <u>target</u> therapist adherence score is .61, which has been associated with good outcomes for families in previous clinical research.

[3] Average age at first in-home service is based on 85 cases; one case was excluded due to a negative age value.

In FY12, 979 TAM-R forms were completed and collected from 325 families, with an average adherence of .72 (Figure 12). Overall, 72% 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 FY10. 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 has been below the MST identified target of 100% for the past three years (Figure 13). That stated, TAM-R completion rates have improved from 84% in FY10 to 90% in FY12.

Figure 12. MST Average Therapist Adherence Score, FY10-FY12

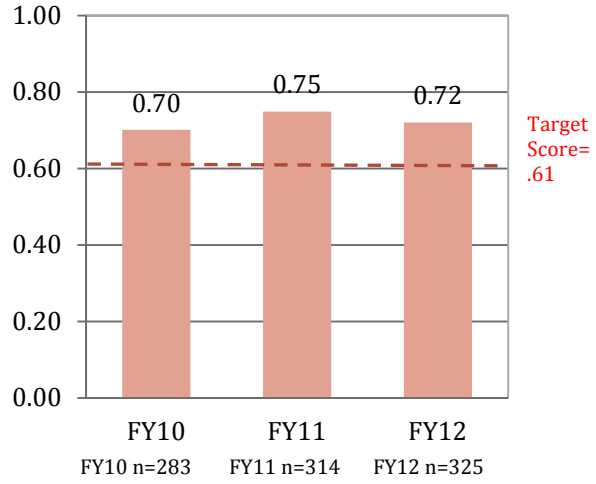
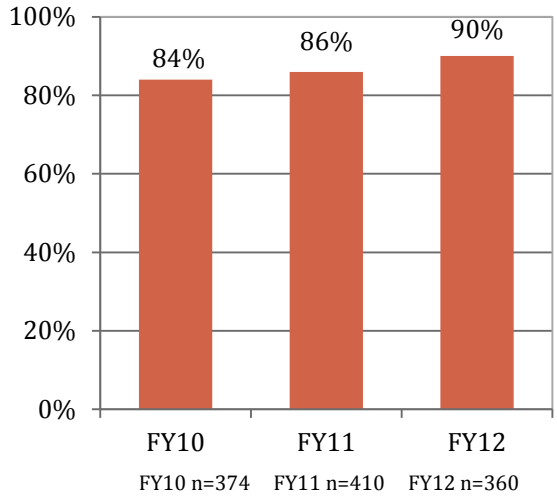


Figure 13. Percent of Families Completing at Least One TAM-R Form, FY10-FY12



MST Discharges & Outcomes

Of the 305 youth who discharged from MST in FY12, 272 (89%) had the *opportunity for a full course of treatment.* The remaining 11% of cases did *not have the opportunity for a full course of treatment*; note that these cases will not be included in subsequent analyses. The specific discharge reasons falling under each category are listed in Figure 14.

Figure 14. MST Discharge Reasons

Had the opportunity for a full course of treatment	Did not have the opportunity for a full course of treatment
➢ Completed treatment (i.e., case closed by mutual agreement) ➢ Lack of engagement ➢ Placed out of home for an event during treatment	➢ Youth/family moved ➢ Administrative reasons ➢ Youth placed for an event that occurred prior to treatment

Upon discharge from MST, each case is evaluated in three ways:

