MST®
Services

Proven Results
for Families and Communities



Multisystemic Therapy and Medicaid

Table of Contents

Multisystemic Therapy is a Scientifically Proven Intervention for At-Risk Youth

Therapists work in the home, school and community and are on call 24/7 to provide caregivers with the tools they need to transform the lives of troubled youth. Research demonstrates that MST reduces costly Medicaid-covered behavioral health claims and crime.

YOUTH SERVED

Juvenile Offenders and Incarcerated Youth

Substance-Abusing Youth

Emerging Adults

Abused and Neglected Children

With **2,500+ clinicians** in **15 countries** and **34 states**, over **200,000 families** have been positively impacted by MST.

With the help of Medicaid, we can continue to transform the lives of youth and families.

To acheive this goal, we are asking the Medicaid system to fund MST directly by:

1. Allowing providers to bill the MST specific Healthcare Common Procedure Coding System (HCPCS) Code for MST - H2033 in their state Medicaid plan
2. Setting a rate that adequately supports the delivery of MST
3. Crafting a service description that promotes fidelity to the evidence-based model

Return to Table of Contents

Example of Cost Savings: New Mexico

MST® Services

Realized Cost Savings for New Mexico Medicaid

Proven Results
for Families and Communities

66% reduction in Average Charges per Month for Medicaid

67% reduction in Residential Charges per Month for Medicaid

77% reduction in Inpatient Charges per Month for Medicaid

52% reduction in Outpatient Charges per Month for Medicaid

=

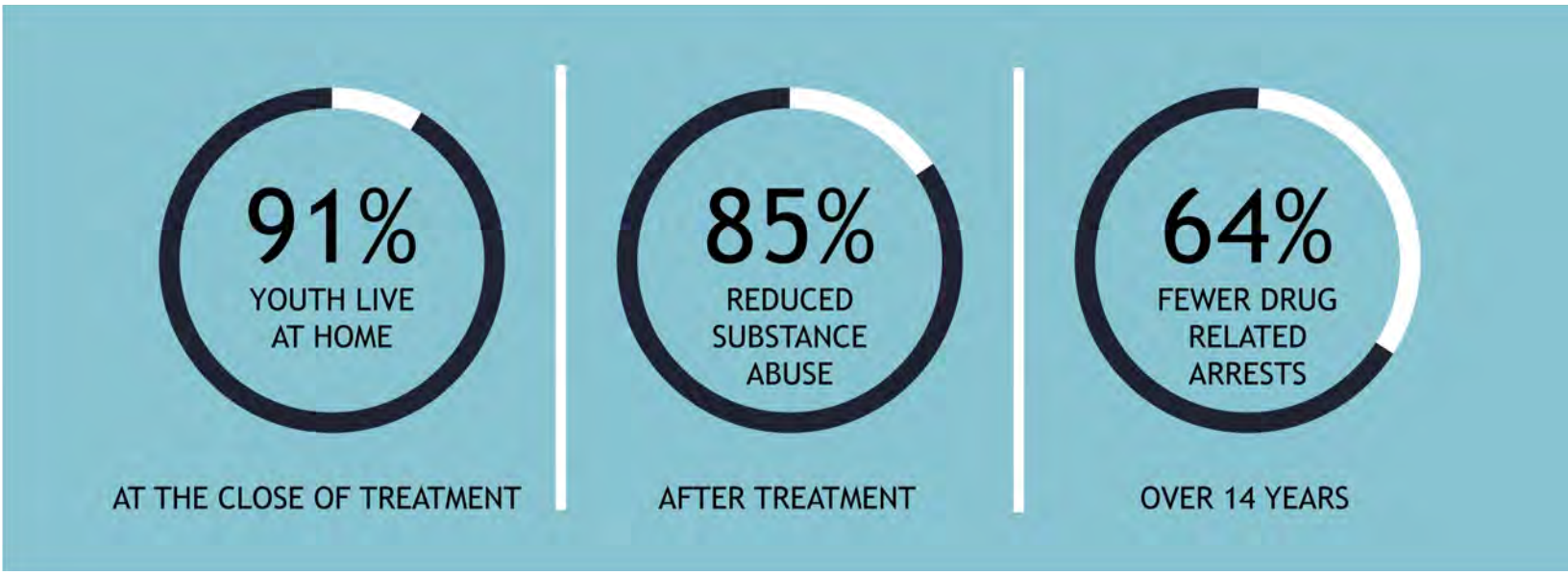
Cost Savings for Medicaid

$133.5m saved over two years through reductions in Medicaid-covered behavioral health claims and crime

$36.1m in reduced Medicaid expenses over two years

For every dollar that New Mexico spent on MST treatment,

$1.32* was recovered in reduced behavioral health claims within two years after youth completed MST treatment



** Does not include incremental cost savings that MST generates for siblings and caregivers.*

White Paper: What Makes MST Such an Effective Intervention?

What Makes MST Such an Effective Intervention?

MST features the largest body of evidence, by far, of successful interventions for high risk youth.

MST® Services

Proven Results for Families and Communities

MST FEATURES THE LARGEST BODY OF EVIDENCE, BY FAR OF SUCCESSFUL INTERVENTIONS FOR HIGH RISK YOUTH

Therapists work in the home, school and community and are on call 24/7 to provide caregivers with the tools they need to transform the lives of troubled youth. Research demonstrates that MST reduces criminal activity and other undesirable behavior.

74 STUDIES

$75m+ RESEARCH FUNDING

140+ PEER-REVIEWED JOURNAL ARTICLES

57,000 FAMILIES INCLUDED ACROSS ALL STUDIES

MST IS THE ONLY INTERVENTION FOR HIGH RISK YOUTH WHERE RESULTS HAVE BEEN REPEATEDLY REPLICATED BY INDEPENDENT RESEARCH TEAMS

* AT THE CLOSE OF TREATMENT *

SAVINGS TO TAXPAYERS AND CRIME VICTIMS

MST DELIVERS

SUPERIOR CLINICAL & FINANCIAL RESULTS

RELATIVE TO INCARCERATION AND ALTERNATIVE TREATMENTS

UP TO **$23.59** ROI FOR EVERY DOLLAR SPENT

UP TO **$200K** NET BENEFIT PER YOUTH

Journal of Family Psychology

What Makes MST Such an Effective Intervention?

When you have young people who can't seem to keep themselves out of trouble, who are heading toward prison, they and their families need help. Some have bounced from one therapy and therapist to another. And still, they repeat offend. Parents and caregivers can get to the point where they believe placement might be best for all involved.

It isn't. Studies have shown prisons and detention centers are schools for crime where youths pick up new ways to get in trouble. Tens of thousands of dollars are spent on locking them up, only to have them end up back in prison again. But there are alternatives to this endless cycle.

One alternative is Multisystemic Therapy (MST), an intensive family- and community-based treatment that addresses the many different factors that lead to serious anti-social behavior. The MST approach views the individual as being surrounded by a network of interconnected systems that include the teen, family, peer group, school and neighborhood. Work may be necessary in any one or a combination of these systems. The MST "client" is the entire ecology of the youth - family, peers, school, and neighborhood.

Using and building on the existing strengths of each system to reach positive outcomes, MST strives to promote long-lasting and sustainable positive change.

MST is delivered in the home

One of the defining features of MST is that it is delivered in the natural environment of the youth and family—including the home, school and wider community. Visits can be in the family home, in the youth's school, or in the community, depending on what needs to be accomplished. The treatment itself is not cookie cutter—it is specifically tailored to the strengths and needs of each individual youth and family, with family members playing an integral role in helping design and implement the treatment plan.

Therapists work with families on an ongoing and intensive basis. Sessions are scheduled as frequently as necessary to achieve observable and measurable changes. Because of the nature of home-based therapy, sessions are often scheduled outside of typical working hours. Therapists are on call 24 hours a day, seven days a week. Caseloads are kept between four and six per therapist, with an average of five, to ensure that each family receives the attention they deserve and need.

This family- and home-based approach helps overcome barriers to accessing services, increases the likelihood that families will stay in treatment, provides them with intensive services and helps maintain treatment gains.

The role of the therapist and family

MST therapists are responsible for engaging the family and other key participants, including mandated agencies, in the MST treatment process. Our motto is "whatever it takes," and therapists truly adopt that attitude to get the necessary parties on board with the treatment goals and plans. Therapists are evaluated and held accountable for achieving positive case outcomes. Cases are reviewed weekly by the team of therapists, their supervisor, and their MST Expert to ensure adherence to the nine MST treatment principles and the MST analytical process.

