Washington State
Institute for
Public Policy

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April 2009

A Pilot Program for Evidence-Based Children's Mental Health Services: Characteristics of Participants Enrolled in Multi-Systemic Therapy

Introduction

In the 2006 session, the Legislature allocated $450,000 for fiscal year 2007 to the Department of Social and Health Services' (DSHS) Mental Health Division (MHD) to establish a pilot program (the Pilot) to provide evidence-based mental health services for children.[1] The services offered by the pilot were to be selected from a list of evidence-based practices (EBPs) developed by DSHS in consultation with experts in children's mental health.

The Legislature also directed the Washington State Institute for Public Policy (Institute) to study the Pilot.[2] As detailed in the legislation, the following outcomes are to be examined:

- Mental health service delivery
- Hospital utilization
- Residential or out-of-home placements
- Utilization of child welfare services
- School attendance
- Involvement in juvenile justice
- Cost-effectiveness

This preliminary report describes the key characteristics and system involvement of 114 youth enrolled in Multi-Systemic Therapy (MST), the first EBP implemented at the Pilot during its first 20 months (April 2007 through December 2008). Subject to funding, a report describing preliminary outcomes will be published in December 2009, and a final report in December 2010.

Suggested citation: J. Mayfield & S. Lee (2009). *A pilot program for evidence-based children's mental health services: Characteristics of participants enrolled in Multi-Systemic Therapy*, Olympia: Washington State Institute for Public Policy, Document Number 09-04-3902.

[1] ESSB 6386 §204 (1), Chapter 372, Laws of 2006.
[2] ESSB 6386 §607 (9), Chapter 372, Laws of 2006.

Summary

In 2007, by legislative direction, the Washington State Department of Social and Health Services' Mental Health Division established a pilot program to provide evidence-based mental health services to children.

The Thurston-Mason Children's Mental Health Evidence-Based Practice Pilot Project (the Pilot) is a collaborative effort among county, state, and private agencies. A core team from the collaboration assessed the needs of the community, identified target populations for service, and specified expected impacts of the Pilot. Multi-Systemic Therapy (MST) is the first evidence-based practice chosen for the Pilot. This intervention for youth focuses on improving the family's capacity to overcome the known causes of a child's delinquency. Prior research indicates that the long-term benefits of MST exceed program costs by over $18,000 per child enrolled.

The Pilot enrolled 114 youth in MST between April 2007 and December 2008. The majority of these children (69 percent) were referred from the juvenile justice and public mental health systems; 14 percent were referred from the state's child welfare system; the remaining referrals were from schools or other local partner agencies. Using linked administrative data from multiple state agencies, we produced a profile of the first 103 youth served by the program.

In Brief:

- 96 percent of youth enrolled in MST had prior involvement in at least one state system associated with juvenile justice, child welfare, or mental health; 74 percent were involved in multiple systems prior to enrolling in MST.
- Most (89 percent) youth enrolled in MST were previously enrolled in the public mental health system. The typical youth was diagnosed with disruptive behavioral or attention deficit/hyperactivity disorders and considered moderately impaired with regard to psychological, social, and school functioning.
- 70 percent of youth enrolled in MST had felony or misdemeanor convictions; assaults were the most common charge leading to conviction; 50 percent had a history of detention (averaging 48 days).
- 30 percent of youth enrolled in MST had referrals to Child Protective Services that were accepted for investigation; 21 percent experienced previous out-of-home placements.

Subject to funding, a report on outcomes associated with enrollment in MST will be published in December 2009.

Pilot Site and Program Development

The Thurston-Mason Children's Mental Health Evidence-Based Practice Pilot Project is a collaborative effort comprising the following agencies:

- Thurston Mason Regional Support Network (RSN)
- Behavioral Health Resources (BHR)
- Community Youth Services
- University of Washington Division of Behavioral Health and Justice Policy
- Department of Social and Health Services
- School districts
- Juvenile court officers and police
- Various private agencies

