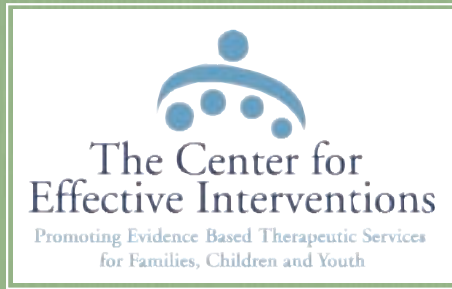


BRIEF

EVALUATION



Colorado MST
OUTCOMES
Tracking Project

Aggregate
RESULTS
for Six
Colorado
MST Providers

JULY 2005 - JANUARY 2008



Introduction

Contents of This Brief

This annual report is based on thirty-one months of data from the CO/NM Enhanced MSTI Website. It presents data on Colorado youth enrolled in MST services from July 2005 through January 2008 who completed MST treatment. Characteristics of youth at admission and outcomes at discharge (as reported by therapists) and six and twelve months after discharge (as reported by telephone interviews with caregivers) are presented in the legal, mental health, substance abuse, and out-of-home domains, as well as in key indicators of youth and family functioning.

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 place heavy burdens on legal, educational and child welfare systems and disrupt their families, schools and communities. Multisystemic Therapy (MST) is one of the few interventions that has proven to be effective with this difficult population.

This brief summarizes and highlights data from an ongoing evaluation of MST services delivered by six Colorado providers. It reports on demographic and outcome information for 779 youth who received MST treatment in Colorado during the July 2005 to January 2008 outcome tracking period.

The outcome evaluation produced striking results.

Over 80% (779) of the 966 youth who were admitted and discharged during the thirty-one month period completed the program.¹ From admission to discharge, these young people made positive changes in nearly every outcome area studied, including legal issues, mental health problems, out of home living situations, and key indicators of youth and family functioning. Moreover, youth who completed MST treatment and for whom we had complete six- and twelve-month post-discharge data from youth's caregivers demonstrated maintenance of most of these gains twelve months after they completed the program. At six and twelve months, youth's caregivers also reported youth were doing better in five "key factors" of youth and family functioning. Changes in involvement in Substance Abuse Domain throughout all time periods do not reach statistical significance.

¹ Completing MST: Discharge was "based upon the mutual agreement of the primary caregiver(s) and the MST team" and does not necessarily indicate successful treatment.

OUTCOMES

Multisystemic Therapy

Multisystemic Therapy (MST) is an intensive home-, family- and community-focused treatment for youth with serious anti-social behavior and their families. MST has been shown to reduce the youth's criminal offending, out of home placements and mental health problems and to improve family functioning. Developed by clinicians and researchers at the Medical University of South Carolina in the 1970's, MST teams are now located worldwide, including 17 Colorado counties.

The Colorado MST Outcomes Tracking Project

The Colorado MST Outcomes Tracking Project (CO-MST-OTP) documents demographic and outcome data regarding youth and families who have received MST services from the six provider agencies listed below. It has been under development since fall 2003. With funding from the Juvenile Accountability Incentive Block Grant (JAIBG) Program, CEI contracted with Focus Research & Evaluation to create and pilot a statewide outcomes database for youth who receive MST treatment in Colorado. CEI continued funding the project after external funds ended. MSTI joined the collaboration early in the development phase, followed by the state of New Mexico shortly after the pilot phase was completed. 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 Partners

The partners involved in the Colorado MST Outcomes Tracking Project (CO-MST-OTP) are:

- › **The Center for Effective Interventions (CEI)** - which provides support and consultation to MST teams in Colorado and surrounding western states.
- › **Focus Research & Evaluation** – an independent program evaluation consulting practice based in Colorado
- › **MST Institute (MSTI)** – a non-profit organization that provides web-based information and quality assurance tools to programs implementing MST.
- › **New Mexico MST Outcomes Tracking Project** – funded by the state of New Mexico through its Children, Youth & Families Department, this project has similar goals to CO-MST-OTP and joined the project in the spring of 2005.