"By treating the family as a whole, the court is not sending 'rehabilitated' youths back into the same dysfunctional environment. The goals are healthier families and reduced recidivism. MST aims to stop the cycle of dysfunction and criminality generationally."

Judge Dorene S. Allen, Midland Country Probate Court

The MST therapist empowers the caregiver and youth to build skills and utilize social supports to better manage the problems they encounter. It is no good to place demands on the adolescent that can't be met because they are beyond his or her development. Each family is different and must be given individualized help tailored to their situation and concerns—which is exactly what MST does.

MST GOALS AND TREATMENT TECHNIQUES

The goals of MST include providing parents with the skills and resources that they need to meet the challenges of raising teenagers, and giving the young person the skills to cope with family, school and neighborhood problems. But it's not good enough for the family to be able to cope with their teenager just during treatment. The successes need to remain long after the MST team exits.

This is accomplished, in part, by mobilizing individual, family and community resources that can support and maintain the long-term behavioral changes that occur during MST treatment. MST interventions build on pre-existing strengths and typically aim to:

- Improve how the caregiver disciplines
- Enhance family relations
- Decrease a youth's association with negative peers
- Increase a youth's association with pro-social peers
- Improve a youth's school or vocational performance
- Engage youth in positive recreational outlets

"For me, it was easy to champion MST. In the dark of night, I'll tell you, it's what I'd want if my daughter were to find herself in the spot that so many children do."

Julie Revaz,

Connecticut Judicial Branch

- Develop a natural support network of extended family, neighbors and friends to help caregivers achieve and maintain changes

MST uses various research-proven treatment techniques to achieve positive results. These include cognitive, behavioral and pragmatic family therapies.

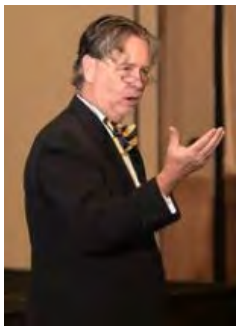
MST IS AN EVIDENCE-BASED TREATMENT

MST is an evidence-based program and has been shown in rigorous, scientific tests to be superior to other treatments for at-risk adolescents, many of whom are exhibiting severe anti-social and criminal behavior.

The importance of having a clinical treatment undergo such testing might not, at first glance, seem that important. However, it is just as important as the Federal Drug Administration (FDA) approving the drugs you take.

Think about it. When you have a pounding headache, you might reach for Advil, Excedrin or aspirin. Each drug has been developed and proven to help get rid of a headache and has been shown to be more effective than doing nothing. For a new drug to be used as a treatment, it must establish a track record in clinical trials and be vetted as "safe and effective" by the independent FDA.

MST used the same rigor that a drug company uses to develop and test its mental-health treatments. MST is based on scientific trials and methodology, and there are independent organizations that have verified it as an efective evidence-based treatment.



"MST is one of the best evidence-based programs to deal with families who are suffering from trauma, of which many are living within poverty, because they are confronted with so many obstacles that they need somebody to help them figure it out. It's not a handout. It's a helping hand."

Chief Judge Steven Teske

See Chief Judge Steven Teske's video testimonial at http://www.mstservices.com/mst-videos

Because evidence-based practices have positive outcomes supported by study results, those paying for the services know they will get value for their money.

MST has endorsements from these organizations with the most rigorous standards:

- Blueprints for Healthy Youth Development
- Office of the Surgeon General
- Coalition for Evidence-Based Policy
- SAMHSA's National Registry of Evidence-based Programs and Practices (NREPP)
- CrimeSolutions
- Many more

MST IS DELIVERED WITH FIDELITY TO THE MODEL

Adherence to the MST treatment model is essential to achieving positive outcomes. MST is proven to be a cost-effective program that reduces re-arrests and out-of-home placements for at-risk youth. But crucial to these findings is that strong adherence to the model is correlated with strong case outcomes.

Following the model makes good sense. Changing it, even slightly (hiring less credentialed therapists, shortening or lengthening treatment, referring clients who don't quite match the eligibility criteria), makes the treatment no longer MST.

To ensure adherence to the model, training is intensive and ongoing. Clinicians go through a week of introductory training, weekly consultation, weekly on-site clinical supervision and quarterly training update sessions.

The temptation to "customize" an evidence-based program is strong. However, when the rules of the model are broken, the empirical data that grounds MST no longer stands. MST is delivered with consistency, and represents a low investment risk for communities.

GLOBAL REACH

15	34	2,500+	200,000+
COUNTRIES	STATES	CLINICIANS	YOUTH

Report: Results From New Mexico's MST Providers

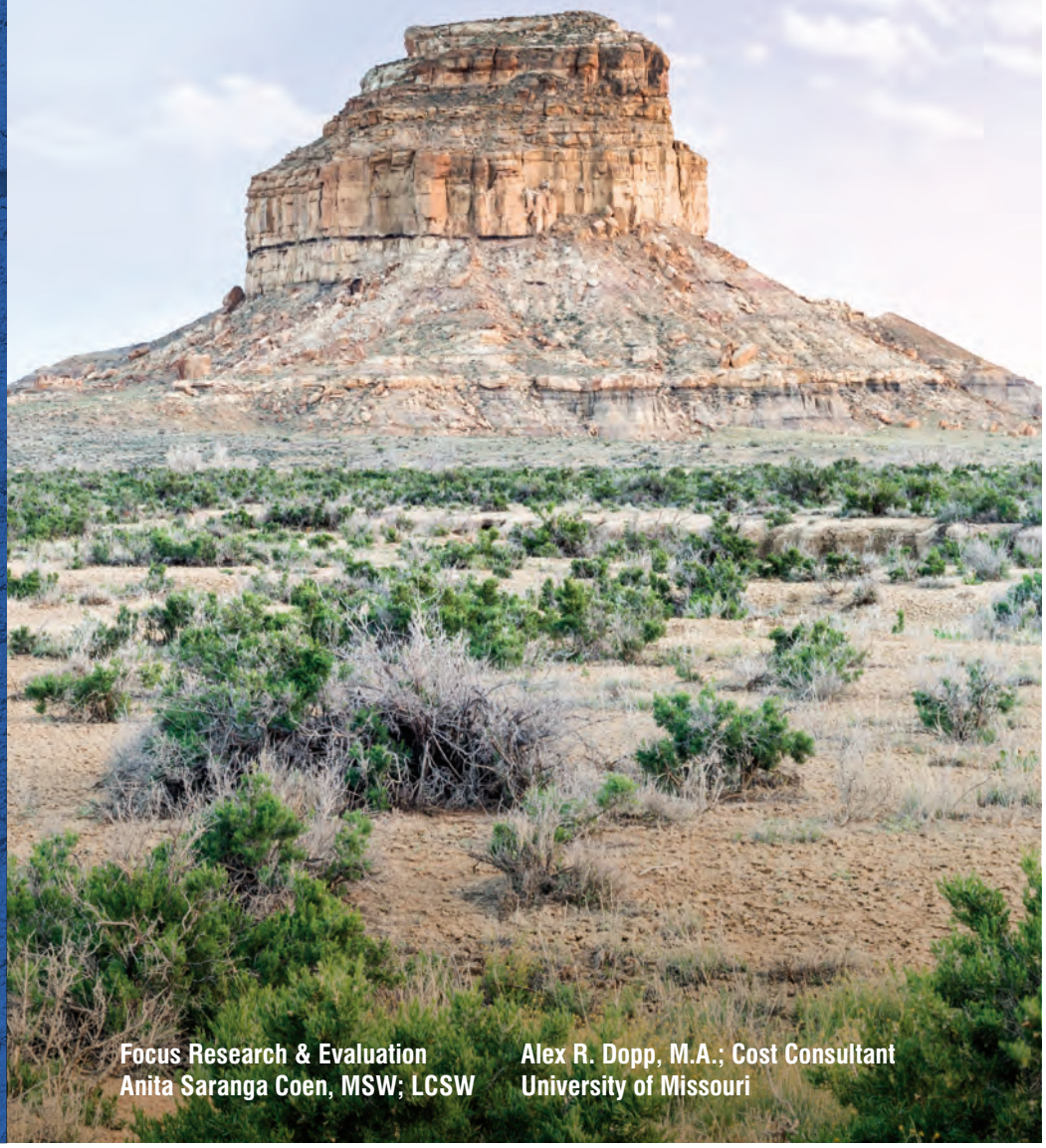
EVALUATION REPORT

New Mexico's Children, Youth & Families Department
and the Center for Effective Interventions

New Mexico MST Outcomes Tracking Project

Results for New Mexico's MST Providers

July 2005-June 2015



Focus Research & Evaluation
Anita Saranga Coen, MSW; LCSW

Alex R. Dopp, M.A.; Cost Consultant
University of Missouri

April 2016

EXECUTIVE SUMMARY

Serious juvenile offenders or youth at risk for further penetrating the justice system pose many challenges for society. In addition to threatening public safety, their behavior and its consequences places heavy burdens on the legal, educational and child welfare systems and disrupts their families, schools and communities.