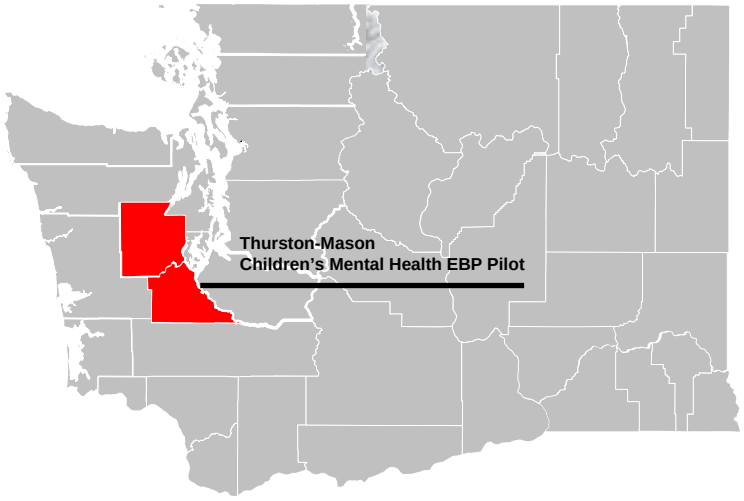
The contract for the Pilot was executed between DSHS and the Thurston Mason RSN, which contracted with BHR as the lead agency for implementation. A *core team* was established, consisting of the Thurston Mason RSN, BHR, DSHS Children and Family Services, Mason County Juvenile Court, and Community Youth Services. The core team assessed the children's mental health needs of the community and identified target populations, EBP options, and the expected impacts of any EBP implementation.[3] The Legislature also directed DSHS to contract with the University of Washington to provide training, quality assurance, and to monitor implementation and outcomes at the Pilot site.[4]

The Pilot's target population includes children in Thurston and Mason Counties who present significant behavioral, emotional, and mental health challenges in multiple systems (e.g., child protective services, mental health, schools, juvenile justice, juvenile rehabilitation). Additionally, to ensure sustainability of funding beyond the scope of the budget proviso, the target population includes only those children who meet access to care standards set by the DSHS Division of Mental Health.

After considering a variety of alternative EBPs, the group selected Multi-Systemic Therapy (MST) as the first EBP to be provided by the Pilot. The Pilot began providing these services in April 2007.

The Pilot has subsequently introduced three additional EBPs: Trauma-Focused Cognitive Behavioral Therapy (TF-CBT), in collaboration with the Skokomish Tribe, the Triple P—Positive Parenting Program, and the Parent Empowering Program. Each of these programs was in early implementation stages at the time of this report.

Exhibit 1
Thurston-Mason Children's Mental Health Evidence-Based Practice Pilot Project



Multi-Systemic Therapy (MST), the first EBP chosen by the Pilot, is an intervention for youth that focuses on improving the family's capacity to overcome the known causes of a child's delinquency. Its goals are to promote the parents' ability to monitor and discipline their children and replace deviant peer relationships with pro-social friendships.

At the Pilot, trained MST therapists, working in a team consisting of four to five clinicians with masters degrees, have a caseload of four to six families. The intervention typically lasts between three and six months. In addition to consultation provided by the University of Washington, MST, Inc., in Charleston, South Carolina, trains and clinically supervises all MST therapists. MST, Inc. also monitors the program to ensure fidelity.

Based on an Institute analysis of 10 rigorous studies examining criminal justice outcomes, MST effectively reduced state and crime victim costs. The expected lifetime net benefit for every youth enrolled in the program is over $18,000.

Source: S. Aos, M. Miller, & E. Drake (2006). *Evidence-based public policy options to reduce future prison construction, criminal justice costs, and crime rates.* Olympia: Washington State Institute for Public Policy, Document No. 06-10-1201.

[3] *Thurston-Mason Children's Mental Health Evidence-Based Practice Pilot Program Strategic Plan.* December 29, 2006. Draft.