Also participating are six Colorado MST provider agencies with 16 teams:

- › **Chins Up**, Greater Colorado Springs, Western Slope (three teams)
- › **Jefferson Center for Mental Health**, Jefferson County (one team)
- › **Larimer Center for Mental Health**, Larimer County (two teams)
- › **North Range Behavioral Health**, Weld County (two teams)
- › **Peaceful Spirit**, Ignacio (one team)
- › **Savio House**, Metro Denver and Greater Colorado Springs (7 teams)

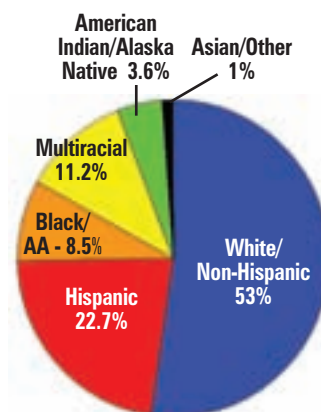
This evaluation brief is a joint product of all these entities. Together, the partners developed the database and tracking system that provided the foundation for separately funded and reported MST evaluation efforts in Colorado and New Mexico.

Youth Who Completed MST Treatment

Sociodemographic Characteristics at Admission

Of the 966 Colorado youth who enrolled in MST treatment during the 31-month evaluation period, 779 (81%) completed MST treatment. Notable characteristics of the youth who completed MST treatment include:

- About 60% who completed MST were male.
- Youth, on average, were about 15 years old at admission. About one-fourth were age 14 or younger and almost half were 16 years or older.
- Just over half (53%) of the youth who completed MST were White, 23% were Latino/Hispanic, and 9% were Black/African American. A relatively high proportion of the youth (11%) were multiracial.
- Most youth were living at home at the time of admission (78%). Ten percent were in a juvenile justice setting-most likely detention.



Problem Severity at Admission to MST

Youth who enrolled in and completed MST treatment demonstrated serious problems in many areas of their lives. During the three months before admission, nearly two-thirds of the youth had lived out of home, 30% in a juvenile corrections facility. About 60% were not passing most classes and nearly two-thirds displayed multiple disciplinary problems in school; almost two-thirds had been arrested; two-thirds exhibited multiple mental health problems; and about one-third of the youth had co-occurring mental health and substance abuse problems. Many (39.9%) had been prescribed psychiatric medications for other than attention deficit during the year before enrollment.

OUTCOMES

Outcomes

The 779 youth who were admitted and discharged between July 2005 and December 2007 and who completed MST treatment were considered for inclusion in this year's analyses. As shown in Table 1, about one-fourth of the youth had 6-month data, almost 16% had 12-month data, and about 10% had data available at each of the four points in time.

TABLE 1. Data Available for Analysis

Youth who Completed MST	N (%)	Type of Analysis
Total Admission and Discharge	779	Change between two points in time (Paired Analysis)
Admission/Discharge + 6 Month	190 (24.39%)	Change between two points in time (Paired Analysis)
Admission/Discharge + 12 Month	121 (15.53%)	Change between two points in time (Paired Analysis)
Admission/Discharge + 6 AND 12 Month	75 (9.63%)	Change over time (Longitudinal Analysis)

In order to maximize the use of the available data, we conducted paired and longitudinal, also known as repeated measures, analysis.

Paired Analyses

Table 2 displays the youth outcomes from admission to discharge, from admission to six months after discharge, and from admission to twelve months after discharge in Out of Home, Legal Problems, and Mental Health Problems. **Paired analyses are conducted between two points in time for youth who have valid data (neither missing nor don't know responses) at each point in time.** The number of youth included in each analysis and the percent of youth with the problem from admission to each point in time is displayed for each comparison. For example, *for youth with data at each point*, 60.5% of youth experienced an out of home event during the year prior to admission; 22% were out of home during treatment; 39.5% during the 6 months after discharge; and 36.4% between 6 and 12 months after discharge.

A statistically significant lower percent of youth (for whom we had data) demonstrated problems in all areas at discharge and 6 and 12 months after discharge compared to admission. The declines from before/at admission to during treatment/discharge

TABLE 2. Paired Analysis

Outcomes in Selected Domains for Youth who Completed MST and with Data at each Time/Comparison Period*
Percent of Youth with Problem at Each Time

	Any Out of Home (n) %	Arrested (n) %	More than One Legal Problem (n) %	More than One MH Problem (n) %
Before/At Admission	(n = 755) 60.5%*	(n = 755) 63.8%	(n = 416) 58.4%	(n = 515) 62.4%
From: Before/At Admission To: During Treatment/Discharge	↓ (n = 755) 22.5%	↓ (n = 707) 15.6%	↓ (n = 416) 25.2%	↓ (n = 515) 13.4%
From: Before/At Admission To: 6 Months After Discharge (during previous 6 months)	↓ (n = 190) 39.5%	↓ (n = 172) 17.4%	↓ (n = 190) 15.8%	↓ (n = 190) 35.3%
From: Before/At Admission To: 12 Months After Discharge (during previous 6 months)	↓ (n = 121) 36.4%	↓ (n = 110) 14.7%	↓ (n = 121) 20.7%	↓ (n = 121) 37.2%

* Each comparison is independent and is based on available data (i.e., youth included in admission to 6 month comparisons are not necessarily the same youth in the admission to 12 month comparison). Percentages for 6 and 12 months represent the percent of youth with problems for each set of youth with data, a subset of the youth at admission.