Multisystemic Therapy (MST), a family- and community-based treatment, is one of the few interventions that has been shown to be effective with this difficult population. This report summarizes and highlights data from an ongoing evaluation of MST services delivered by current/recent New Mexico MST providers (*n*=6) and legacy providers (*n*=8). We report on demographic and outcome information for 4,504 youth who received and completed[1] MST treatment in New Mexico from July 2005 through June 2015.

July 2005 – June 2015
4,504 completed MST
95 completed MST-PSB

In addition, this report includes a section (see page 14) that addresses the admission characteristics and short-term outcomes for 95 New Mexico youth from two current/recent and one legacy organizations who completed Multisystemic Therapy for Problem Sexual Behaviors (MST-PSB), which is a clinical adaptation of standard MST for youth with problematic sexual behaviors.

[1] Completion of MST was based upon the mutual agreement of the primary caregiver(s) and the MST Team and does not necessarily indicate successful treatment.

The evaluation showed striking outcomes for youth who completed standard MST treatment.

- From admission to discharge, these young people made positive changes in every outcome area studied, including:
  - legal, mental health and substance abuse problems,
  - out of home living situations, and
  - instrumental/key indicators of treatment outcomes, i.e., family and youth functioning.
- 1,239 youth who completed MST treatment, and for whom we had six- and twelve-month post discharge data from youth' caregivers, demonstrated maintenance of these gains twelve months after completing MST.
- At six and twelve months after discharge, youth caregivers also reported youth were doing better in the five instrumental indicators related to youth and family functioning.
- A recidivism analysis showed that youth who completed MST had a 76% likelihood of NOT having a new petition filed by the District Attorney during the one year following discharge; at 24 months post-completion, the probability of NOT having a new petition filed by the District Attorney was approximately 66%.

Furthermore, a Combined Juvenile Justice and Medicaid Behavioral Claims Cost Analysis Showed…

Savings of nearly $133.5 million over the two years following treatment for 1,869 youth who completed MST through June 2012 and for whom 12 months of pretreatment data and 24 months of posttreatment data were available. These savings resulted from reductions in (a) juvenile crime (as measured by criminal petitions through the New Mexico Juvenile Justice Services [JJS] system) and (b) Medicaid-covered behavioral health claims. **This resulted in an average savings of over $71,000 per youth, beyond the cost of treatment.**

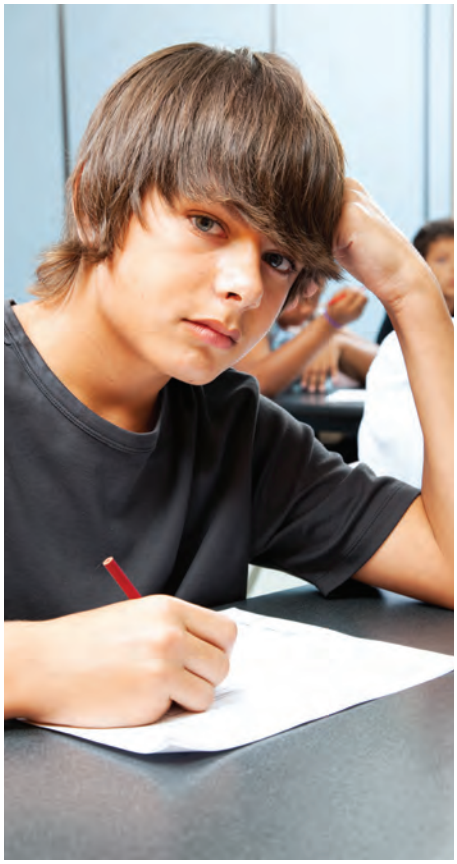
The outcome evaluation showed that, during the twenty-four months after MST treatment as compared to the twelve months before MST treatment, there were **reductions** in the monthly rates of (a) **JJS criminal petitions by 66%** (with a 36% reduction in felony petitions); and (b) **paid Medicaid behavioral health claims by 66%** (with a 67% reduction in residential treatment claims).

- MST treatment costs were offset by reductions in juvenile crime and Medicaid claims for other behavioral health services.
- The rate of return, i.e., benefit-cost ratio, was 5.87; for every dollar spent on MST treatment, $5.87 was returned through reductions in expenses related to crime and behavioral health treatment. Returns beyond the cost of treatment reflect savings.
- Reductions in average monthly crime-related expenses led to $25.5 million in benefits to taxpayers and almost $99.2 million in benefits to crime victims.
- Average Medicaid charges per month for the sample decreased from over $1.9 million before MST treatment to just under $640,000 after discharge.

INTRODUCTION

Multisystemic Therapy

Multisystemic Therapy (MST) is an intensive home-, family- and community-focused treatment for youth with serious antisocial behavior and their families. MST has been shown to reduce the youth' criminal offending, out of home placements, and behavioral health problems and to improve family functioning. Developed by Dr. Scott Henggeler in the 1970s, MST teams are now located in 34 states and 15 countries. In New Mexico, MST teams serve 48% (16) of the state's counties.



The New Mexico MST Outcomes Tracking Project (OTP)

BACKGROUND

In July 2001, New Mexico's Medicaid Behavioral Health system implemented a program to provide funding for MST treatment for New Mexico's mental health and Juvenile Justice involved youth. New Mexico's Children, Youth & Families Department (CYFD) also provided funding for the development and implementation of the program evaluation component for MST teams in New Mexico. Implementation began in late 2003. In March 2005, the New Mexico Outcomes Tracking Project (NM-OTP) combined efforts and resources with Colorado's Center for Effective Interventions (CEI), which had contracted with Focus Research & Evaluation to create and pilot a statewide outcomes database for youth who received MST treatment in Colorado. The MST Institute (MSTI) joined the collaboration early in the development phase.

The collaboration ultimately produced the Colorado/New Mexico (CO/NM) Enhanced MSTI Website. This site, which is available through the national MSTI website, allows clinicians easy access to data entry and routine reporting, and complies with appropriate rules and regulations that protect families' and agencies' privacy and confidentiality. The New Mexico MST Outcomes Tracking Project documents demographic and outcome data regarding youth and families who have received MST services from New Mexico's MST provider agencies.

THE PARTNERS

The partners involved in the New Mexico MST Outcomes Tracking Project (NM-MST-OTP) are:

- **New Mexico's Children, Youth & Families Department (CYFD)**—provides co-leadership, coordination and funding for the program evaluation.
- **The Center for Effective Interventions (CEI)**—provides support, training, and consultation to MST teams in New Mexico and surrounding western states. CEI shares leadership of the program evaluation.
- **Focus Research & Evaluation**—an independent program evaluation consulting practice, based in Colorado, provides instrument design, ongoing collaboration with MSTI, support to MST providers for data collection, and annual statewide and agency-specific outcome reports.
- **MST Institute (MSTI)**—a non-profit organization that provides web-based database management information systems and quality assurance tools to programs implementing MST.

During FY 2015, six organizations were operating 20 MST Teams in their catchment areas. Of these, 3 teams are specialized MST-Problem Sexual Behavior (MST-PSB) Teams. The parent organization, number of teams and catchment areas are listed in **Table 1.**

This evaluation report is a joint product of all these entities. Together, the partners developed the database and tracking system that provided the foundation for separately funded and reported MST evaluation efforts in New Mexico and Colorado.

