MULTISYSTEMIC THERAPY IN MARYLAND: FY2016 IMPLEMENTATION REPORT

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Executive Summary

Multisystemic Therapy (MST) is an evidence-based practice chosen by Maryland's Children's Cabinet with the goals of providing empirically-supported community-based services that address key youth outcomes and reducing the use of costly out-of-home placements. Since 2007, The Institute for Innovation & Implementation has supported MST implementation in Maryland, providing technical assistance and data reporting to providers and stakeholders. The following report summarizes MST utilization, fidelity, outcomes, and costs across the State for fiscal year (FY) 2016.

Utilization

- MST was available in five jurisdictions throughout Maryland, with the Department of Juvenile Services (DJS), Children's Cabinet Interagency Fund (through a Local Management Board), and a local Department of Social Services (DSS) collectively funding 55 slots. Based on this capacity, Maryland could serve an estimated 165 youths in MST annually—a decline from the previous fiscal year (180).
- Only 47 MST slots were available for treatment on any given day (accounting for therapist vacancies) during FY16 due to one provider experiencing staff turnover.
    - ***Recommendation:*** *To reduce staff turnover and ensure fully staffed teams, efforts are underway to identify factors that contribute to retention and hiring issues. Currently, the Therapist Recruitment Toolkit is being reviewed and changes to the interview process are being recommended to hire therapists who are a better fit for MST.*
- The average utilization rate was 66% for funded slots and 78% for active slots. The active utilization rate increased from FY15 but continues to fall short of the 90% target.
    - ***Recommendation:*** *While staff retention problems led to a reduction in the use of active slots in some counties, assessment is still warranted to understand how to improve the utilization of active slots. The Institute and the MST Expert will work with referral sources and providers to assess current identification and referral protocols, as well as initial engagement practices, with a goal of ensuring effective protocols/ practices are in place that will optimize utilization.*
- 176 youths were referred to MST in FY16. Most referrals were made by the DJS (73%), the primary funder of MST in Maryland.
- Of youths referred, 66% started treatment, which was an increase from FY15 (55%) and FY14 (46%). The primary reasons youth did not start MST (n=53) were (1) *youth/parent/custodian not consenting to treatment* and (2) *youth was unavailable*.
    - ***Recommendation:*** *To increase parent consent for treatment, it is recommended that MST staff participate in treatment staffings so that the caregiver can meet the MST therapist and/or supervisor alongside the referring professional. This will improve collaboration and support for the family's participation in MST, and an overview of the MST treatment process can be provided to the parent by MST staff directly. When inclusion in staffings is not possible, efforts can be made by the MST provider to include the referring professional in the intake session either in person or via phone.*
- The global admission length increased in FY16 such that, on average, youth and families started treatment within 13 weekdays of being referred (as compared to 9 weekdays in FY15).
- During FY16, two of three providers used a waitlist due to the *program being at capacity* (50%) or a *staffing shortage* (49%), though a smaller number of youth overall were placed on the waitlist in FY16 (n=84) than FY15 (n=110). Over half of youth placed on the waitlist ultimately started MST (57%).

- Of the 121 youths who started MST, the majority was African American/Black (69%) and male (79%), and the average age was 15.7 years old. Most youth (96%) had been involved with DJS or DSS prior to starting MST. Youth who had prior involvement with DJS (87%) had considerable delinquency histories—on average, these youths had 5 prior complaints filed with DJS. In addition, 47% of youth had been previously involved with the child welfare system. Most DJS-involved youth were under probation or aftercare supervision when they started MST.
    - ***Recommendation:*** *Referring delinquent youth to MST earlier in their system involvement has clinical advantages, such as fewer barriers to caregiver engagement during treatment and potentially fewer pervasive antisocial peer relationships. It is recommended that the process and tools used by referral sources to identify youth eligible for MST be reviewed and possibly altered to ensure eligible youth are being referred as soon as there is evidence that MST could be beneficial for the youth and family.*

Fidelity

- The percentage of families with at least one completed Therapist Adherence Measure (TAM-R) form decreased to 83%; the target of 100% completion has not been met for the past three fiscal years.
    - ***Recommendation:*** *MST providers and Expert will evaluate the TAM-R collection methods and identify ways to increase the number of timely attempts to deliver paper TAM-R forms and to increase the use of Supervisor phone collection strategies.*
- Among families with at least one completed TAM-R, the average adherence score was .65, which is above the MST target score (.61), though lower than previous years.
- 59% of youth and families with completed TAM-R forms were treated by a therapist with an average adherence score above the .61 target.
- The average length of stay in MST (117 days) continues to fall well within the purveyor's target range (90-150 days).

Outcomes

- 106 youths were discharged from MST with the opportunity for a full course of treatment in FY16; of these, **75%** completed treatment—a slight decrease from the previous fiscal year (82%) and short of the 85% target.
    - ***Recommendation:*** *Factors that contributed to a decrease in treatment completion include challenges engaging caregivers and placements for probation violations. Strategies to improve engagement include more intensive therapist development and increased flexibility from therapists to meet whenever the family is available. As mentioned previously, one important strategy to increasing caregiver engagement is to make a referral to MST earlier in the youth's involvement in DJS/DSS.*
- More than 80% of youth who completed MST achieved positive results for each of the six instrumental outcomes. Additionally, 68% of youth who completed treatment showed positive results in <u>all</u> six outcomes.
- For the third time in the last three fiscal years, MST completers met or exceeded the 90% target for each of the ultimate outcomes, and 85% of youth who completed treatment achieved success for <u>all</u> three of the outcomes as of discharge. More specifically, of youth who completed MST in FY16, at the time of discharge: **98%** were living at home; **91%** were in school/working; and **92%** had no new arrests.
- Although the ultimate outcomes indicate that just 8% of completers had new arrests during treatment, data provided by DJS and DPSCS indicate that 20% of completers had been referred to DJS/arrested for a new felony or misdemeanor offense while receiving MST in FY16.
    - ***Recommendation:*** *MST staff review discharge information with DJS staff on a regular basis and it is not clear what is driving this discrepancy; further assessment is warranted.*

- Of youth who completed MST in FY15, as of one year post discharge: **65%** did not have a new DJS referral/ arrest; **88%** did not have a new adjudication/conviction; and **93%** had not been committed/incarcerated. Additionally, **84%** had not been placed in a new committed residential placement with DJS. Involvement with the juvenile and/or criminal justice systems during the 12 months post discharge improved slightly for FY15 completers (35%) compared to the FY13 and FY14 cohorts (42% and 38%, respectively). Over half of youth who completed MST in FY13 (58%) and FY14 (54%) were referred to DJS or arrested as adults within two years of discharge.
- The proportion of youth who completed MST and had new DSS involvement in the year following their discharge remains low (11% for FY15). Further, only 4% of FY13 completers and 13% of FY14 completers subsequently became involved with DSS within two years of discharge.

Costs

- The average cost of service delivery for providing MST in Maryland, including training, coaching, and implementation data monitoring in addition to provider costs, was $16,600 per youth.
- The average cost per treatment for MST was only 27% of the average cost per stay in treatment foster care and 26% of the average cost per stay in therapeutic group homes.

Introduction

Purpose of this Report

Multisystemic Therapy (MST) is a widely-recognized evidence-based practice (EBP) that is designed to help youth with behavior problems and implemented in their homes and community settings. In 2007, Maryland's Governor's Office for Children (GOC), on behalf of the Children's Cabinet, and the Department of Juvenile Services (DJS) worked collaboratively to increase the availability of MST to youth and families in Maryland. Maryland's stakeholders selected MST with the goals of improving outcomes for youth and families and serving youth in their homes, thereby reducing out-of-home placements.

The Institute for Innovation & Implementation (The Institute) collects and analyzes data to monitor and support MST implementation in Maryland, on behalf of DJS. This report provides a summary of MST implementation across the State as of fiscal year (FY) 2016. In addition to utilization and 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 acknowledges 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" (MST Services, 2015). 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 three to five months (Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009). 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 primary goals of MST include reducing anti-social behavior, and thereby risk of out-of-home placement, by improving youth and family functioning while maximizing community-based resources and supports. Ample research demonstrates 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). Figure 1 summarizes MST's ratings on four nationally-recognized EBP registries. For additional information on MST, please go to www.mstservices.com.

Figure 1. MST Ratings on National EBP Registries*

EBP Registry	MST Rating(s)
Blueprints for Healthy Youth Development www.blueprintsprograms.com	Model Plus Program
California Evidence-Based Clearinghouse for Child Welfare www.cebc4cw.org	1: Well-Supported by Research Evidence *(reviewed March 2015)*
SAMHSA's National Registry of Evidence-Based Programs & Practices (NREPP) www.nrepp.samhsa.gov	*Quality of Research** (reviewed March 2007):* Monetary benefit-to-cost advantage: 3.3† Post-treatment arrest rates: 2.9 Long-term arrest rates: 3.0 Long-term incarceration rates: 3.1 Self-reported criminal activity: 3.2 Alcohol and drug use: 3.0 Perceived family functioning-cohesion: 3.0 Peer aggression: 3.1 *Readiness for Dissemination** (reviewed March 2007):* Implementation Materials=4.0 Training & Support Resources=4.0 Quality Assurance Procedures=4.0 Overall Rating=4.0
Office of Juvenile Justice and Delinquency Prevention's Model Programs Guide www.ojjdp.gov/mpg	Effective Program

*Ratings as of March 2017. **The scales range from 0 to 4. †Reviewed April 2012.