All changes were statistically significant, $p < .001$ (McNemar Test).

are most dramatic. These are very encouraging results. Since the youth included in each comparison are not necessarily the same

youth, these outcomes should be viewed and interpreted as a guide or generally observed outcome trends.



Youth and Family Functioning

MST considers five measures of youth and family functioning to be “key factors” that indicate whether positive changes will be maintained after the youth leaves treatment. These measures report the clinicians’ judgments regarding parents’ skills, family relationships, the family’s use of networks and supports, and the youth’s educational/vocational success and involvement with pro-social peers. As shown in the table to the right, the Colorado youth and families who completed MST showed positive changes on all these measures between admission and discharge.

TABLE 3. Youth & Family Functioning (Therapist Ratings)

Youth & Family Functioning (Therapist Ratings)	Presenting Skills	Family Relations	Networks/ Supports	Education/ Vocational Skills	Prosocial Involvement
Change from: Admission to Discharge					

All changes were statistically significant, $p = .000$ (Paired T-Test)

Six and twelve months after discharge, caregivers (rather than clinicians) were asked to rate their youth’s progress over the past six months in each of the five areas of functioning using a five-point scale (1=youth is doing much worse to 5=youth is doing much better). The caregivers described their youth as doing better to much better on all measures (unpaired display with no statistical testing).

TABLE 4. Youth & Family Functioning (Caregiver Ratings)

Youth & Family Functioning (Caregiver Ratings)	Following Rules	Family Getting Along	Contact With Network	Education/ Vocational Skills	Prosocial Involvement
Change from: Discharge to 6 Months					
Change from: 6 Months to 12 Months after Discharge					

Longitudinal Changes across Four Points in Time: Admission, Discharge, and Six and Twelve Months after Discharge

While the paired analysis and snapshots presented a very positive picture of outcomes, we also wanted to use an analytic technique that measures change over time for the same youth. This approach provides a more direct and powerful way to assess change. As shown previously in Table 1, about 10% ($n=75$) of these youth had data available at each of the four points in time. Since these youth did not differ substantively from the youth without a full set of follow-up data, we proceeded to conduct analyses designed to address the sustainability of outcomes by measuring change over time.

Repeated Measures Analysis of Variance (ANOVA) was used to explore changes in the level of involvement in 4 areas: Arrests for Specific Types of Crimes, Legal Problems, Mental Health Problems and Services, and Substance Abuse Problems and Services. Since only youth with valid data at each point in time could be included in the analyses, each analysis also indicates the number of youth for whom data were available for that domain. All of the items used within each life domain are answered either Yes or No, which allows us to describe whether a youth had a particular problem, but not the severity of the problem. To enhance these analyses, scales were created based on the count of incidents (items answered Yes) in each domain as an imperfect proxy for severity. For example, if the person doing the scoring reported that the youth had three legal incidents before intake, the level of involvement with the legal system was 3.

OUTCOMES

Longitudinal Changes, continued

Legal Issues

Since MST targets juvenile offenders, changes in legal status are among the program's most important outcomes and were measured in two ways.

Level of involvement: Arrests for Various Types of Crimes

There were six possible types of crimes that were counted for this scale: Crimes against Persons; Crimes against Property; Drug law Violations/Crimes; Crimes against Public Order; Violations of Court Proceedings; and Status Offenses. Figure 1 shows a statistically significant decrease in the level of involvement for various crimes from intake to discharge that was sustained through six and twelve months after discharge.

Level of involvement: Legal Events

There were twelve possible types of legal involvement that were counted for this scale: Diversion/Informal Probation; Detained (Juvenile); Committed (Juvenile); Regular Probation; Intensive Probation/Supervised Probation; Parole; Adult Incarceration; Community Service; Deferred/Waived Adjudication; Consent Decree Agreement; Electronic Monitoring; Drug Court/Wellness Court/Mental Health Court; Truancy Court. Figure 2 shows a statistically significant decrease in the level of legal involvement from intake to discharge that was sustained through six and twelve months after discharge.