Table 1. New Mexico's MST Provider Organizations, Number of Teams and Catchment Areas

Provider Organizations	Teams	Catchment Areas
Guidance Center of Lea County	1 Standard MST	Lea
La Frontera*	3 Standard MST 1 MST-PSB	Doña Ana, Grant, Hidalgo, Luna, Otero
Presbyterian Medical Services (PMS)	5 Standard MST	Bernalillo San Juan, Santa Fe, Sandoval, Valencia
Southwest Family Guidance Center and Institute	4 Standard MST 2 MST-PSB	Bernalillo, Santa Fe, Sandoval, Valencia
Turquoise Health & Wellness*	3 Standard MST	Chaves, Curry, Roosevelt, Quay
University of New Mexico (UNM)	2 Standard MST	Bernalillo

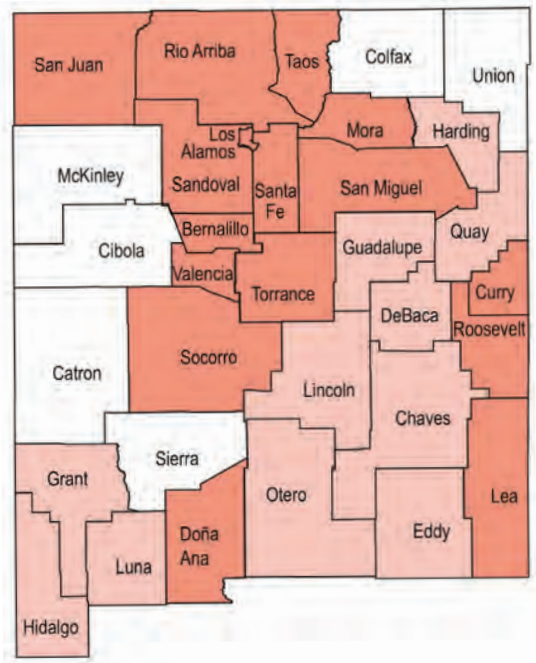
* These organizations ceased providing MST services during 2015.

This report includes youth from these organizations as well as eight legacy organizations that ceased providing MST services prior to FY'15. As of July 1, 2015, one organization expanded services and two additional organizations began providing MST services, covering some, but not all of the areas served by previous organizations. Eight legacy organizations are not listed.

Table 1a. New NM MST Provider Organizations and Team Expansions

Provider Organizations	Teams	Catchment Areas
La Clinica de Familia	1 Standard MST 1 MST-PSB	Doña Ana
Mental Health Resources	1 Standard MST	Curry, Roosevelt
Southwest Family Guidance Center and Institute	1 MST-PSB	Doña Ana

Figure 1: Penetration of MST in New Mexico by County



DATA SOURCES

Data are collected on all youth when they are admitted to and discharged from MST treatment. These data are entered into the MSTI online database by MST therapists and supervisors. An independent contractor, Advanced Behavioral Health, conducts telephone interviews with caregivers of youth who complete MST treatment at six- and twelve-months post discharge. The 4,599 youth who were admitted and discharged between July 2005 and June 30, 2015 and who completed regular (n = 4,504) and PSB (n = 95) MST treatment were included in this year's analyses. Six- and/or twelve-month post discharge follow-up data were collected for 2,261 (50%) of the regular MST youth; 1,239 (28%) had data at four points in time, i.e., admission, discharge, and six and twelve months after discharge. This database is the primary source of data for this report. The amount of follow-up data available for MST-PSB youth was too small to include at this time.

Two additional data sources were used to conduct cost-benefit analyses that enhanced the evaluation's comprehensiveness and external validity.

- **CYFD Juvenile Justice Family Automated Client Tracking System (FACTS) Database.** Maintained within CYFD's Juvenile Justice Services (JJS) Unit, this database includes information about New Mexico's juvenile offenders, including filings (i.e., petitions, referrals). These data were used to estimate JJS-related costs and savings. A JJS analyst used this database to examine recidivism rates for MST youth.
- **Paid Claims Databases from New Mexico's Behavioral Health Managed Care Organizations (MCOs) for New Mexico's public mental health system.** We used data from all organizations that documented Medicaid claims covered under New Mexico's public mental health system over the years of the evaluation. Organizations' internal analysts used these databases to extract youth' use of a broad array of services and their associated claims charges.

Previous reports, based on outcomes from youth who completed MST through June 2012, have presented the results of economic analyses that compared the costs of MST to benefits resulting from reductions in (a) JJS petitions in the FACTS database or (b) Medicaid behavioral health claims in the MCO Paid Claims Databases. Unfortunately, we were not able to obtain updated information from these databases for youth discharged later than June 2012 to use for the present report. Instead, we conducted a combined cost-benefit analysis of youth who were represented in both databases in order to examine the additive benefits of MST across multiple outcome domains (i.e., reductions in crime and behavioral health care utilization).

Youth Who Completed Standard MST Treatment

STARTING POINTS…

Sociodemographic Characteristics at Admission

Of the 5,418 New Mexico youth who enrolled in MST treatment during the 10-year evaluation period, 4,504 (83.1%) completed MST treatment, with an average length of stay of 4.5 months. Notable characteristics of the youth who completed MST treatment include:

- 66% male
- Average age at admission = 15.2 years
  - 31.6% were age 14 or younger
  - 43.9% were age 15 or 16
  - 24.5% were age 17 or older
- 63% of the youth were Latino/Hispanic, 20% White/ Non-Hispanic, 3% Black/ African American, 3% American Indian/Alaska Native, 9% multi-racial
- Most (95%) were living at home at the time of admission
- Owing to the funding mechanism for MST Services in NM, most of the youth were Medicaid eligible during their enrollment in treatment. NM also has dollars available to provide treatment for some non-Medicaid eligible youth.

Problem Severity at Admission to MST

The 4,504 youth who enrolled in and completed MST treatment demonstrated serious problems in many areas of their lives.

During the three months before admission:

- 36% of the youth had lived out of home at least once, 16% of these in a criminal justice facility.

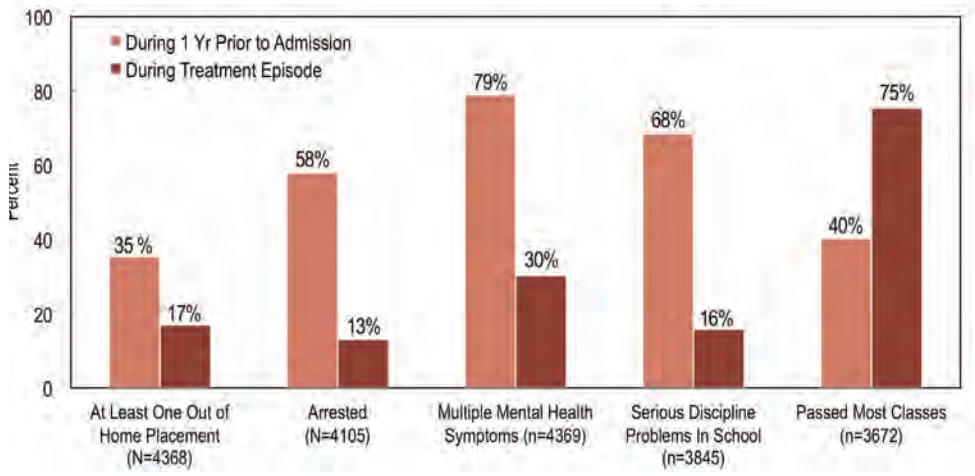
During the year before admission:

- 60% had not been passing most classes and 69% displayed multiple/chronic discipline problems in school.
- 58% had been arrested.
- 79% exhibited multiple mental health problems.
- 48% had co-occurring mental health and substance abuse problems.
- 35% had been prescribed psychiatric medications for behavioral health problems other than attention deficit disorder.
- 20% had evidenced suicide-related thoughts or behaviors.
- 21% had been in residential treatment or hospitalized for psychiatric reasons during the year before enrollment.

LONGER-TERM OUTCOMES

Outcomes at Discharge

Figure 2. Youth Who Completed MST: Outcomes for Out of Home, Arrests, and School from Admission to Discharge

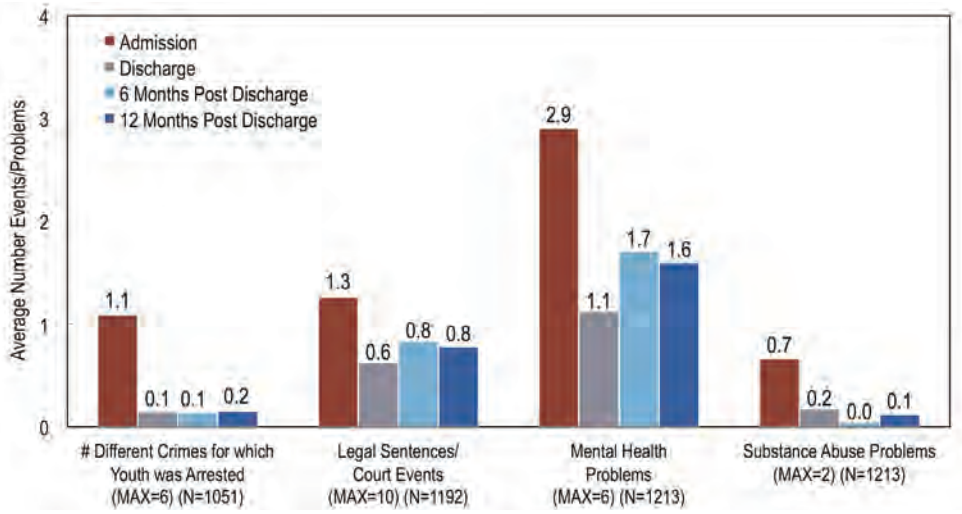


All analyses were paired and only included youth with valid data at admission and discharge; the number of youth varies because of missing data. All changes were statistically significant (p=.000 McNemar)

From admission to discharge, youth made positive changes in every outcome area studied, including the out-of-home placement, legal, mental health, and school domains.