MST Implementation Support

To ensure high-quality implementation, MST Services, the national MST purveyor, provides continual training and coaching to its providers. They also provide quality improvement support through the Multisystemic Therapy Institute (MSTI), using tools that assess adherence to the model of therapists, supervisors, experts, and organizations and quality assurance standards (e.g., performance targets), which are referenced throughout this report. As a MST Network Partner, The Institute utilizes MSTI's tools and guidance to support MST implementation across Maryland. In addition to monitoring MST utilization, fidelity, and outcomes, The Institute facilitates provider and stakeholder collaborative meetings and works with MST experts to ensure the most effective implementation of the model.

Assessing MST Utilization and Outcomes

The data presented in this report are drawn primarily from youth-level data routinely collected by Maryland MST providers. Additional data are provided by DJS, the Department of Public Safety and Correctional Services (DPSCS), and the Department of Human Resources (DHR). Taken together, these data fall into three main categories—utilization, fidelity, and outcomes.

- ***Utilization data*** include demographic information, delinquency history, child welfare system history, and details of 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.
- ***Fidelity data*** measure the degree to which MST has been delivered as intended by the program developers.[1]
- ***Outcomes data*** allow us to assess whether MST has achieved the desired results for youth and families (Figure 2). 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

[1] Fidelity data are collected through MSTI.

of particular interest in MST include reducing delinquent behaviors, reducing the frequency and number of days spent in out-of-home placements, and improving family functioning (Henggeler et al., 2009).

Figure 2. MST Outcomes 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
Post-Discharge Outcomes	➢ Involvement in the juvenile and/or criminal justice systems (e.g., DJS referral/arrest, adjudication/ conviction, and DJS commitment/incarceration) ➢ Involvement in the child welfare system (e.g., services and placements)	DJS DPSCS DHR

Descriptive and bivariate analyses (e.g., chi-square, t-test) are used to assess Statewide utilization, fidelity, and outcomes data from FY16. Where possible, data are presented and comparisons are drawn for previous fiscal years. Refer to Appendix 1 for FY16 descriptive data presented by funding source, provider, and jurisdiction.

Where was MST Offered in Maryland?

During FY16, MST was implemented in five jurisdictions[2] in Maryland, including Baltimore, Frederick, Montgomery, Prince George's, and Washington Counties. Three providers—Community Counseling & Mentoring Services, Inc., Community Solutions Inc., and Way Station, Inc.—administered MST for an estimated annual capacity to serve 165 youths;[3] this represents a reduction in capacity from FY15 (180 youths). Across the State, MST was funded by DJS, a local Department of Social Services (DSS), and the Children's Cabinet Interagency Fund (CCIF; via a Local Management Board); funding sources varied by jurisdiction (Figures 3, 4).

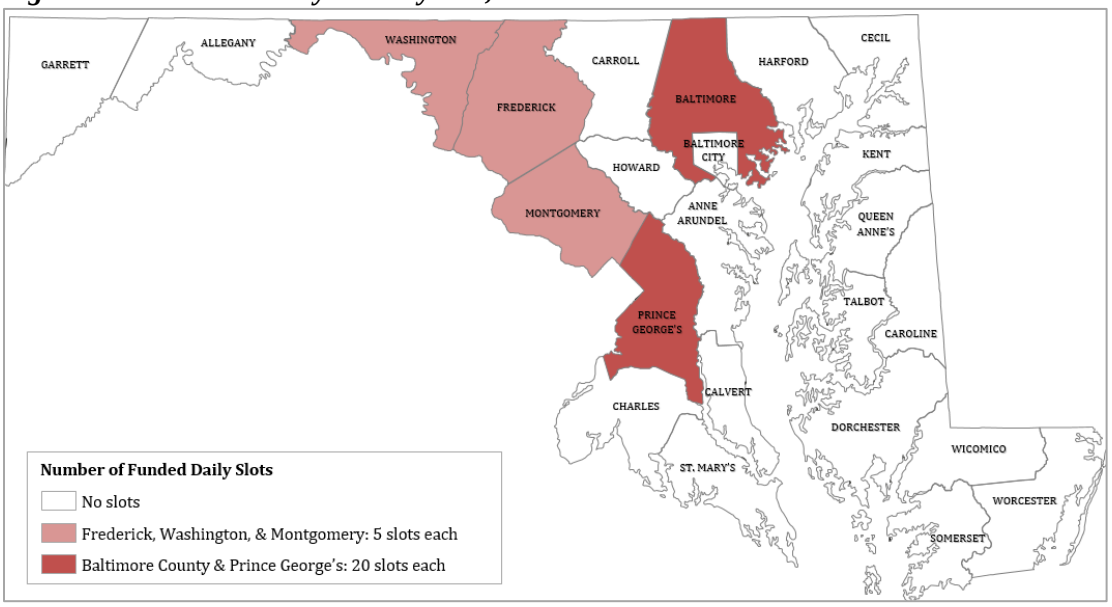
Figure 3. MST Provision & Funding Sources in Maryland, FY16

Region (DJS)	Jurisdiction(s) Served	Provider	Funding Source	# Funded Daily Slots
Central	Baltimore County	Community Solutions Inc.	DJS DSS	15 5
Metro	Montgomery	Community Counseling & Mentoring Services, Inc.	DJS	5
	Prince George's	Community Counseling & Mentoring Services, Inc.	DJS CCIF-LMB	15 5
Western	Frederick, Washington	Way Station, Inc.	DJS	10

[2] Jurisdictions in Maryland refer to all Counties as well as Baltimore City.

[3] The estimated annual capacity is based on the average number of slots funded by DJS, DSS and CCIF during FY16 (n=55). It assumes that each youth will remain in MST for an average length of stay of 120 days (the targeted range is 90 to 150 days), and that three youths can be served in each slot during the year.

Figure 4. MST Availability in Maryland, FY16



Referrals to MST

Although capacity only declined by five slots in FY16, there was a notable decline in the number of referrals to MST from FY15 (n=227) to FY16 (n=176; Figure 5).

Maryland youth may be referred to MST from a variety of sources. In FY16, the majority of the 176 referrals were made by DJS (73%), followed by DSS (19%), mental health agencies (3%), and other sources (5%; Figure 6).[4] DJS has been the principal referral source in Maryland for several years.

Figure 5. Number of Referrals to MST, FY14-FY16

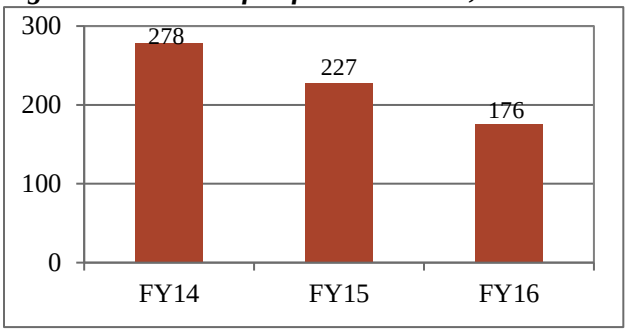
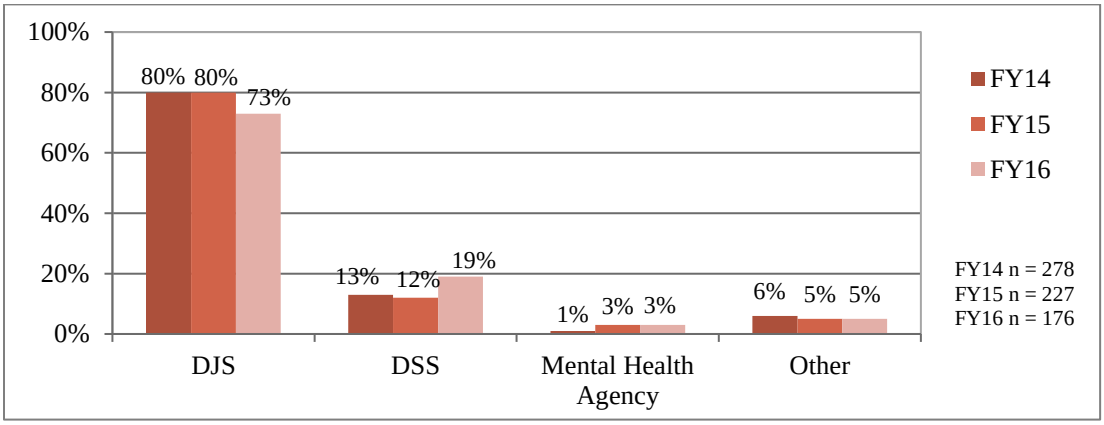


Figure 6. MST Referral Sources, Percent of Total Youth Referred, FY14-FY16



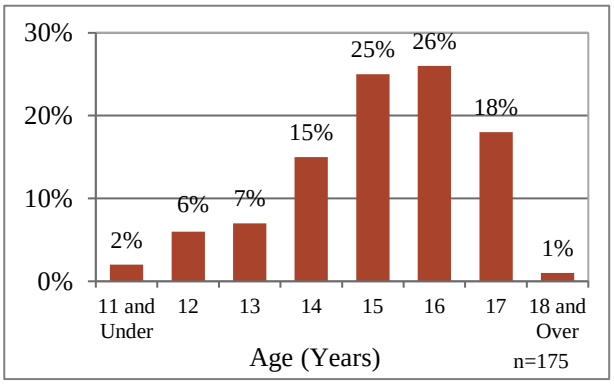
[4] Other sources include schools, parents/families, hospitals, and courts.