Figure 1. Level of Involvement: Arrests for Various Types of Crimes (Maximum of 6 Types of Arrest) N=55

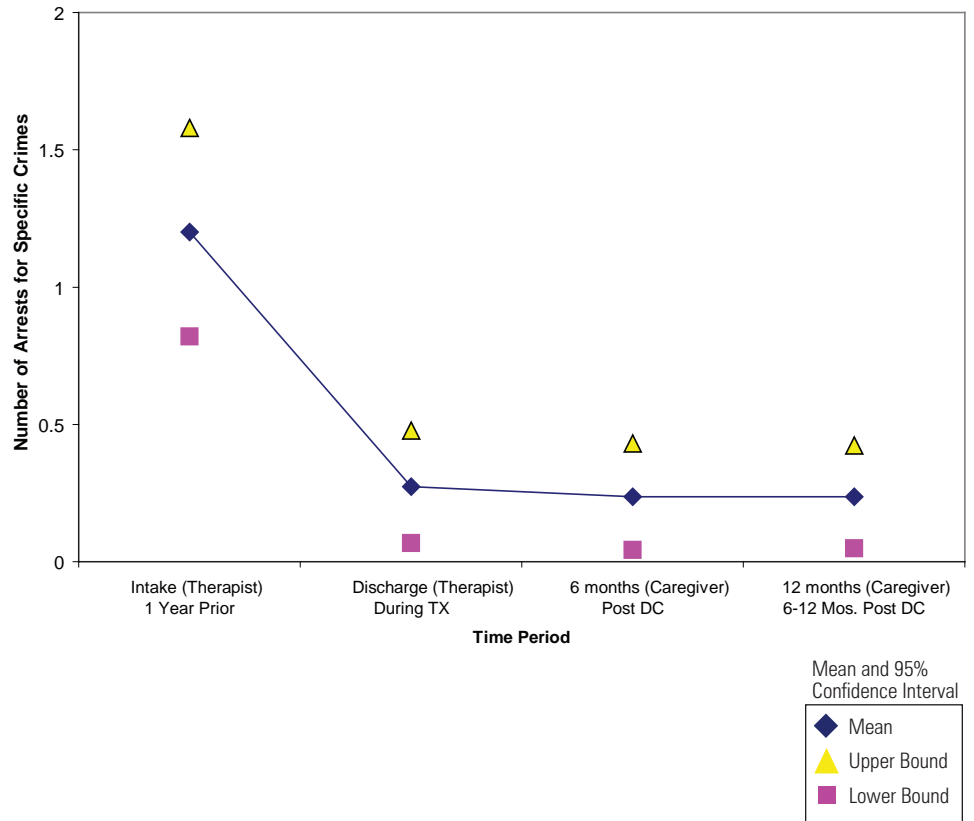
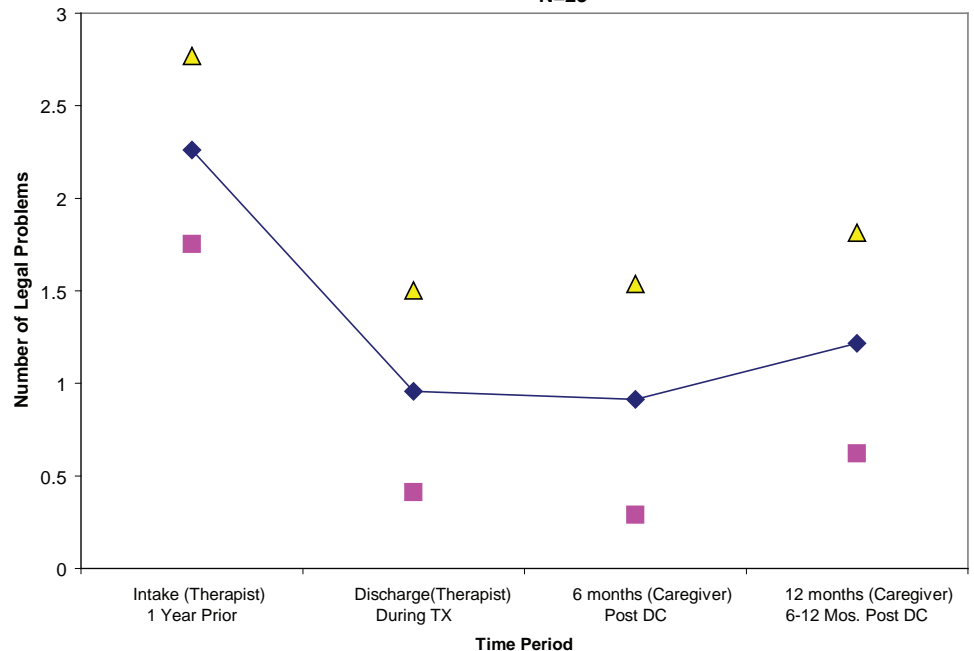