Outcomes 6 and 12 Months after Discharge

Figure 3. Outcomes in 4 Domains: Youth Who Completed MST Treatment and with Admission, Discharge, and 6 and 12 Months Post-Discharge Data*



- *The maximum number of events/problems varies across domains and is indicated by (MAX = X) above.*
- *Reductions between Admission and Discharge were significant for all measures.*
- *Reductions between Admission and 6 months and between Admission and 12 Months Post Discharge were statistically significant for all measures (p=.000).*

27% (n = 1,257) of the youth who completed MST had admission and discharge data as reported by MST therapists and post discharge data as reported by youth's caregivers. Longitudinal analyses demonstrated maintenance of gains in legal, mental health and substance abuse domains twelve months after they completed the program. Youth with four data points were compared to youth with fewer data points on sociodemographic characteristics and problem severity. Youth with four data points were more likely to have been enrolled in or completed school at admission (p = .040) and less likely to have had any legal issue during the three months prior to admission (p = .014). Both of these group differences were found to have negligible clinical significance (ds = .14 and -.09, respectively) based on standard interpretative guidelines for Cohen's d.[2]

[2] Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates

Cost-Benefit Analysis of MST

General Method[3]

Since we did not have access to updated cost data for the most recent fiscal year (i.e., youth discharged between July 2012 and June 2013, allowing for two years of follow-up), we developed an approach that combined the previous years' data regarding JJS petitions and Medicaid behavioral health claims. This approach allowed us to calculate the additive benefits of MST treatment in both systems. The sample for the cost-benefit analysis was comprised of 1,869 youth who (a) completed MST; (b) had been discharged for two years or more by June 30, 2014; and (c) could be matched in both the JJS FACTS database and the MCO Paid Claims databases. A representativeness analysis revealed that these youth were similar to youth who did not match in both databases with two exceptions: youth who matched in both tended to younger (M_{age} = 14.6 vs. 15.5; d = -0.55) and were more likely to have passed most classes in the previous year (46.3% vs. 36.8%; d = 0.22). These differences represent a medium effect and small effect, respectively, based on the aforementioned guidelines for Cohen's *d*.

The costs and benefits of MST were compared using two metrics, the net benefit and the benefit-cost ratio. The net benefit is the difference between benefits and costs, whereas the benefit-cost ratio is benefits divided by costs. A positive net benefit and a benefit-cost ratio greater than 1.00 are indicative of a cost-beneficial intervention. The total cost of treatment, estimated from Medicaid claims for MST services, was just under $27.5 million (i.e., $14,665 per youth). Note that all monetary values (e.g., cost of treatment, crime- and claims-related expenses) were (a) adjusted to 2015 values using the Consumer Price Index[4] to account for inflation and (b) discounted[5] 3% for each year of follow-up to reflect the decreased value of future dollars compared to present dollars.

Juvenile Crime Outcomes

The costs and benefits of MST associated with juvenile crime were examined using an adaptation of the Washington State Institute for Public Policy cost-benefit model (hereafter, WSIPP model[6]). The WSIPP model provides estimates of a range of crime-related expenses, broadly categorized as:

a. **Taxpayer expenses** (i.e., police, court processing, detention, and supervision);

b. **Tangible losses to victims** (i.e., property damage, health care, victim services, police/fire, and lost productivity); and

c. **Intangible losses to victims** (i.e., pain and suffering).

All criminal petitions from JJS were coded into 11 categories for analyses, including six categories of felony crime including (1) murder/manslaughter, (2) sexual, (3) robbery, (4) assault, (5) property, (6) drug and five categories of misdemeanor crime including (7) theft/larceny, (8) stolen property, (9) fraud, (10) misdemeanor assault and (11) misdemeanor drug. Analyses of crime victim benefits included estimates of additional benefits related to reductions in undetected crimes (i.e., those that were not adjudicated).

Detention data were not available for this analysis. It is also important to note that the FACTS database only includes cases that were processed by JJS. Any criminal petitions that were filed after the youth turned 18 (or were otherwise processed in the adult justice system) were not available. Therefore, we excluded all youth who were age 17 or older at the time of discharge from MST to ensure that the sample (a) had a minimum of one year of follow-up data available but also (b) remained as representative as possible (with respect to age) of youth receiving MST in New Mexico. The average length of follow-up for JJS petitions was 22.2 months, with 70% of the sample followed for 24 months.

[3] The following Juvenile Justice and Behavioral Health Services sections present summaries of the methodologies and results of the cost analyses. More detailed information about these analyses are available from the Center for Effective Interventions.

[4] Bureau of Labor Statistics. (2015). *Inflation calculator.* Retrieved from www.bls.gov/data/inflation_calculator.htm.

[5] Gold, M. R., Siegel, J. E., Russell, L. B., & Weinstein, M. C. (1996). *Cost-effectiveness in health and medicine.* New York, NY: Oxford University P The following Juvenile Justice and Behavioral Health Services sections present summaries of the methodologies and results of the cost analyses. More detailed information about these analyses are available from the Center for Effective Interventions.

[5] Bureau of Labor Statistics. (2015). *Inflation calculator.* Retrieved from www.bls.gov/data/inflation_calculator.htm.

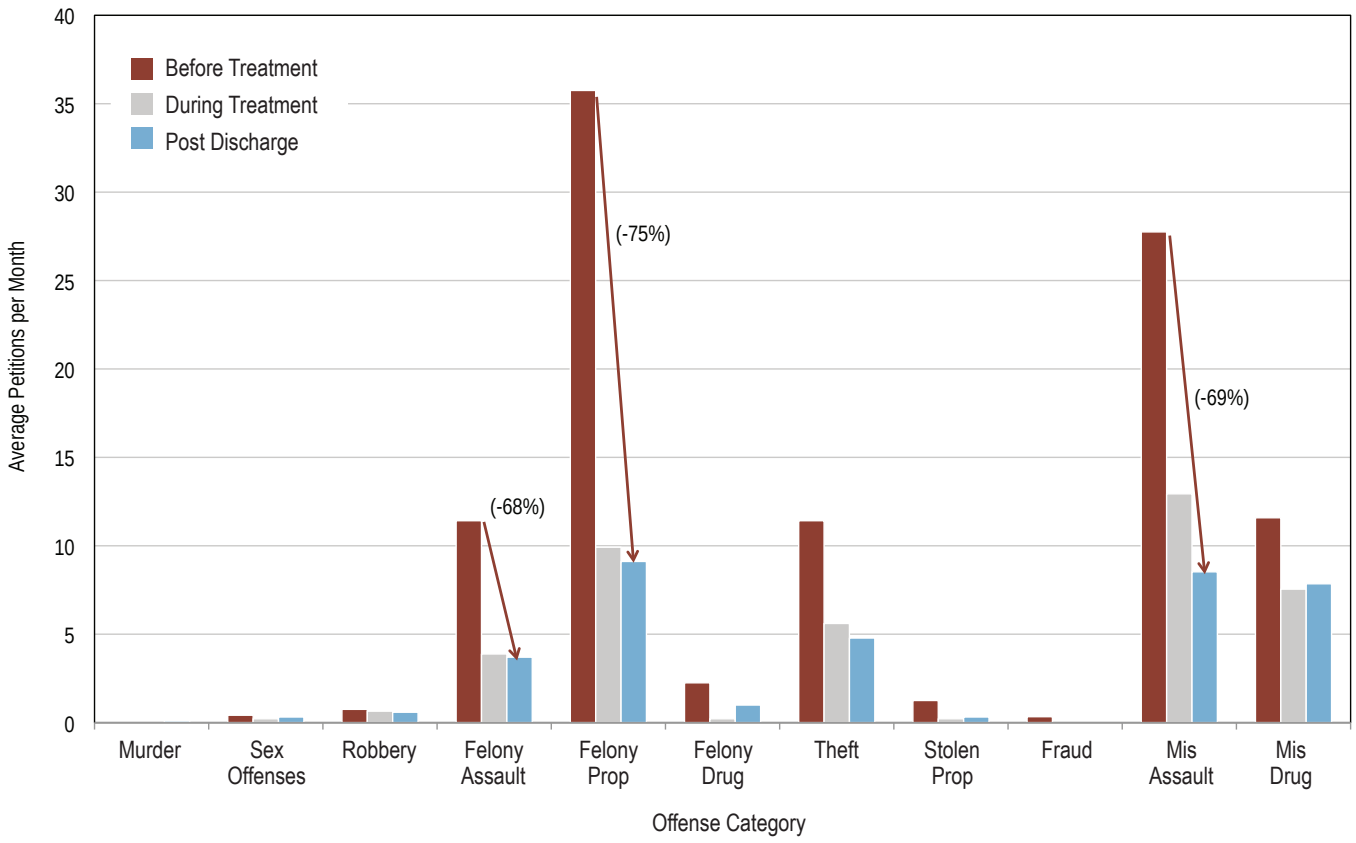
[5] Gold, M. R., Siegel, J. E., Russell, L. B., & Weinstein, M. C. (1996). *Cost-effectiveness in health and medicine.* New York, NY: Oxford ress.