Characteristics of Referred Youth

MST can serve male and female youth from diverse racial and ethnic backgrounds between the ages of 12 and 17 years old. In FY16, nearly all (97%) referred youth met the age criteria, with 51% ages 15 or 16 (Figure 7).

The demographic characteristics of referred youth have remained relatively stable over the past three fiscal years. In the most recent year, 75% of youth were male and 69% were African American/Black. The average age at referral was 15.6 years old (Figure 8).

Figure 7. Ages, Percent of Youth Referred to MST, FY16*



*Age was not reported for one case referred in FY16.

Figure 8. Demographic Characteristics of Youth Referred to MST, FY14-FY16

	FY14	FY15	FY16*
Total Number of Youth	278	227	175
Male	69%	74%	75%
Female	31%	26%	25%
African American/Black	68%	70%	69%
Caucasian/White	17%	17%	13%
Hispanic/Latino	14%	9%	11%
Other	1%	4%	7%
Average Age (s.d.)	15.5 (1.4)	15.6 (1.4)	15.6 (1.5)

*Characteristics were not reported for one case referred in FY16.

Referred Youth Who Did Not Start MST

Not all youth referred to MST start treatment (i.e., had a first visit, treatment consent is signed by the family). 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 choose not to start for another reason. Thirty percent (30%) of youth referred in FY16 did not start MST (Figure 9); this represents an improvement over FY15, when nearly half (45%) of referred youth did not start treatment. Forty percent (40%; n=21) of the 53 youths who did not start MST in FY16 were not eligible for treatment (Figure 10). This also represents a shift from the previous fiscal year, when only 28% of youth who did not start were deemed ineligible for treatment.

Figure 9. Percent of Referred Youth Who Started MST, FY14-FY16

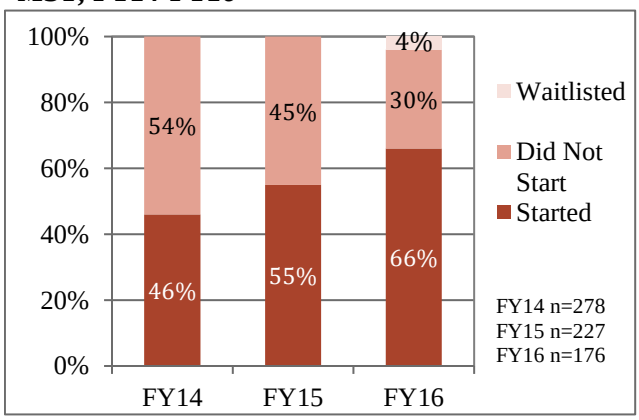
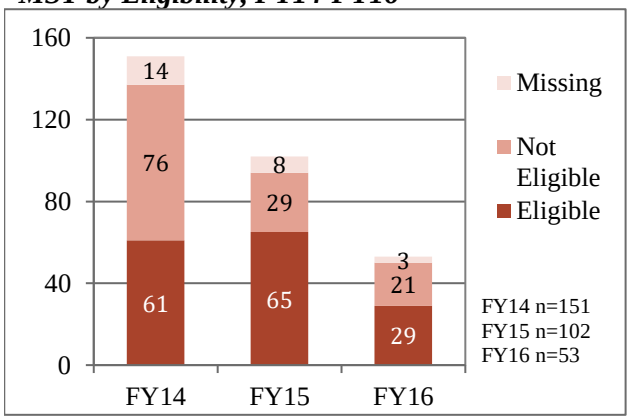
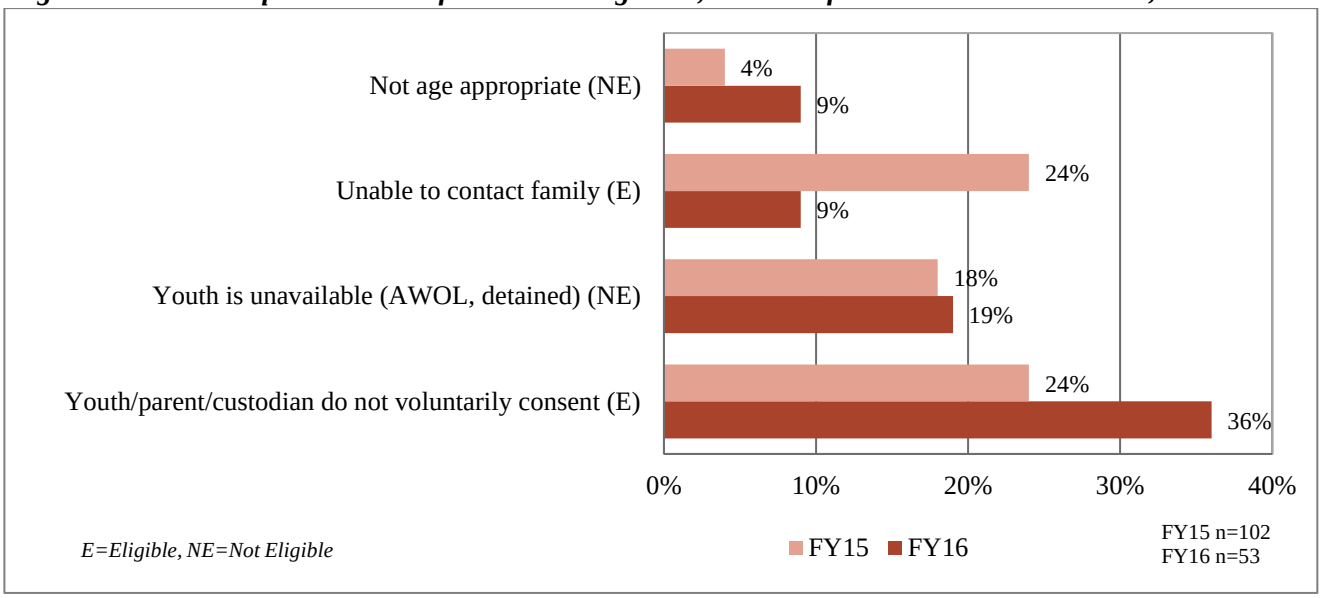


Figure 10. Number of Youth Who Did Not Start MST by Eligibility, FY14-FY16



The reasons for not starting MST 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 11 shows the most frequent reasons that youth did not start MST in FY15 and FY16. *Youth/parent/custodian did not voluntarily consent* accounted for one-third (36%) of cases in FY16 (compared to 24% in FY15). The next most frequently selected reasons were *youth is unavailable* (19%), *unable to contact family* (9%), and youth is *not age appropriate* (9%).

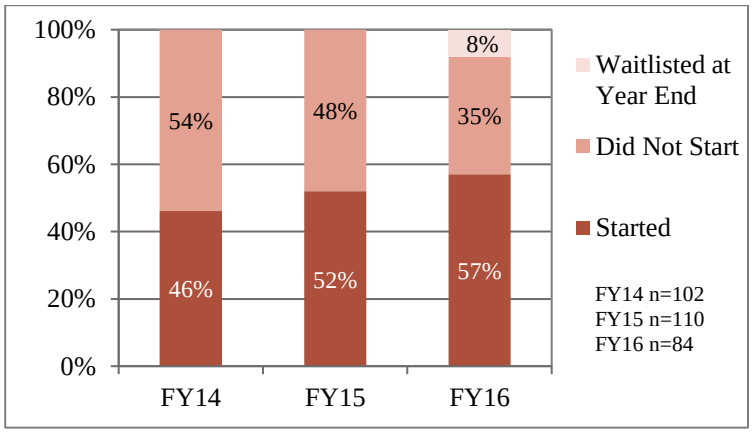
Figure 11. Most Frequent Reasons for Not Starting MST, Percent of Youth Who Did Not Start, FY15-FY16



Waitlisted Youth

Two of the three MST providers utilized a waitlist in FY16, collectively placing 84 youths on the waitlist (48% of all referrals, which is similar to FY15). The percentage of youth who were placed on the waitlist and ultimately did not start MST decreased, from 48% in FY15 to 35% in FY16 (though some cases were still on the waitlist at the close of the year; Figure 12). Half (50%) of the FY16 waitlist placements resulted from the *program being at capacity*, and 49% resulted from a *staffing shortage*.