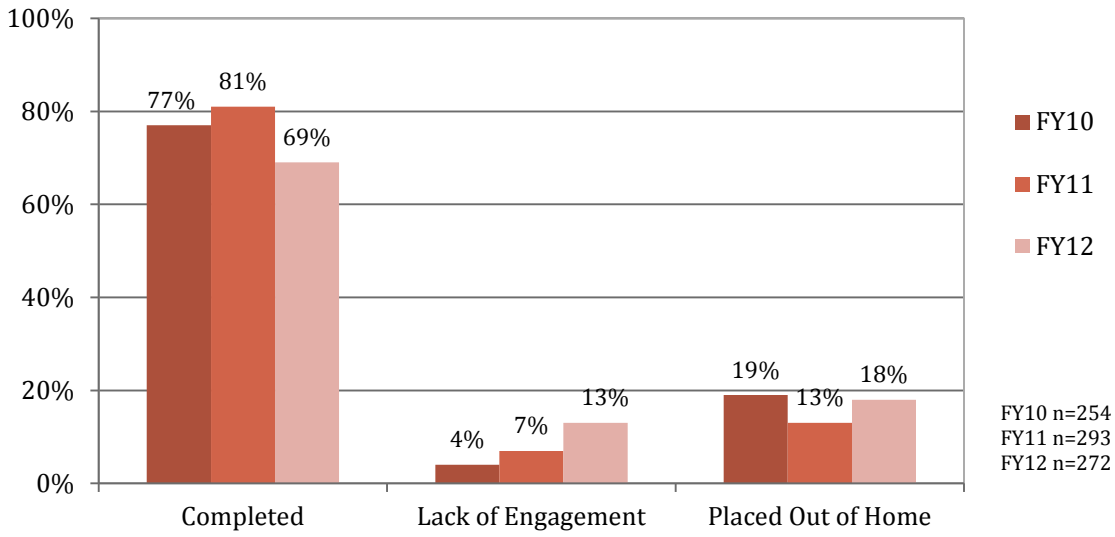
1. Did the youth and his/her family complete treatment (i.e., case progress)?
2. Were there sufficient changes in factors associated with problem behaviors (i.e., instrumental outcomes)?
3. How was the youth doing in three primary areas of functioning at discharge (i.e., ultimate outcomes)?

Each of these questions is addressed separately in this section.

Case Progress at Discharge

As shown in Figure 15, the majority of youth *completed* MST (69%, n=187), and this outcome has declined as compared with previous cohorts (77% in FY10 and 81% in FY11). Of those who did not complete treatment, 18% were *placed out of home for a new event during treatment* and 13% *had not engaged in treatment*.

Figure 15. Discharge Reasons for Youth Discharged from MST, FY10-FY12



Preliminary analyses reveal some significant differences between youth who completed MST and those who did not (of youth discharged with the opportunity for a full course of treatment; Figure 16). Notably, youth with prior commitments to DJS were less likely to complete MST (59% versus 72% for those with none), as were those with prior involvement with the child welfare system (59% versus 75% for those without involvement). There were also substantial variations by provider agency and jurisdiction (see Appendix 1).

Figure 16. Factors Related to Completing MST

Youth who completed MST were statistically <u>more likely</u> to:

- ✓ Be Caucasian/White
- ✓ Have no prior DJS commitments
- ✓ Have no prior DSS involvement
- ✓ Have a longer length of stay

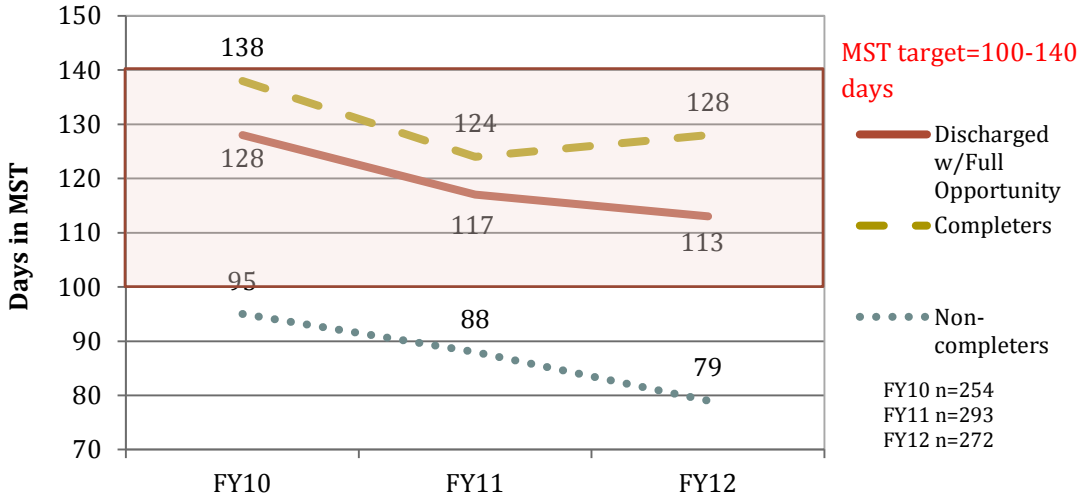
Completing MST was not statistically related to:

- x Gender
- x Age at admission
- x Prior referrals to DJS
- x Funding source
- x Global admission length

Length of Stay

The average length of stay (ALOS) in MST treatment was 113 days, which is well within the national purveyor's target of 100-140 days (Figure 17). The ALOS was significantly longer for youth who completed the program (128 days), as compared with those who did not complete (79 days). The ALOS has generally decreased over time, with the exception for completers.