[6] Aos, S., Phipps, P., Barnoski, R., & Lieb, R. (2001). *The comparative costs of and benefits of programs to reduce crime. Olympia: Washington State Institute for Public Policy.* Retrieved from http://www.wsipp.wa.gov/ pub.asp?docid=01-05-1201

Change in Average Petitions per Month across Study Periods

In order to control for the different lengths of the Pre (12 months), During (M = 4.6 months), and Post (M = 22.2 months) time periods, we first calculated Average Petitions per Month (AP/M) for each time period. In all cases, only substantiated petitions (i.e., plead guilty, plead no contest, or found to be guilty) were used to calculate AP/M. Compared to the Pre period, average AP/M was reduced by 62% in the During period and by 67% in the Post period. When only felony crimes were examined, AP/M decreased by 36% for both During and Post periods. AP/M for individual offense categories are presented in **Figure 4.**

Figure 4. Average Petitions Per Month[a] Before MST, During MST Treatment, and After Discharge from MST (n=1,869)



[a] **Average petitions per month** *are calculated by averaging the total petitions for each offense category by the number of months in a given period. The total petitions in each offense category were divided by (a) 12 months for the Pre period, (b) 4.6 months (i.e., the average length of stay across sites) for During period, and (c) 22.2 months (i.e., the average length of follow-up) for the Post period.*

With regard to AP/M for individual offense categories:

- Assaults accounted for 38% of the pre-admission petitions. From Pre to Post, there was a 68% reduction in felony assaults and a 69% reduction in misdemeanor assaults.
- Felony property crimes represented another 36% of the pre-admission petitions, and showed a 75% reduction from Pre to Post.

Net Benefits to Taxpayers and Crime Victims

The WSIPP model separates estimates of benefits to taxpayers and to crime victims (tangible and intangible). Using these methods, we determined that:

- the estimated taxpayer benefits for the sample were almost $4.4 million during MST treatment and over $21.1 million following treatment, for a total of more than $25.5 million in reduced taxpayer expenses, and
- benefits to crime victims were estimated at over $37.0 million dollars in the tangible domain and almost $62.2 million in the intangible domain.

We summed the benefits to taxpayers and crime victims to calculate the total expected benefits. We then subtracted the total cost of treatment from a given estimated benefit (i.e., taxpayer, crime victim tangible, crime victim intangible, and total) to obtain the net benefit of MST in each domain. Finally, we divided each estimated benefit by the total cost of treatment to calculate benefit-cost ratios of MST in each domain. Net benefits and benefit-cost ratios are reported in Table 2. MST was not cost-beneficial when only benefits to taxpayers were considered, but the combined benefits to taxpayers and crime victims greatly exceeded total treatment costs (with a return of $4.55 for every dollar spent).

TABLE 2

Benefit Category	Benefits	*Net* Benefit [a]	Benefit-Cost Ratio [b]
Taxpayer	$25,552,610	-$1,856,467	0.93
Crime victim tangible	$37,033,660	$9,624,583	1.35
Crime victim intangible	$62,149,315	$34,740,238	2.27
JJS Subtotal	$124,735,586	$97,326,509[c]	4.55[c]

Total cost of MST is $27,409,077. All dollar values are in 2015 dollars.

[a] Benefits minus costs. [b] Benefits divided by costs. [c] Total estimates have been adjusted to reflect a single total cost of MST and thus are not the simple sums of the values for other benefit categories.

Behavioral Health Services Outcomes

Unlike crime-related expenses, the expenses associated with behavioral health claims were estimated directly from Medicaid claim charges without additional modeling. New Mexico has had several Medicaid behavioral health managed care organizations (MCOs) over the course of the Outcomes Tracking Project. In order to examine behavioral services utilization and cost comprehensively, we compiled data provided to us from the claims databases of legacy and current organizations for services provided to New Mexico's MST Medicaid recipients. Claims were organized into service categories specified in the Collaborative Critical Indicator #9 – Service Utilization Report (CI-09). Table 3 displays the CI-09 Service Categories used and examples of services included in each category:

TABLE 3

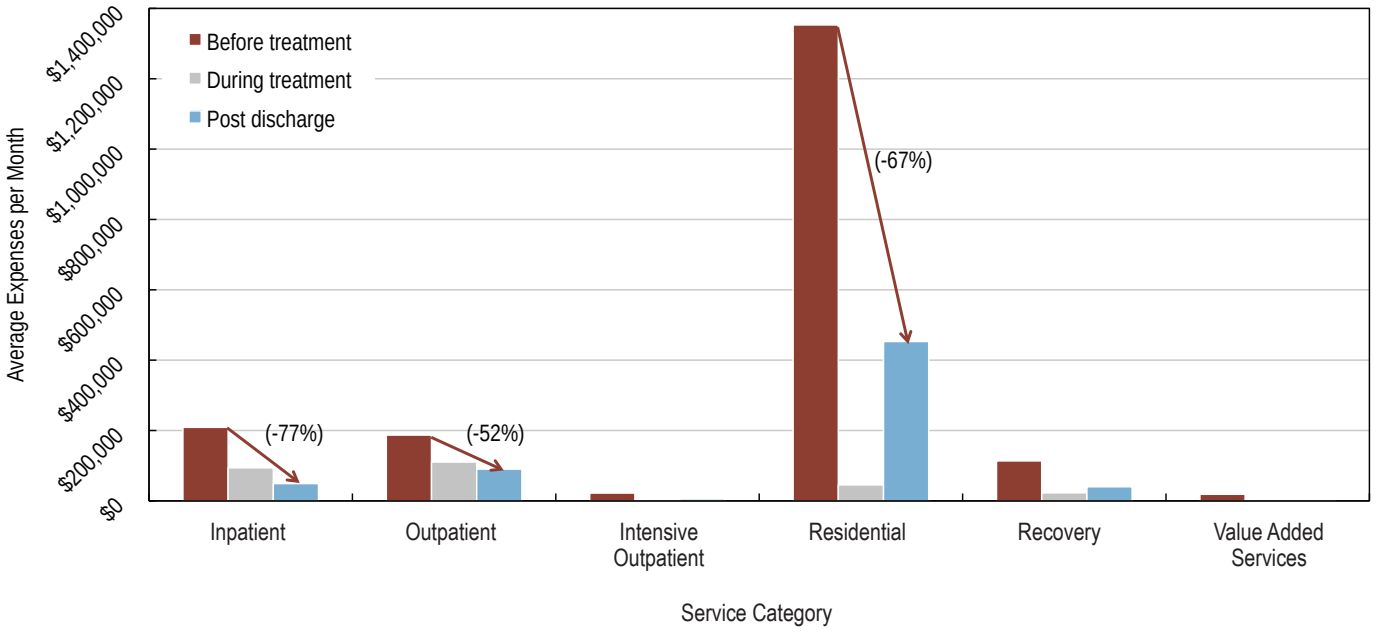
CI-09 Service Category	Example Services
Inpatient Psychiatric Services	Inpatient hospitalization; Psychiatric Emergency Services; Observation Care
Intensive Outpatient [a]	Behavioral Management Services; Intensive Outpatient Substance Abuse Program
Residential	Residential Services (ARTC and RTC); Group Home; Therapeutic Foster Care; Transitional Living
Outpatient	Day Treatment; Group, Individual and Family Therapy; Medication Management, Respite Care
Recovery	Comprehensive Community Support Services
Value Added Services	Inpatient and Ambulatory Detoxification; Home-based Services, School-Based Health Center Services

[a] Intensive Outpatient includes MST in CI-09, but MST claims were examined separately for this analysis in order to estimate the total cost of MST during the study period.