Figure 12. Percent of Waitlisted Youth Who Started MST, FY14-FY16



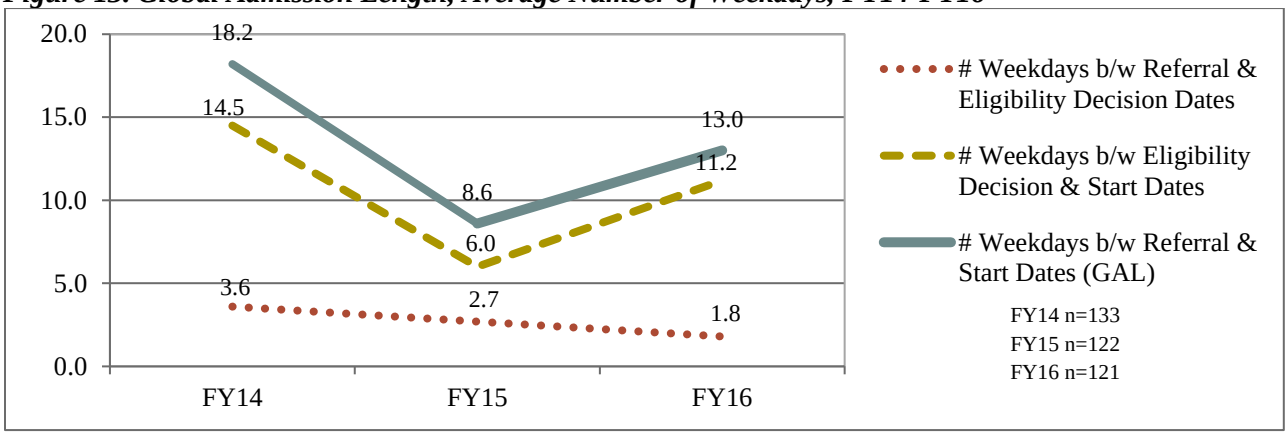
Youth Who Started MST

Global Admission Length (Initial Case Processing)

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*.

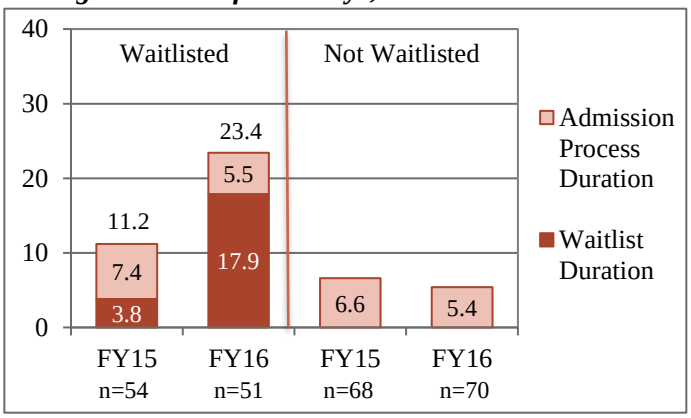
The average global admission length increased from approximately 9 weekdays in FY15 to 13 weekdays in FY16 (Figure 13). Providers generally made an eligibility decision within 2 weekdays of receiving the referral in FY16 (compared to 3 weekdays in FY15), but there was a substantial increase in the amount of time between the eligibility decision and the start of treatment, from 6 weekdays in FY15 to approximately 11 weekdays in FY16.

Figure 13. Global Admission Length, Average Number of Weekdays, FY14-FY16



Among the 121 youths who started MST in FY16, 51 (42%) were temporarily placed on the waitlist. As shown in Figure 14, waitlisted youth took an average of 23 weekdays to enter treatment, while non-waitlisted youth took an average of 5 weekdays. While the overall Admission Process Duration decreased, the Waitlist Duration more than quadrupled.

Figure 14. Global Admission Length by Waitlist Status, Average Number of Weekdays, FY15-FY16

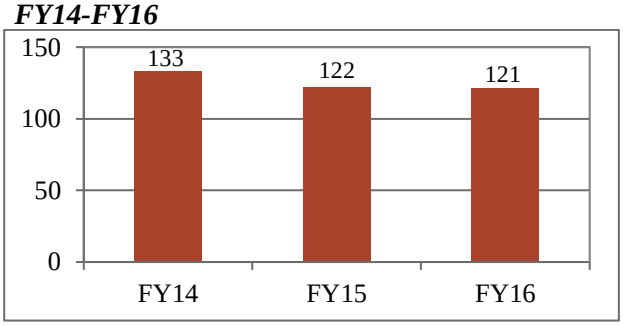


Consistent with the previous discussion, youth placed on the waitlist experienced a statistically significant delay in the start of services compared to non-waitlisted youth. Global admission lengths did not vary significantly by characteristics of youth (i.e., race/ethnicity, gender, or age). However, there was a statistically significant difference in global admission length by funding source. Whereas, DJS-funded cases took approximately 8 days on average to start services, DSS-funded cases took 17 days and CCIF/LMB-funded cases took 47 days.

Utilization

A total of 121 youths started MST in FY16. As shown in Figure 15, this is comparable to FY15 (n=122).

Figure 15. Number of Youth Who Started MST, FY14-FY16

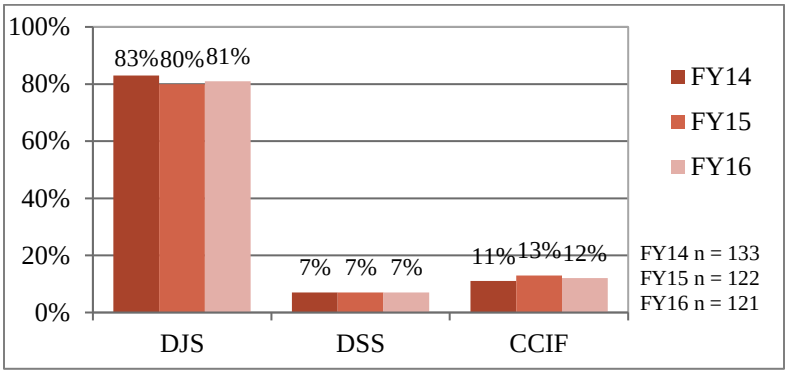


DJS has been the primary funding source in Maryland for MST for the past several years; accordingly, most youth who started MST in FY16 were funded by DJS (81%), followed by CCIF (12%) and DSS (7%; Figure 16).

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 youth and their families remain in treatment (see page 15 for descriptive statistics related to length of stay), divided by the number of slots. Utilization is calculated based on funding capacity (i.e., funded slots) and actual capacity (i.e., active slots), which accounts for the availability of therapists (e.g., if the therapist is out on extended leave or a position is vacant). 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.

Figure 16. MST Funding Sources, Percent of Youth Who Started, FY14-FY16



In FY16, DJS, CCIF, and DSS collectively funded a daily capacity of 55 MST slots across Maryland (Figure 17). On average, 46.7 of these slots were "active", or available to youth and families for treatment. The average daily census of youth served by MST was 36.3; thus, on average, 66% of funded slots, or 78% of active slots, were utilized. This represents a slight decrease in utilization of funded slots, but an increase in utilization of active slots, compared to FY15 (68% and 71%, respectively).

Figure 17. MST Utilization, FY14-FY16

	FY14	FY15	FY16
Avg. Number of Funded Slots	60	60	55
Avg. Number of Active Slots	57.8	58.0	46.7
Avg. Daily Census	46.3	41.0	36.3
Avg. Utilization of Funded Slots	77%	68%	66%
Avg. Utilization of Active Slots	80%	71%	78%

Characteristics of Youth Who Started MST

Over half of the youth who started MST in FY16 were 15 or 16 years old (60%; Figure 18), and the average age was 15.7 years old. The majority of youth were male (79%) and African American/Black (69%; Figure 19). The characteristics of youth who started MST have changed somewhat over time. A greater proportion of these youth were African American/Black and a smaller proportion were Caucasian/White in FY16 relative to FY14. And females comprised a slightly smaller proportion of youth who started in FY16 than in the previous fiscal years.