Figure 2. Level of Involvement: Legal Problems (Maximum of 12 Types of Legal Problems) N=23



Mental Health and Substance Abuse Issues

Mental health and substance abuse disorders are considered to be major contributors to juvenile offenders' legal and other issues. For this reason, reducing mental health and substance abuse symptoms and issues are a major focus of MST treatment.

Level of involvement: Mental Health

There were ten possible types of mental health problems that were counted for this scale: Aggressive; Depression; Attention problems or excessive energy that interferes with learning; Worried, fearful, anxious or tense; Trauma; Suicidality; Hospitalized or received residential treatment; Other mental health treatment; Prescribed medication other than for attention problems; and Special Education. Figure 3 shows a statistically significant decrease in the level of mental health and services involvement from intake to discharge, with an increase at six months after discharge that was not statistically significant, but no further increase at twelve months after discharge.

Level of involvement: Substance Abuse

There were five possible types of substance abuse problems that were counted for this scale: Substance Abuse Diagnosis; Problems as a Result of Alcohol Use; Problems as a Result of Drug Use; Detox Services; and Other Treatment for Drug or Alcohol use. Figure 4 shows changes in the level of substance abuse involvement over time that did not reach statistical significance.

These analyses demonstrated that MST treatment produced statistically significant reductions in the level of involvement in the Arrests, Overall Legal, and Mental Health domains from Intake to discharge that were sustained through twelve months. Changes in involvement in Substance Abuse did not reach statistical significance.

Figure 3. Level of Involvement: Mental Health
(Maximum of 10 Types of Mental Health Problems/Services)
N=23