Figure 17. Length of Stay in MST, FY10-FY12



The length of stay in MST treatment was related to a few youth characteristics (Table 8). Of those discharged with the opportunity for a full course of treatment, males and those with DJS funding for MST had significantly longer lengths of stay. Length of stay also varied substantially by agency and jurisdiction. Race/ethnicity, age at admission, prior DJS referrals, prior DJS commitments, and prior DSS involvement were not statistically related to length of stay.

Table 8. Statistically Significant Differences in Lengths of Stay (LOS; days)

Factor	Shorter LOS	Longer LOS
Gender	Females (102.1)	Males (116.2)
Funding Source	GOC/CCIF (87.4)	DJS (115.0)

Instrumental Outcomes at Discharge

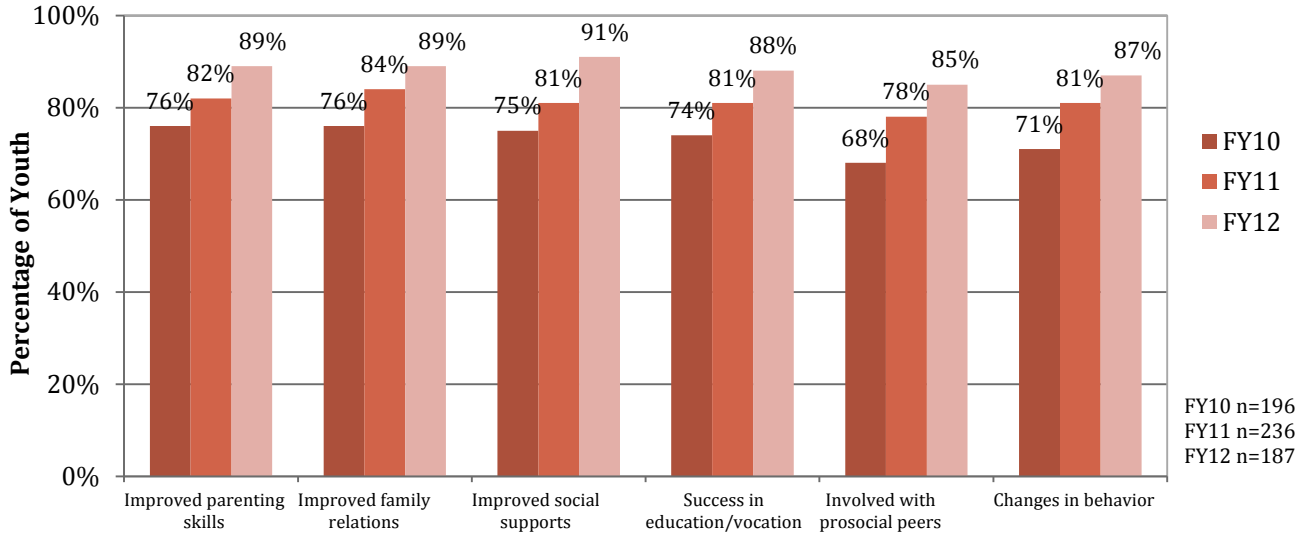
Even though most youth completed MST, it does not mean that the program was effective for everyone. Multisystemic Therapy Institute (MSTI) encourages the use of both instrumental and ultimate outcomes as a means to gauge the success of the program with each youth. Instrumental outcomes measure therapist-rated change in six target areas of treatment:

1) Primary caregiver(s) has improved the parenting skills necessary for handling subsequent problems;
2) Improved family relations related to drivers of the youth referral behavior;
3) Family has improved network of informal social supports in the community;
4) Youth is showing evidence of success in an educational or vocational setting;
5) Youth is involved with pro-social peers and activities and is minimally involved with problem peers; and
6) Changes in youth behavior and in the systems contributing to problems have been sustained for 3-4 weeks.

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 Expert consultant.

Figure 18 shows the instrumental outcomes for youth who completed MST in Maryland for the past three years. In general, these outcomes have shown marked improvement over time. In FY12, 85% or more of the youth had a positive indication for each of the instrumental outcomes.