Figure 18. Ages of Youth Participants, Percent of Youth Who Started MST, FY16

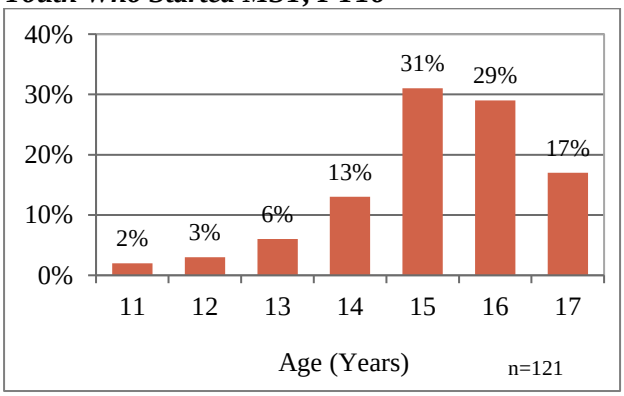
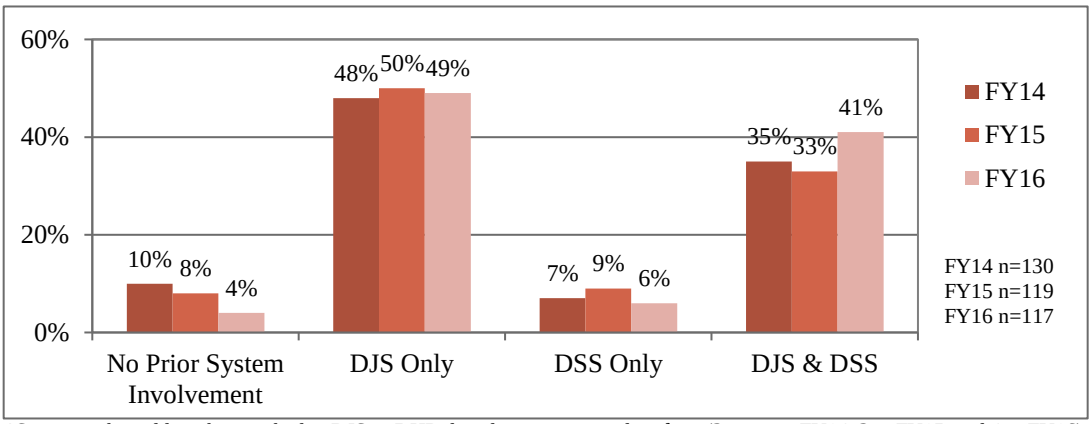


Figure 19. Demographic Characteristics of Youth Who Started MST, FY14-FY16

	FY14	FY15	FY16
Total Number of Youth	133	122	121
Male	71%	74%	79%
Female	29%	26%	21%
African American/Black	59%	71%	69%
Caucasian/White	26%	15%	11%
Hispanic/Latino	12%	12%	13%
Other	2%	3%	7%
Average Age (s.d.)	15.6 (1.2)	15.6 (1.3)	15.7 (1.4)

The majority (96%) of youth who started MST in FY16 were previously or currently involved with DJS and/or DSS. Forty-one percent (41%) had some form of previous involvement with both systems prior to treatment (Figure 20); this proportion has increased since FY15 when 33% of youth had prior involvement with both DJS and DSS.

Figure 20. Prior DJS and DSS Involvement, Percent of Youth Who Started MST, FY14-FY16*



*Some youth could not be matched to DJS or DHR data due to missing identifiers (3 cases in FY14, 3 in FY15, and 4 in FY16); it is possible the additional youths were involved with DJS and/or DSS.

Involvement with the Juvenile Justice System

In FY16, 87% of youth who started MST had at least one prior complaint filed with DJS (Figure 21); this represents an increase from previous years. Of those with previous DJS involvement, youth had, on average, 5 prior complaints, and their average age at first complaint was 13.8 years old. Twenty-four percent (24%) of youth had at least one prior committed residential placement with DJS, and this subset of youth averaged 1.8 prior placements.

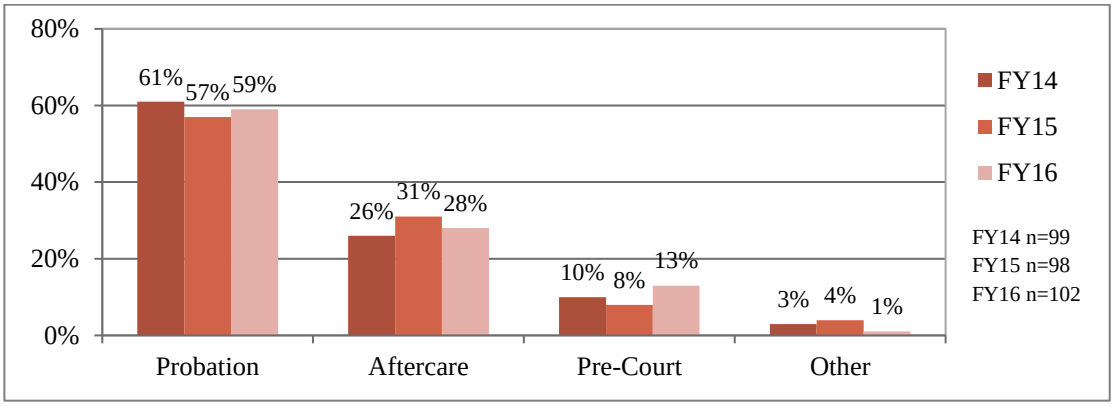
Figure 21. Prior DJS Involvement, Youth Who Started MST, FY14-FY16

	FY14	FY15	FY16
Total Number of Youth	133	122	121
Any Prior DJS Complaints	83%	82%	87%
Avg. # of Prior DJS Complaints (s.d.)	5.2 (4.5)	4.8 (3.6)	4.9 (3.7)
Avg. Age at First DJS Complaint (s.d.)	13.7 (1.7)	13.7 (1.9)	13.8 (1.7)
Any Prior DJS Committed Residential Placements	17%	24%	24%
Avg. # of Prior DJS Committed Residential Placements (s.d.)	1.5 (0.7)	1.5 (0.7)	1.8 (1.0)

Eighty-four percent (84%) of youth were actively involved with DJS when they started MST—a larger share than the prior two fiscal years (74% in FY14; 80% in FY15). The type of DJS involvement/supervision has remained similar over time (Figure 22). In the most recent reporting year, 59% of these youths were under probation, 28% aftercare (i.e., committed to DJS), 13% pre-court, and 1% other supervision.[5] Of youth under probation or aftercare supervision, 11% were also involved, at some point during treatment, 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, 22 youths (25% of youth under aftercare or probation supervision) had been released from a committed residential placement within 30 days of starting MST.

[5] Pre-Court supervision occurs at intake when a youth and his/her family enter an agreement with DJS to undergo counseling and/or informal DJS supervision without the involvement of the court. "Other" is largely comprised of youth under administrative supervision; these youths are often transitioned into probation or aftercare supervision.

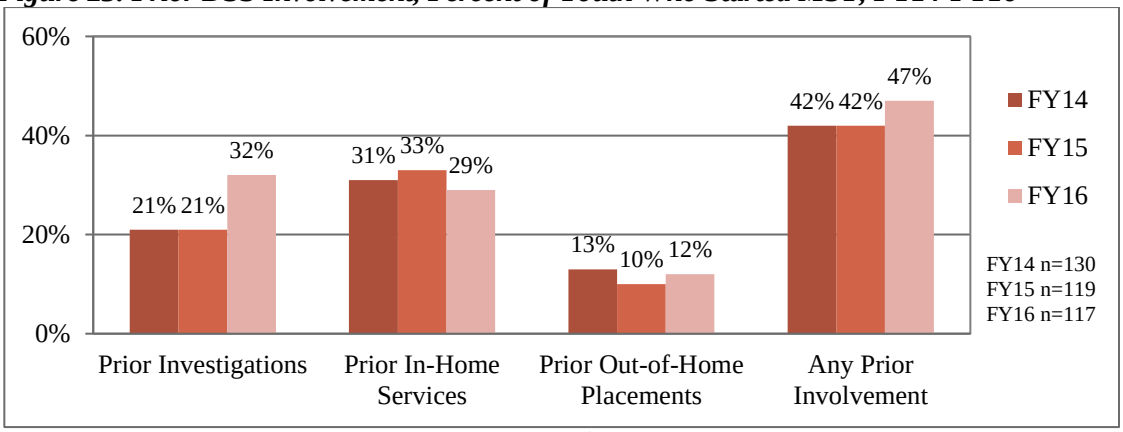
Figure 22. DJS Supervision Type, Percent of DJS-Involved Youth Who Started MST, FY14-FY16



Involvement with the Child Welfare System

Of youth who started MST in FY16, 55 (47%) had some form of prior contact with DSS (Figure 23). Prior to being referred to MST, 37 youths (32%) were part of a prior DSS investigation[6], 34 youths (29%) had received in-home services, and 14 youths (12%) had been placed out of home. On average, youth were 8.5 years old at the time of their first in-home service and 9.1 years old at the time of their first out-of-home placement.