Change in Average Charges (Expenses) per Month for Paid Medicaid Behavioral Health Claims

The time periods for this analysis were identical to Average Petitions per Month with the exception of Post (24 months). The analysis of behavioral health claims showed a 66% reduction in Average Charges per Month (AC/M) from Pre to Post, from $1,903,379/month before treatment to $639,235/month after discharge from MST. Figure 5 displays the AC/M for paid service claims in each period (i.e., Pre, During, and Post) by CI-09 Service Category. Not shown are proportionate reductions in Monthly Average Charges per Youth that resulted in a savings of $4,643 per youth.

Figure 5. Average Medicaid Expenses Per Month [a] Before MST, During MST Treatment, and After Discharge from MST (*n*=1,869)



[a] **Average charges (expenses) per month** *are calculated by averaging the total charges accrued for each setting by the number of months in a given period. The total charges in each setting in a given period were divided by (a) 12 months for the Pre period, (b) 4.6 months (i.e., the average length of stay across sites) for the During period, and (c) 24 months for the Post period.*

With regard to the CI-09 Service Categories:

- Residential Services accounted for 71% of the pre-admission charges and showed a 67% reduction in AC/M.
- Inpatient and Outpatient Services represented 11% and 10% of the pre-admission charges, respectively, and showed 77% and 52% reductions in AC/M, respectively.
- Intensive Outpatient Services also showed a notable reduction of 76% in AC/M.
- Value Added Services showed the most dramatic reduction in AC/M, at 91%, but had the lowest expenditures overall, accounting for only 1% of pre-admission charges.

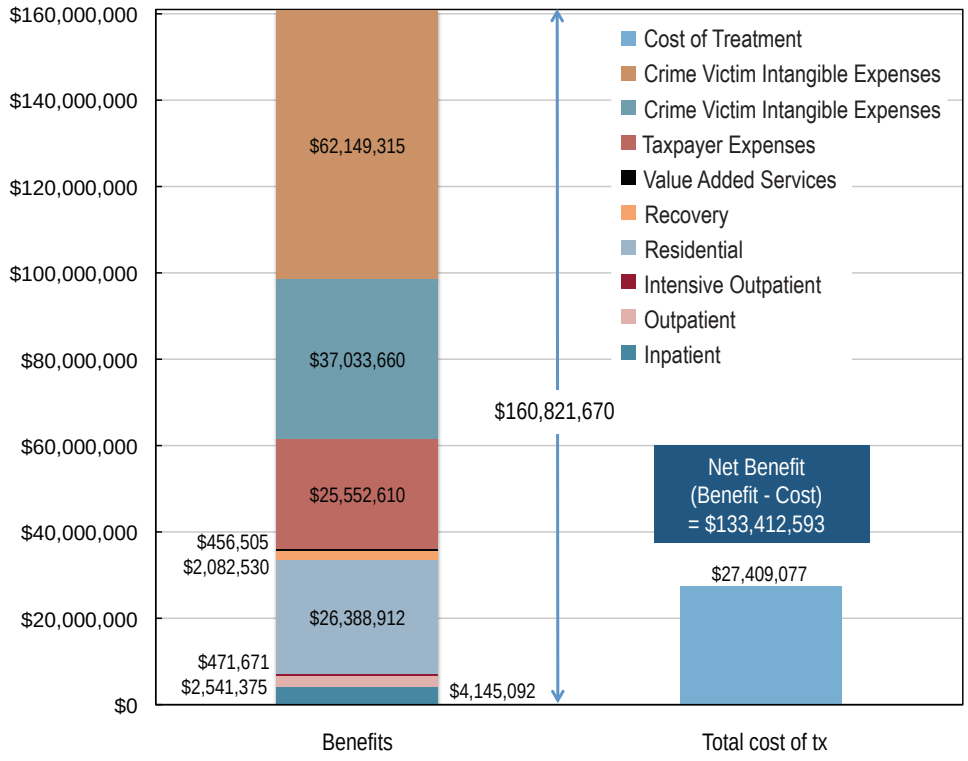
Savings, Net Benefits and Recovered Medicaid Behavioral Health Costs

MST costs of almost $27.5 million were exceeded by the cumulative savings from reduced Medicaid claims (which totaled to nearly $36.1 million) by almost $8.7 million, resulting in a Benefit-cost Ratio of 1.32. Stated differently, for every dollar that New Mexico spent on MST treatment, $1.32 was recovered in reduced behavioral health claims within two years after youth completed MST treatment.

Total Juvenile Justice and Behavioral Health Cost Benefits of MST

Figure 6 shows that MST costs of almost $27.5 million were exceeded by the cumulative savings in other areas (over $124.7 million in reduce crime-related expenses and nearly $36.1 million dollars in reduced Medicaid expenses), resulting in a net benefit of almost $133.5 million. This represents a net benefit of $71,382 per youth. The associated benefit-cost ratio was 5.87, suggesting that every dollar that New Mexico spent on MST treatment resulted in $5.87 in benefits through reductions in youth criminality and utilization of behavioral health services.

Figure 6. Estimated Total Juvenile Justice and Behavioral Health Benefits and Treatment Costs 24 Months After Discharge from MTS (*n*=1,869)



All dollar values are in 2015 dollars.

Our findings suggest that MST produced substantial cost savings to taxpayers and crime victims that exceeded the costs of treatment. Although these results should be interpreted with caution because they are based on pre-post treatment changes (rather than comparison with an alternative group that did not receive MST), there are good reasons to believe that the current study provides a valid estimate of the economic benefits of MST. First, our findings are consistent with other cost-benefit analyses of MST—based on the results of a randomized clinical trial—that estimated benefit-cost ratios ranging from 5.04[7] to 23.59[8]. The current study extends those findings by demonstrating that MST can produce economic benefits when implemented in a community setting, as opposed to the more tightly controlled conditions of a randomized study. Second, an examination of clinical outcomes in the aforementioned clinical trial found that serious juvenile offenders who did not receive an intensive intervention had high levels of re-arrest into early adulthood[9]. Thus, it seems likely that youth in the present study would have maintained high levels of serious antisocial behavior throughout the study period (with associated risk for out-of-home placements, including residential treatment) had they not received MST. Future analyses will seek to expand the current database to include data from more recent fiscal years as well as arrests/convictions from the adult criminal justice system.

Cost-Benefit Summary and Conclusions

The results of a cost analysis demonstrated significant savings of almost $133.5 million dollars as a result of decreased youth criminality (with resulting benefits to taxpayers and crime victims) and reduced utilization of behavioral health services (with resulting benefits to Medicaid) over the two years after youth completed standard MST services.

Note: The present analysis only included youth who received MST through the NM Medicaid system; such youth represented the vast majority (i.e., nearly 90%) of all youth who completed MST during the study period. Youth who completed MST through other state funding sources did not differ significantly from youth funded via Medicaid on any demographic or problem severity characteristics at admission. It is possible that the costs and benefits of delivering MST to non-Medicaid youth differ in meaningful ways from the results of the present study, although it was not possible to measure such differences (i.e., because we did not collect data on any MST treatment or other expenses for non-Medicaid youth).

[7] Dopp, A.R., Borduin, C.M., Wagner, D.V., & Sawyer, A.M. (2014). The economic impact of multisystemic therapy through midlife: A cost-benefit analysis with serious juvenile offenders and their siblings. *Journal of Consulting and Clinical Psychology,* 82, 694–705

[8] Klietz, S.J., Borduin, C.M., & Schaffer, C.M. (2010). Cost-benefit analysis of multisystemic therapy with serious and violent juvenile offenders. *Journal of Family Psychology,* 24, 657–666

[9] Schaeffer, C.M., & Borduin, C.M. (2005). Long-term follow-up to a randomized clinical trial of multisystemic therapy with serious and violent juvenile offenders. *Journal of Consulting and Clinical Psychology,* 73, 445–453