Figure 18. Instrumental Outcomes for Youth who Completed MST, FY10-FY12



Ultimate Outcomes at Discharge

Three measures of success constitute the *ultimate outcomes* that are reported by providers at discharge: (1) whether the youth was living at home; (2) whether the youth was attending school (e.g., not truant) or vocational training or working, if of the legally appropriate age; and (3) whether the youth had been arrested for a new offense since treatment had started. Other indicators of success include post-discharge outcomes, which are discussed in the next section.

MSTI 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 (Table 9). 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.

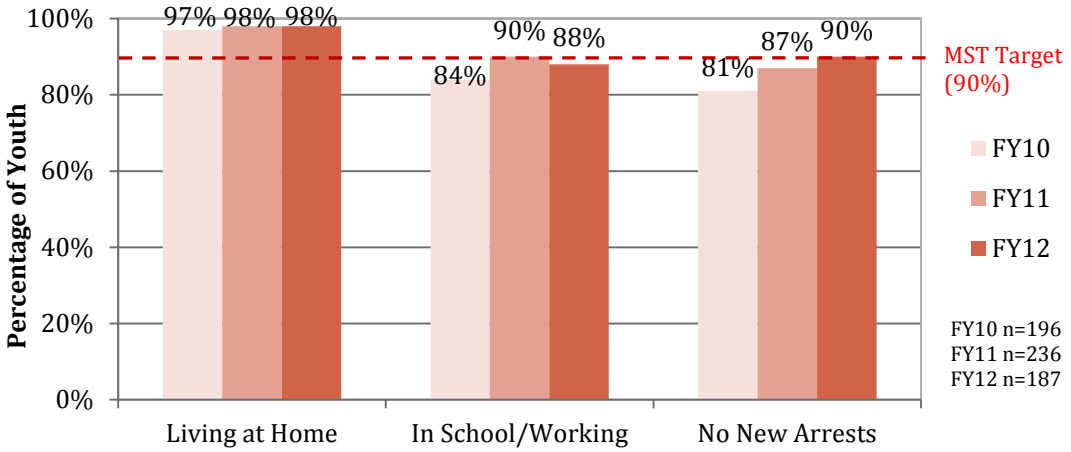
Table 9. MST Program Dashboard

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%

Figure 19 shows improving trends, and positive results overall, in the ultimate outcomes for youth who completed MST in Maryland from FY10 through FY12. In the most recent year, the percentages of youth living at home (98%), in school/working (88%), and with no new arrests (90%) fall within the target

zone of the MST Program Dashboard. Viewed together, 83% of youth who completed MST in FY12 had positive results for all three outcomes. Youth who were younger at admission were significantly more likely to achieve all three outcomes. Gender, race/ethnicity, previous involvement with DJS or DSS, and funding source were not statistically related to this successful outcome.

Figure 19. Ultimate Outcomes for Youth who Completed MST, FY10-FY12



DJS Involvement during Treatment

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, 28% of youth had been referred to DJS while receiving MST in FY12 (of youth who completed MST)—compared with the reported 10% who had new arrests upon discharge. In addition, DJS data show that 21% of youth were admitted to a DJS detention facility during treatment.

Longitudinal Outcomes

Subsequent Involvement with the Juvenile Justice System

Research has demonstrated that participation in MST is associated with a reduced risk for delinquency and criminal behavior. 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 and FY11, in order to identify matches in DJS's automated case management system (ASSIST). Subsequent involvement with the juvenile justice system during the follow-up period was categorized as referred to DJS, adjudicated delinquent, and committed to DJS (see the insert for definitions). Youth who had been placed in a secure residential facility (e.g., detention, Youth Center) as of discharge from MST were excluded from the analysis (five youth in FY10 and three youth in FY11).

Just over half of youth who completed MST in FY10 and FY11 had subsequent contact with DJS within one year of discharge (Figure 20). Of the 191 youth followed from FY10, 52% were referred to DJS, with 27% subsequently adjudicated delinquent, and 16% committed to DJS within the year. Of the 233 youth discharged in

DJS Involvement/Recidivism Measures

Referred to DJS refers to a referral to DJS for a delinquent offense.

Adjudicated delinquent refers to any youth who has a judiciary hearing and is adjudicated delinquent for an offense occurring post-discharge.