Figure 23. Prior DSS Involvement, Percent of Youth Who Started MST, FY14-FY16*



*Some youth could not be matched to DHR data due to missing identifiers (3 cases in FY14, 3 in FY15, and 4 in FY16); it is possible the additional youths were involved with DSS.

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 24. Notably, youths with no prior DSS involvement were significantly more likely to start treatment (82% vs. 60%). Further, youths with CCIF (82%) or DJS (73%) funding were more likely to start relative to those with funding through DSS (36%). Also, rates of starting MST varied substantially by provider agency and jurisdiction; these data can be found in Appendix 1.

Figure 24. Factors Related to Youth Starting MST in FY16

Characteristics of youth who were <u>more likely</u> to start MST:

- ✓ Race/Ethnicity (African American/Black, Other)
- ✓ <u>No</u> prior DSS involvement
- ✓ Funding source (CCIF-LMB, DJS)

<u>Not</u> statistically related to starting MST:

- x Gender
- x Age at the time of referral
- x Prior DJS complaints
- x Prior DJS committed residential placements
- x Placed on the waitlist

[6] DSS investigations include cases that were indicated or unsubstantiated; because unsubstantiated cases can be expunged after 5 years, the number of investigations reported in this analysis may be under-counted.

MST Model Fidelity

The MST Quality Assurance System includes validated measures of clinical supervision practices and therapist adherence (e.g., family reports about treatment, therapist ratings of supervisors, etc.) to verify that fidelity to the MST model is maintained over the course of treatment (Henggeler, Schoenwald, Liao, Letourneau, & Edwards, 2002; Schoenwald, 2008). Specifically, this quality assurance system includes two measures, the *Therapist Adherence Measure-Revised (TAM-R)* and the *Supervisor Adherence Measure (SAM)*. The Institute regularly compiles and reports TAM-R data.

The 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 target therapist adherence score is .61, which has been associated with good outcomes for families in clinical research.

MST teams are expected to collect at least one TAM-R for 100% of families served. This target has not been met for the past three fiscal years, and TAM-R completion rates decreased from 93% in FY14 to 83% in FY16 (Figure 25). In FY16, a total of 347 TAM-R forms were completed and collected from 122 families, with an average adherence score of .65 (Figure 26). Fewer than two-thirds (59%) of the families with completed TAM-R forms in FY16 were served by a therapist who met or exceeded the target therapist adherence score of .61 (compared to 80% in FY14 and 77% in FY15). Although therapist adherence scores have remained above the target threshold for many years, these results should be interpreted with caution since the TAM-R is not being completed for all families.

Figure 25. Percent of Families Completing at Least One TAM-R Form, FY14-FY16

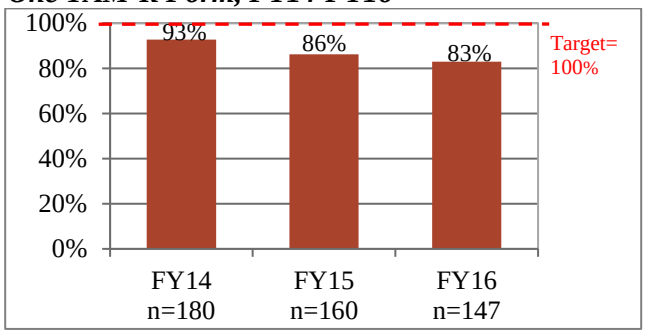
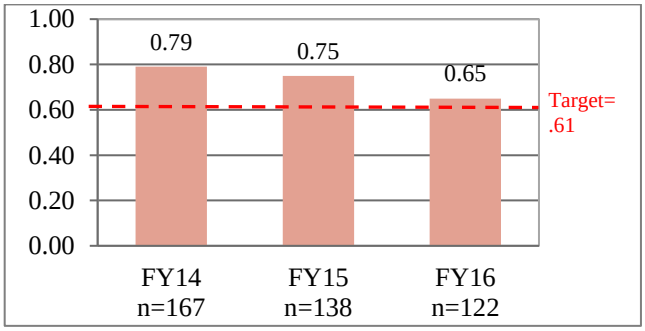


Figure 26. Average Therapist Adherence Score, FY14-FY16



MST Discharges & Outcomes

Of the 114 youths who were discharged from MST in FY16, 106 (93%) had the *opportunity for a full course of treatment.*[7] The remaining 7% of cases did *not have the opportunity for a full course of treatment* (note that these cases are not included in subsequent analyses).[8]

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.

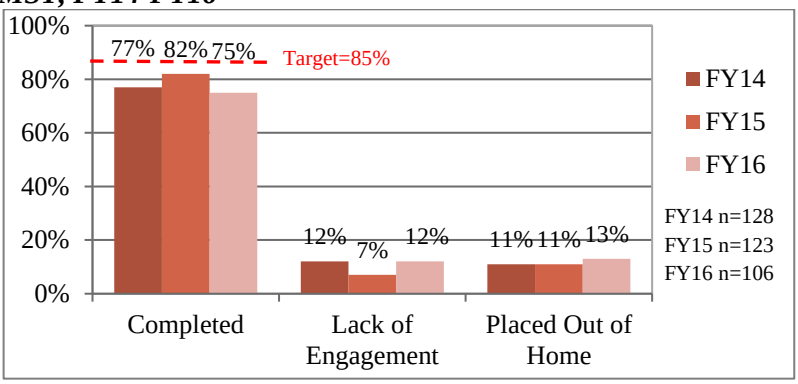
[7] Discharge reasons for youth classified as *having the opportunity for a full course of treatment* include: completion (i.e., case closed by mutual agreement), lack of engagement, and placed out of home for an event during treatment.

[8] Discharge reasons for youth classified as *not having the opportunity for the full course of treatment* include: youth/family moved, administrative reasons, and youth placed for an event that occurred prior to treatment. Of the 8 youths who did not have the opportunity for a full course of treatment in FY16, 4 were administratively removed or withdrawn by the MST program, 3 moved, and 1 was removed by the funding/referral source.

Case Progress at Discharge

As shown in Figure 27, most youth *completed* MST (75%, n=79), though the completion rate has been below the 85% target for the past few years. Thirteen percent (13%) of youth discharged because they were *placed out of home* and 12% *had not engaged in treatment*; both outcomes exceed their respective MST target rates (10% and 5%, respectively).

Figure 27. Discharge Reasons, Percent of Youth Discharged from MST, FY14-FY16

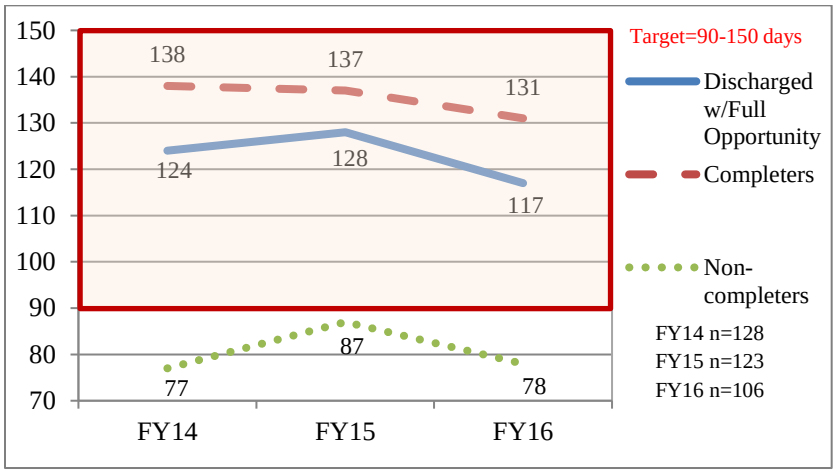


Bivariate analyses revealed that demographic characteristics of youth, including age, gender, and race/ethnicity, having been placed on the waitlist, as well as their prior involvement with the juvenile justice and child welfare systems were not significantly related to program completion. Variations by provider agency and jurisdiction can be found in Appendix 1.

Length of Stay

The average length of stay (ALOS) in MST treatment was 117 days, which is well within the national purveyor's target of 90 to 150 days (Figure 28). The ALOS was significantly longer for youth who completed treatment (131 days) as compared to those who did not complete treatment (78 days).

Figure 28. Length of Stay in MST, Average Number of Days, FY14-FY16



Length of stay for youth discharged with the opportunity for the full course of MST in FY16 did not vary significantly by youth's age, gender, race/ethnicity, or having prior DJS or DSS involvement. Variations by provider agency and jurisdiction can be found in Appendix 1.