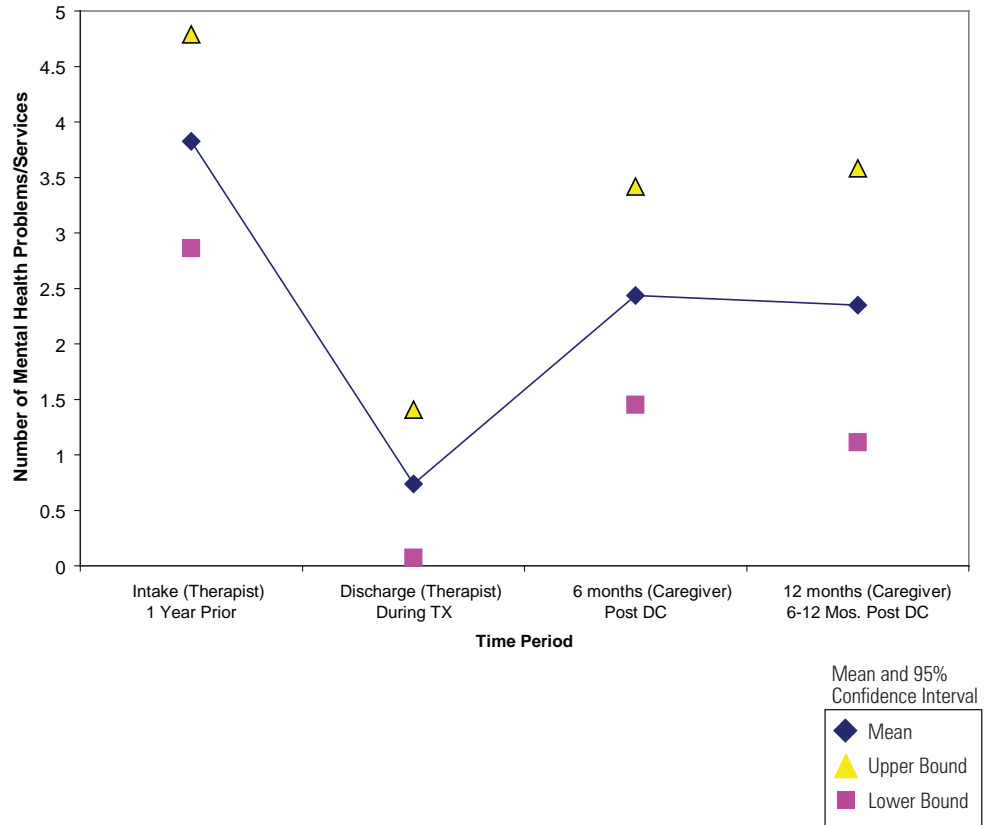
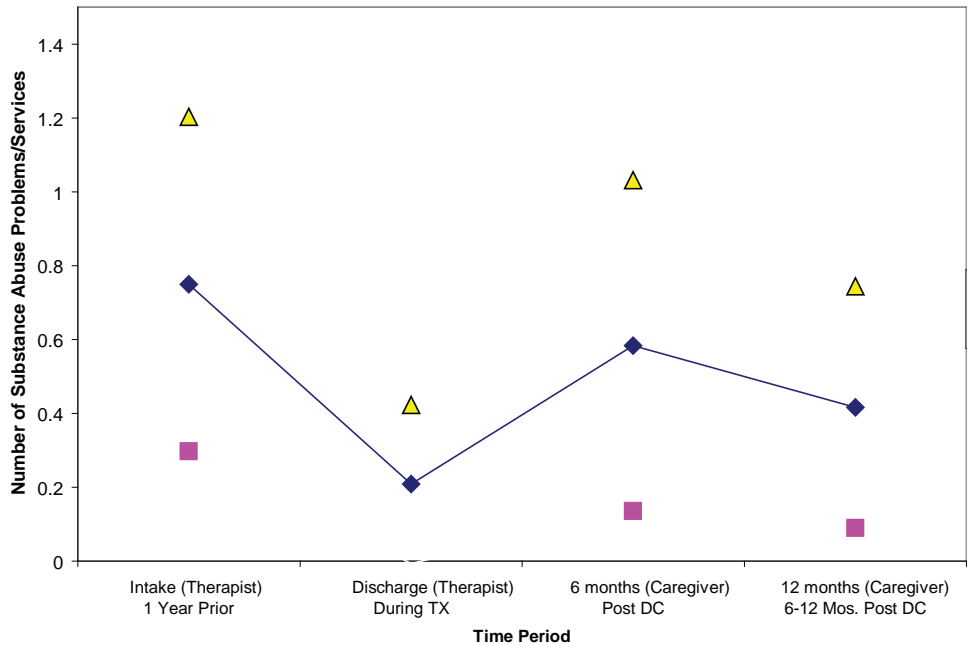


Figure 4. Substance Abuse
(Maximum of 5 Types of Substance Abuse Problems/Services)
N=24



Conclusions

Overall, the results of this thirty-one-month evaluation are very positive. A series of analyses compared the rate at which youth were reported to have experienced Out of Home days, Arrests, and Legal and Mental Health Problems from admission to discharge, admission to six months, and admission to twelve months. **A statistically significant lower percent of youth (for whom we had data) demonstrated problems in all areas at discharge and six and twelve months after discharge compared to admission.**

Furthermore, a set of repeated measures analyses for a small group of youth who completed 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 almost all areas studied, including legal and mental health problems and key indicators of youth and family functioning. These gains were maintained for at least twelve months after they were discharged from the program. There were no statistically significant changes in involvement in the Substance Abuse Domain over time.

These findings demonstrate noteworthy successes across 17 counties representing Colorado's geographic, ethnic, and economic diversity, and are consistent with other positive findings of outcomes of MST treatment with juvenile justice involved youth.



CONCLUSIONS

Next Steps

The partners will continue to work collaboratively to:

- ▶ Disseminate use of The OnDemand MST Outcomes Report Utility, which allows providers to generate, locally, demographic and outcomes data based on their data stored in the CO/NM MSTI Enhanced Website;
- ▶ Use the lessons learned from this second annual report based on Website data to improve the reliability and management of the data, including increasing the rate of follow-up data collection;
- ▶ Develop strategies to ensure the usefulness of the data at a clinical level; and
- ▶ Advocate for increased resources for MST in Colorado.



For more information or additional copies contact:

David Bernstein, Director
The Center for Effective Interventions
Metropolitan State College of Denver
900 Auraria Parkway, Suite 129
Denver, Colorado 80204

303-352-4203
bernstei@mscd.edu