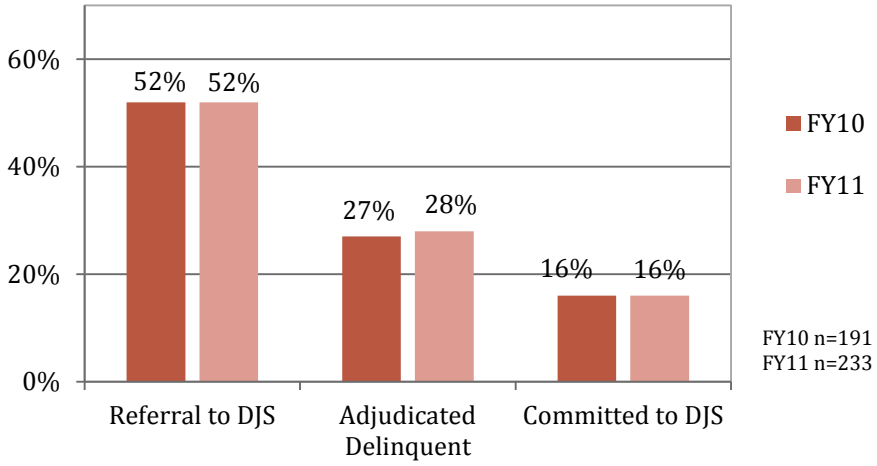
Committed to DJS refers to any youth who is committed to DJS custody for placement for an offense occurring post-discharge.

Note: Criminal justice system (adult) data were not available during the preparation of this report. These data have been requested and will be included in a future version.

FY11, 52% were referred to DJS (59, or 25%, for a felony offense), 28% were adjudicated delinquent, and 16% were committed during the one-year follow-up period.

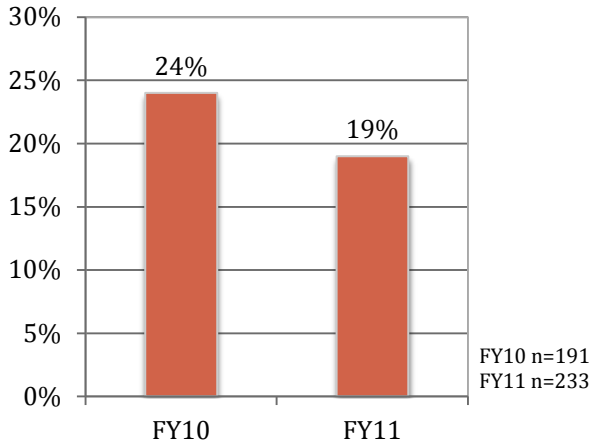
According to bivariate analyses using FY11 discharges, males and youth with prior DSS involvement were significantly more likely than their counterparts to be referred to DJS within one year post MST discharge. Race/ethnicity, age at admission, and prior DJS involvement were not related to having a subsequent DJS referral.

Figure 20. DJS Involvement within 12 Months Post-Discharge, Youth who Completed MST, FY10 & FY11



New Residential Placement with Juvenile Services. Youth who are committed to DJS do not need to commit a new offense and be 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 commitment (shown above). Conversely, not all commitment orders will result in the youth residing in an out-of-home placement. Of the 191 youth who completed MST in FY10, 24% were admitted to a residential placement[4] by DJS during the twelve months following discharge, compared with 19% of the 233 youth discharged in FY11 (Figure 21). The most frequent types of placements included Youth Centers, secure facilities, in-patient substance abuse programs, and group homes. Note that these percentages do not include youth who were residing in a secure facility at discharge from MST (see above).

Figure 21. New DJS Residential Placement within 12 Months Post-Discharge, Youth who Completed MST, FY10 & FY11



Subsequent Involvement with the Child Welfare System

The Institute also provided DHR with the names, dates of birth, and other demographic variables of all youth who were discharged prior to the last day of FY11. DHR researchers matched these youth in their state SACWIS (State Automated Child Welfare Information System) system known as CHESSIE (Children's

[4]Residential placements include places such as Youth Centers, group homes, residential treatment facilities, treatment foster care, etc. It does not include detention.