Instrumental Outcomes at Discharge

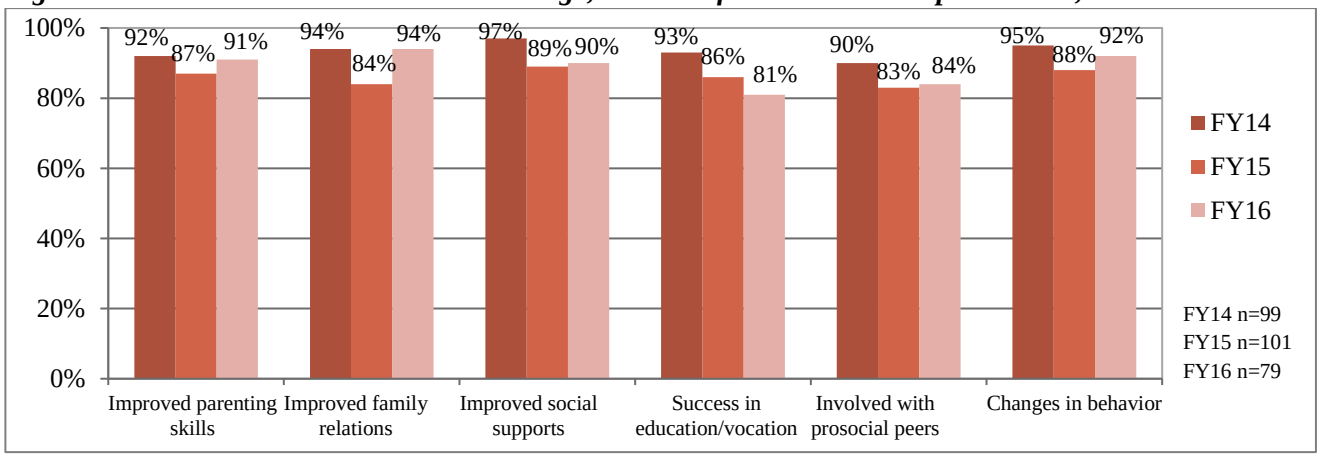
Even though most youth completed MST, the program's level of effectiveness could vary across youth. MSTI encourages the use of both instrumental and ultimate outcomes to gauge the success of the program with each youth. Instrumental outcomes measure therapist-rated change in six target areas of treatment:

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 prosocial 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 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.

Figure 29 shows the instrumental outcomes for youth who completed MST for the past three years. At least 80% of the youth received a positive indication for each of the instrumental outcomes, and more than two-thirds (68%) of youth showed improvement in all six domains. The most frequently indicated area of positive change was *improved family relations* (94%), whereas the lowest was *success in education/vocation* (81%).

Figure 29. Instrumental Outcomes at Discharge, Percent of Youth Who Completed MST, FY14-FY16

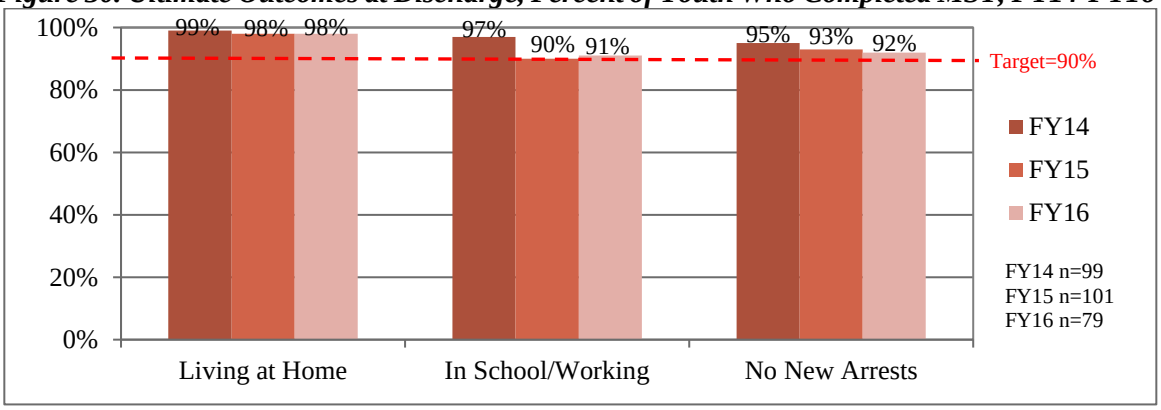


Ultimate Outcomes at Discharge

Three measures of success reported by the providers at discharge constitute the *ultimate outcomes*: (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 started. Other indicators of success include post-discharge outcomes, which are presented in the next section.

Figure 30 shows positive results overall in the ultimate outcomes for youth who completed MST in Maryland from FY14 through FY16. In the most recent year, the percentages of youth living at home (98%), in school/working (91%), and with no new arrests (92%) exceeded program targets (90%). Additionally, 85% of youth who completed MST in FY16 had positive results for all three ultimate outcomes.

Figure 30. Ultimate Outcomes at Discharge, Percent of Youth Who Completed MST, FY14-FY16



Juvenile and/or Criminal Justice System Involvement during Treatment

The ultimate outcomes are reported by MST therapists, who may not be aware of all youth contacts with law enforcement or the justice system. And 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., schools). Although the ultimate outcomes indicate that just 8%

of completers had new arrests during treatment, data provided by DJS and DPSCS[9] indicate that 20% of completers had been referred to DJS/arrested for a felony or misdemeanor offense while receiving MST in FY16. In addition, DJS data show that 15% of youth were admitted to a DJS detention facility during treatment.

Post-Discharge Outcomes

Subsequent Involvement with the Juvenile and/or Criminal Justice Systems

Research has shown that participation in MST is associated with a reduced risk for delinquency and criminal behavior. To assess these outcomes post-discharge, The Institute provided DJS and DPSCS with the name, gender, race/ethnicity, and date of birth of *all* youths who were discharged from MST in FY13, FY14, and FY15, and matches were identified in their respective databases. Following DJS' recidivism criteria, subsequent involvement with the juvenile and adult criminal justice systems were categorized as referred to DJS/arrested, adjudicated delinquent/convicted, and committed to DJS/incarcerated (see the insert for definitions). Youth who had been placed in secure juvenile residential facilities (e.g., detention, Youth Center) as of discharge from MST were excluded from the analysis (one youth in FY14 and two in FY15).[10]

Juvenile & Criminal Justice System Measures

Subsequent involvement with the juvenile and criminal justice systems are defined as follows:

Referred to DJS/Arrested refers to any DJS referral or adult arrest for a misdemeanor or felony offense.

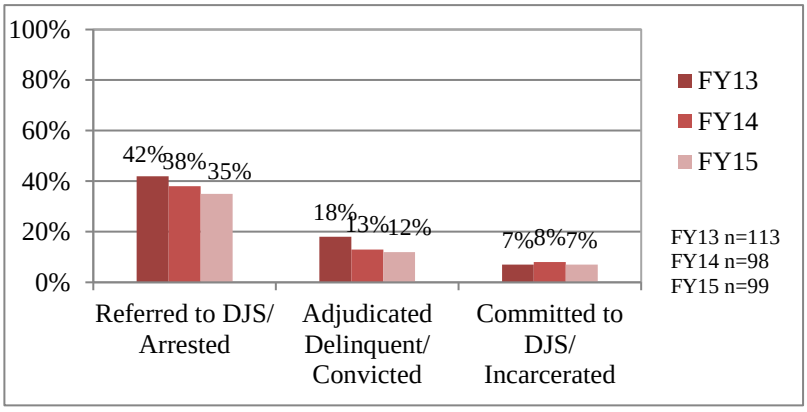
Adjudicated Delinquent/Convicted refers to any felony/misdemeanor complaint that is adjudicated delinquent at a judiciary hearing or any adult arrest that results in a guilty finding at a criminal court hearing.

Committed to DJS/Incarcerated refers to any commitment to DJS custody as a result of a felony/misdemeanor complaint that is adjudicated delinquent, as well as incarceration in the adult system that results from an adult arrest and conviction.

These measures exclude recidivism events outside of Maryland.

Of youth who completed MST, 35% were subsequently referred to DJS or arrested within one year of discharge (Figure 31); however, far fewer youth were ultimately adjudicated delinquent/ convicted (12% in FY15) and committed to DJS/incarcerated for these arrests (7% in FY15). Generally, there are decreasing trends in each recidivism indicator across the discharge cohorts.

Figure 31. Juvenile & Criminal Justice System Involvement within 12 Months Post Discharge, Percent of Youth Who Completed MST, FY13-FY15*



*Criminal justice system data were only obtained for DJS-referred or DJS-funded youths, which are most youths who completed MST.

According to bivariate analyses using all MST completers from FY13 through FY15, those with prior DJS complaints (41%) were significantly more likely than their counterparts (24%) to be referred to DJS/arrested within one year post-MST discharge. Gender, age, race/ethnicity, prior DSS involvement, and prior DJS committed residential placements were not statistically related to having a subsequent referral to DJS/arrest.