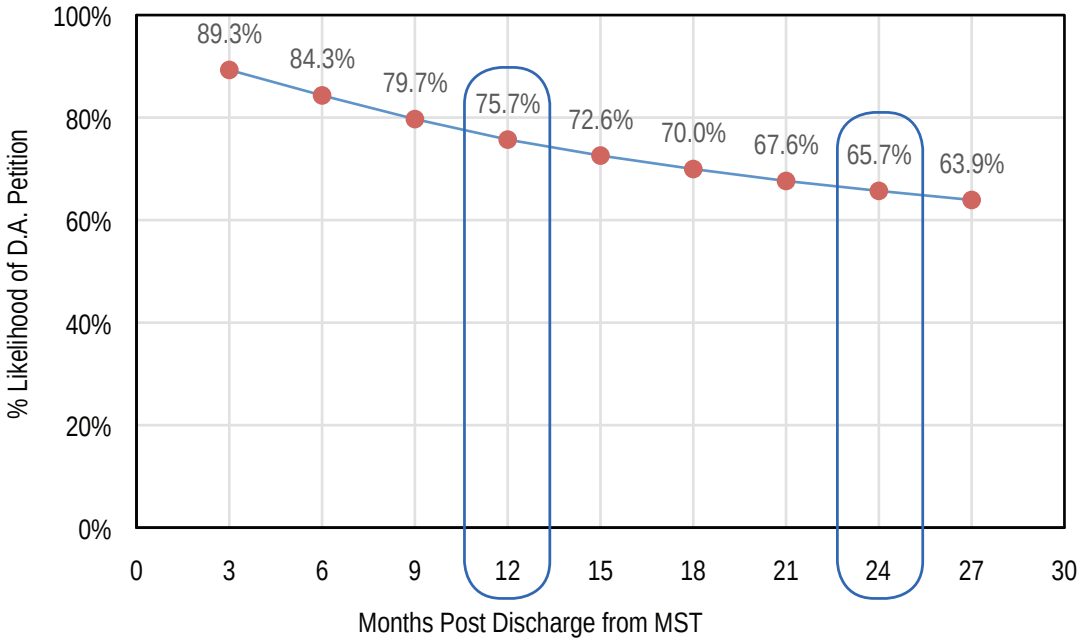
Recidivism: CYFD Juvenile Justice Statewide Database Shows Positive Outcomes for MST Youth

As noted previously, the Family Automated Client Tracking System (FACTS) is CYFD's case management system. JJS uses this system to track youth and services they receive while under CYFD care. A JJS analyst researched client records from the FACTS database for New Mexico youth who completed MST from July 2005 through December 2013 (with a 30-month posttreatment follow-up for each youth). Sixty-three percent (2,875) of the MST youth matched to the FACTS database.

Figure 8 displays a survival analysis including 2,875 youth for whom matching records were found. The analysis controlled for youth's length of time since completion of MST and showed that youth who completed MST had a 75.7% likelihood of **not** having charges filed by the District Attorney[10] during the one year following discharge; at 24 months post-completion the probability of **not** having charges filed by the District Attorney was approximately 65.7%. These recidivism rates compare favorably with those reported in a controlled research study, in which 74% of youth had not recidivated in 4 years.[11]

One year after completing MST treatment, the probability of a youth NOT having charges filed was 75.7%, after two years, 65.7%.

Figure 8. MST Survival Analysis: 2005–2015
Likelihood of Youth NOT Having Charges Filed by the District Attorney 12 and 24 Months after Completing MST Treatment (*n*=2,875)



[10] In New Mexico, District Attorney filings are referred to as petitions; a petition requires greater evidentiary burden than a referral (allegation) and is filed by the District Attorney.

[11] Borduin, C.M., Mann, B.J., Cone, L.T., Henggeler, S.W., Fucci, B.R., Blaske, D.M., & Williams, R.A. (1995). Multisystemic treatment of serious juvenile offenders: Long-term prevention of criminality and violence. Journal of Consulting and Clinical Psychology, 63, 569-578.

SUMMARY AND CONCLUSIONS

This year's report included the socio-demographic, problem severity and outcomes for New Mexico's standard MST and MST-PSB programs. The results of this nine and one-half year evaluation were very positive.

- Although the youth demonstrated very high rates of severity at admission across multiple life domains, a set of repeated measures analyses conducted for youth who completed standard MST and for whom we had data at admission, discharge, and six and twelve months after discharge, showed statistically significant improvement from admission to discharge in all areas studied, including Arrests, Overall Legal and Mental Health and Substance Abuse problems, as well as in instrumental indicators of youth and family functioning. These gains were maintained for at least twelve months after youth were discharged from MST.
  - The results of a cost analysis demonstrated significant savings of almost 12 million dollars as a result of reduced utilization of Medicaid-covered behavioral health services two years after youth completed standard MST services.
  - Youth who completed standard MST were found to have about a 73% likelihood of not recidivating (i.e., receipt of a petition) one year after completing MST treatment and about 66% at two years.

These findings demonstrate noteworthy successes across 16 counties representing New Mexico's geographic, ethnic, and economic diversity, and are consistent with other positive findings of outcomes of MST treatment with juvenile justice involved youth.

We also examined outcomes for 95 youth who completed MST-PSB (MST for problem sexual behavior).

- These youth also have high rates of problem severity at admission, but at a lower level that the standard MST youth. They are also substantially more male.
- While we were limited in the number and types of analysis we could do, our initial examination of outcomes also showed improvement in key areas, including out-of-home placement, legal, educational and vocational areas, youth and family functioning and potential to fulfill adult roles in society.
- Youth who completed standard MST-PSB were found to have about an 82% likelihood of not recidivating (i.e., receipt of a petition) one year after completing MST treatment and about 66% at 24 months.

NEXT STEPS

The partners will continue to work collaboratively to:

- Expand the use of New Mexico's internal and external databases to support and enhance the Outcome Tracking Project evaluation data;
- Develop new strategies to capture the use of services provided in other service sectors and, potentially, the economic benefits of MST services, including victim, police and prosecution cost savings.
- The next service area of focus will be expanded Juvenile Justice Services data, including types of crimes youth committed and sentencing/detention data;
- Along with the expansion of MST-PSB, we are exploring other adaptations of MST, e.g., MST for Child Abuse and Neglect, MST-Psychiatric, being implemented in New Mexico;
- Continue to adapt the evaluation to meet the needs of MST providers and their stakeholders; and
- Advocate for sustained and increased resources for MST in New Mexico.

What MST Needs From The Medicaid System

MST Services would like your Medicaid system to consider the following:

1 Allowing providers to bill the MST specific Healthcare Common Procedure Coding System (HCPCS) Code for Multisystemic Therapy - H2033 in their state Medicaid plan

- Activating the MST specific code H2033 will likely require an amendment to the state Medicaid Plan

2 Setting a rate that adequately supports the delivery of Multisystemic Therapy

Factors to consider regarding rate:

- High intensity service with low caseloads
- Treats entire ecology with therapists working in the home and community
- Significant therapist drive times
- Substantial collateral contacts in person and by phone with extended family, school & neighborhood stakeholders, etc.
- Extensive Quality Assurance work

Appropriate rate structures include:

- Case Rates
- Daily or Weekly Rates
- Unit Rates high enough to support factors above (see rate survey)

3 Crafting a service description that promotes fidelity to the evidence-based model

- Requires valid program license with MST Services
- Licensure requirement encompasses staff training and quality assurance activities

MST Medicaid Rate Summary

Samples of Multisystemic Therapy Medicaid Rates in Selected Medicaid Systems

Location	Rate	Rate Type	MCOs	Rate Published
DC	$57.42	15-minute unit	Yes-4	Yes
NE	$43.23	15-minute unit	Yes-3	Yes
NM	$48.56	15-minute unit	Yes-1	Yes
LA*	$36.01	15-minute unit	Yes-5	Yes
Average	**$46.31**			

States and MCOs may have multiple rates for MST based on region, education level of therapist, negotiated rates with providers, etc.

Note: In a unit rate structure, we highly recommend that face-to-face and phone contacts (in practice, many states have standardized on an average of 244 15-minute billing units*) with family and collateral stakeholders be **billable.**

DC Rate Source: https://dhcf.dc.gov/sites/default/files/dc/sites/dhcf/publication/attachments/Medicaid%20Reimbursement%20for%20Mental%20Health%20Rehabilitative%20Services%20Notice%20of%20Final%20Rulemaking_0.pdf
NE Rate Source: http://dhhs.ne.gov/Documents/471-000-532.pdf
NM Rate Source: https://www.hsd.state.nm.us/wp-content/uploads/FileLinks/63e11e4bdee34c68b133c1607f22bc54/LOD_19_Medicaid_Provider_Payment_Rates.pdf
LA Rate Source: https://www.lamedicaid.com/provweb1/fee_schedules/SBH_FS.pdf

Return to Table of Contents

For more information about Multisystemic Therapy, contact MST Services

843.856.8226
www.mstservices.com
info@mstservices.com

ATLANTA
3490 Piedmont Rd NE
Suite 304
Atlanta, GA 30305

SAN FRANCISCO
1100 Moraga Way
Moraga, CA 94556

MST®
Services