Electronic Social Services Information Exchange) to retrieve information about contact with the child welfare system post-MST discharge. As per DHR data, of the 196 youth discharged in FY10, only three (2%) were placed out-of-home, seven (4%) began receiving in-home services, and two (1%) had new DSS investigations within twelve months of discharge. Of the 236 youth discharged in FY11, two (1%) were placed out-of-home, six (3%) began receiving in-home services, and one (<1%) had a new investigation within twelve months of discharge from MST.

What MST has meant to families in Maryland: Miguel's Story

"Miguel" is a 15-year old Hispanic youth who was referred to MST by his middle school. Miguel's school made the referral because they were concerned that about his physically aggressive and disruptive behavior (to the extent that this mother pressed charges against him for assault), history of theft, and likely substance abuse. Miguel's mother speaks Spanish only but MST was able to provide a bilingual therapist. Working with Miguel and his mother, the MST therapist helped them to identify Miguel's disrespect of authority and negative peer group as being areas of need. Additionally, while his mother was a concerned and involved parent, she did not have the parenting skills, resources, or time to fully manage Miguel's behavior.

During the middle of the course of therapy, Miguel's therapist left the program and a new, non-bilingual therapist was assigned to the family. As a result, MST utilized a third-party interpreter for the sessions and, despite the challenges of having an interpreter and being newly-assigned to the family, the therapist was able to establish rapport with Miguel and his mother. The therapist helped his mother to improve her monitoring of and communication with Miguel. The work with Miguel focused on connecting him to positive peers and altering distorted cognitions about himself and others.

The therapist was able to complete a full course of MST therapy with all goals met. At the time of discharge, Miguel understood the importance of respecting the rights of others and was fully aware of the consequences of violations. He has been promoted to high school and has a goal of graduating. Miguel understands that he must utilize the support system for his success in academics. He also realizes he needs to be a role model for his little brother. Miguel's mother does not let her limited English comprehension stop her from being an involved parent and she welcomes the support that she has received. She is consistent with her discipline and understands the important of utilizing positive reinforcement to increase positive behaviors from her son.

FY12 MST Implementation in Maryland: Successes & Challenges

Utilization

1. A significantly smaller percentage of referrals were rejected in FY12 because the youth/family was ineligible, suggesting that referral sources are providing more appropriate referrals to MST providers.
2. The percentage of referred youth who started MST slightly declined in FY12, and the percent of youth who did not start is high—40%. Youth and family unwillingness or unavailability to participate was the reason provided for almost half of the youth who did not start. The referral sources and MST providers should work together to enhance family engagement. 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. African American/Black youth and their families were significantly less likely to start MST relative to Caucasian/White youth. Reasons for this result should be explored by providers and through evaluation efforts.
4. The average utilization rate for funded MST slots was 76%, and 77% for active slots. Although improving over the year, utilization continues to fall short of the 90% target for the state. Referral agencies and MST providers should continue frequent and consistent communication to track and maintain referral flow based on current openings and upcoming discharges.

Fidelity

5. TAM-R completion/collection has improved the past few years—90% of families had at least one TAM-R completed this past year. MST vendors should continue working closely with the MST Expert at The Institute to systematically carry out improved engagement strategies to better support the process, with a goal of attaining a 100% completion rate.
6. The average Therapist Adherence Score for MST therapists across Maryland (.72) continues to be well over the MST target score (.61), however, there is room for improvement. The Institute should continue to facilitate discussions between MST national consultants, MST providers, and referral agencies to improve implementation of MST in Maryland.
7. The average length of stay in MST treatment has remained well within the purveyor's target range.

Outcomes

8. The MST completion rate declined substantially in FY12 to just 69%. African American/Black youth were significantly less likely to complete treatment relative to Caucasian/White youth; reasons for these results should be explored.
9. There was a positive trend in all six instrumental outcomes this past year; 85% or more of all youth who completed MST had a positive indication in each of the six domains.
10. MST completers achieved the target zone on each of the ultimate outcomes (living at home, in school/working, and no new arrests at discharge), and 83% achieved success for all three of the outcomes as of discharge.
11. Involvement with DJS during the twelve months post-discharge has remained relatively stable among FY10 and FY11 completers, but referrals to DJS remain high. Fortunately, commitment rates are substantially lower; this finding was also similar for both cohorts. On the other hand, the percent of youth subsequently placed in a committed residential facility declined in FY12.

12. Very few youth who completed MST in FY11 (3%) had new involvement with DSS in the year following discharge.

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