Figure 32 summarizes subsequent involvement with DJS and/or DPSCS within 12 and 24 months for youth who completed MST in FY13, FY14, and FY15. These numbers suggest that justice system involvement was driven primarily by contacts with the juvenile justice system, though 20% of FY13 completers and 11% of FY14

[9] Criminal justice system data were only obtained for DJS-referred or DJS-funded youths, which are most youths who completed MST.
[10] Because incarceration start and release dates are not provided in the data attained from DPSCS, the analyses presented here cannot exclude youth who were in adult facilities at the time of their discharge from MST.

completers were arrested in the adult system within two years of discharge. While there are generally decreasing trends over time, the percentages of youth with subsequent justice system contact within 24 months are high—54% of FY14 completers were referred to DJS/arrested, 19% were adjudicated delinquent/convicted, and 11% were subsequently committed to DJS/incarcerated. There were also substantial differences in these percentages by jurisdiction (see Appendix 1).

Figure 32. Juvenile & Criminal Justice System Involvement within 12 and 24 Months Post Discharge, Percent of Youth Who Completed MST, FY13-FY15*

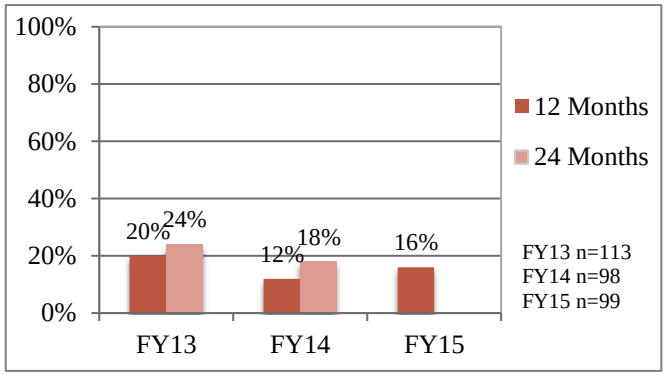
		FY13 (n=113)			FY14 (n=98)			FY15 (n=99)		
		Ref./ Arrest	Adj./ Convict.	Comm./ Incar.	Ref./ Arrest	Adj./ Convict.	Comm./ Incar.	Ref./ Arrest	Adj./ Convict.	Comm./ Incar.
DJS	12 Months	37%	17%	7%	35%	13%	7%	33%	11%	6%
	24 Months	47%	20%	8%	48%	17%	8%	--	--	--
DPSCS	12 Months	7%	1%	0%	6%	1%	1%	3%	1%	1%
	24 Months	20%	5%	4%	11%	3%	3%	--	--	--
DJS/ DPSCS	12 Months	42%	18%	7%	38%	13%	8%	35%	12%	7%
	24 Months	58%	25%	12%	54%	19%	11%	--	--	--

*Criminal justice system data were only obtained for DJS-referred or DJS-funded youths, which are most youths who completed MST.

DJS Committed Residential Placements

Youth who were committed to DJS do not necessarily 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 residential placement following discharge from MST than indicated by rates of commitment (shown above). Among youth who completed MST in FY15, 16% were admitted to a DJS committed residential placement[11] during the 12 months following treatment completion—a slightly higher share than the previous cohort. Further, 24% and 18% of the FY13 and FY14 completers, respectively, were admitted to a committed residential placement within a 24-month follow-up period (Figure 33).[12]

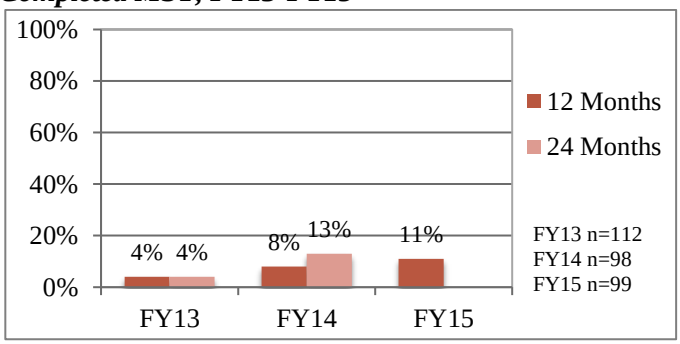
Figure 33. DJS Committed Residential Placement within 12 and 24 Months Post Discharge, Percent of Youth Who Completed MST, FY13-FY15



Subsequent Involvement with the Child Welfare System

The Institute also provided DHR with the names, dates of birth, and other demographic variables of all youths who were discharged prior to the last day of FY15. DHR researchers matched these youths in their State Automated Child Welfare Information System to retrieve information about contact with the child welfare system post-MST discharge. Overall, 4% of youth who completed MST in FY13,

Figure 34. New Child Welfare Involvement within 12 and 24 Months Post Discharge, Percent of Youth Who Completed MST, FY13-FY15



*One youth in FY13, 1 in FY14, and 2 in FY15 could not be matched to DHR data due to missing identifiers.

[12] Committed residential placements include places such as Youth Centers, group homes, residential treatment facilities, etc. They do not include detention.

[12] These percentages do not include youth who were residing in a secure facility at discharge from MST.

8% of completers in FY14, and 11% of completers in FY15 had some form of new DSS contact within 12 months of discharge. Of the youth who completed in FY13 and FY14, 4% and 13%, respectively, had some form of new DSS contact within 24 months of discharge (Figure 34). Among the 99 youths who completed in FY15, 4 (4%) had an investigation, 7 (7%) began receiving in-home services, and 4 (4%) were placed out of home within 12 months of discharge from MST (Figure 35).

Figure 35. Child Welfare System Involvement within 12 and 24 Months Post Discharge, Percent of Youth Who Completed MST, FY13-FY15

	FY13 (n=112)			FY14 (n=98)			FY15 (n=99)		
	Invest-igation	In-Home Service	Out-of-Home Plcmt	Invest-igation	In-Home Service	Out-of-Home Plcmt	Invest-igation	In-Home Service	Out-of-Home Plcmt
12 Months	1%	3%	0%	6%	4%	3%	4%	7%	4%
24 Months	1%	3%	0%	6%	9%	4%	--	--	--

*One youth in FY13, 1 in FY14, and 2 in FY15 could not be matched to DHR data due to missing identifiers.

Cost of MST in Maryland

Service Delivery Cost

In FY16, the total service delivery cost for providing MST in Maryland was $1,892,355. This amount includes payments made to service providers from funders, as well as the amount contracted through The Institute to provide training, coaching, and fidelity monitoring. Although there were variations in costs across the different providers, on average, the cost of administering MST was $16,600 per discharged youth (Figure 36).

Figure 36. Service Delivery Cost of MST in Maryland, FY16

Number of Discharged Youths	114
Avg. Service Delivery Cost per Youth	$16,600
Total Service Delivery Cost	$1,892,355

Cost Analysis for DJS-Funded Youth

One of the applications of MST is to prevent placement in more restrictive settings among high-risk youth. Although youth served by MST can be funded by a variety of sources (e.g., DJS, DSS, and CCIF), most are funded by DJS; thus, a simple analysis was conducted for DJS-funded youth to compare costs of MST with those of residential programs that serve comparable youth. The costs presented in this section are calculated as per diem rates and based solely on the contracted amounts between service providers and DJS, thereby excluding costs associated with training, coaching, and implementation data monitoring. The total estimated cost of care is based on these per diem rates multiplied by the average length of stay for each program—both important factors in overall costs. Findings are presented as averages by program type in Figure 37.

Within the DJS residential service array, treatment foster care programs, group homes, and therapeutic group homes serve youth who are most similar to the profiles of youth served by MST, and data for these programs are presented accordingly. In FY16, the average per diem rates were $164 for treatment foster care programs, $216 for group homes, and $259 for therapeutic group homes. At the same time, the average MST per diem rate for DJS youth was considerably lower at $113. Further, MST had a shorter average

Figure 37. Cost Analysis of MST and Placements for DJS-Funded Youth, FY16*

Program Type	Average Per Diem Rate	Average Length of Stay (Days)	Avg. Cost per Stay/ Treatment
MST	$113	113	$12,775
Treatment Foster Care	$164	308	$47,015
Group Home	$216	210	$45,708
Therapeutic Group Home	$259	193	$50,060

*Per Diem Rate and Average Length of Stay were provided by DJS. The Average Cost per Stay/Treatment was calculated by multiplying the Per Diem Rate by the Average Length of Stay for each program. The numbers presented in this table represent averages for each program type.

length of stay relative to the residential programs. A comparison of total costs across program types shows that MST has the potential to result in substantial cost savings. For example, the MST cost for DJS youth was 26% of the cost per stay in therapeutic group homes and 27% the cost per stay in treatment foster care programs. This analysis should be considered with caution, however, for several key reasons. For one, it does not identify comparable youth across programs (e.g., it is possible that some of the residential programs serve higher risk youth and/or those who would not be eligible for MST). Also, the per diem rates and lengths of stay vary considerably within each program type and total costs may significantly lower or higher depending on the program—an average was presented merely to simplify the analysis. Third, as stated above, costs included in these calculations do not necessarily account for all costs required to operate these programs. Finally, a more comprehensive analysis would consider both positive and negative program outcomes, and their associated monetary benefits and costs. Notwithstanding, this analysis suggests that MST is significantly less costly than residential care for youth.

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