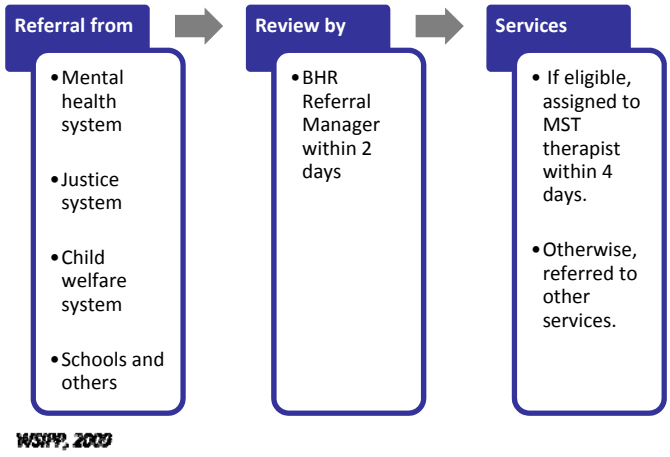
[4] University of Washington School of Medicine's Department of Psychiatry and Behavioral Sciences Division of Public Behavioral Health and Justice.

Program Implementation

As specified in its Strategic Plan, the Pilot aims to provide MST to children in Thurston and Mason Counties who meet the following criteria: "Youth 12–17 years of age with an available family/potential support structure who are exhibiting behavioral challenges, significantly interrupting functioning across multiple domains, and/or are at high risk of being placed out of home." [5]

Children presenting with issues and known as "high-end" users of multi-system services are identified by knowledgeable staff at participating agencies and considered for treatment. A simplified illustration of the referral, screening, and enrollment process is provided in Exhibit 2. For a detailed diagram, see the Appendix.

Exhibit 2
Thurston-Mason Children's Mental Health Evidence-Based Practice Pilot Project

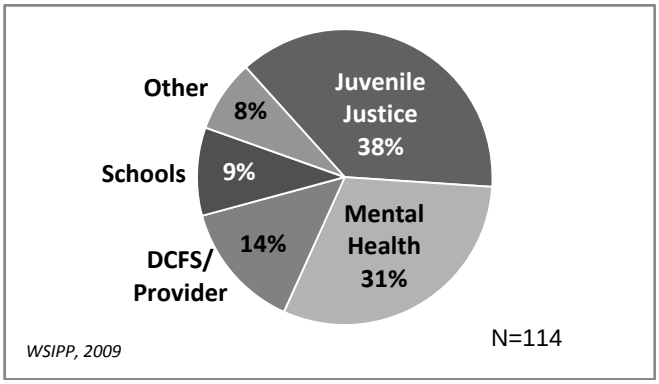


The Pilot's MST services have been marketed extensively, according to Pilot staff, and there is considerable cooperation among local community agencies serving youth. High service-utilizing children "presenting issues" at participating agencies are referred to BHR's Pilot Referral Manager.[6] Possible referral sources include representatives of local justice, child welfare, mental health, and other systems:

- Court and detention officers
- Staff at Tumwater or Shelton Division of Children and Family Services and contractors
- Clinicians or other staff at Behavior Health Resources
- Outreach workers at Thurston Mason RSN
- Staff at schools and other partner agencies

As displayed in Exhibit 3, the majority (69 percent) of MST enrollees are referred from the juvenile justice and mental health systems.

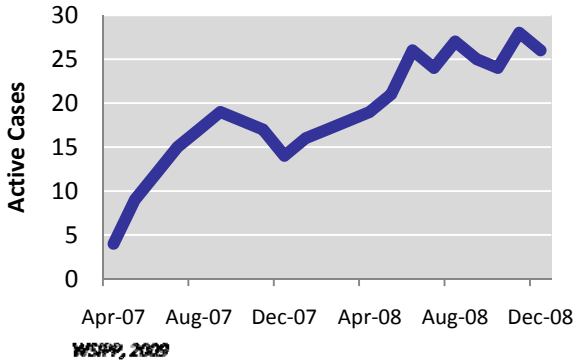
Exhibit 3
Referral Sources for Youths Enrolled in MST (April 2007 to December 2008)



After the Referral Manager determines whether or not a child meets MST criteria, that child is either assigned an MST therapist or referred to other services. Final determination regarding enrollment in MST is made within eight days of the original referral.

Of 115 referrals made between April 2007 and December 2008, one was denied enrollment in MST due to age. After a "ramping up" period of just over a year, the Pilot now maintains a caseload of 24 to 28 MST enrollees who are served by 4.75 FTE therapists (Exhibit 4).

Exhibit 4
Active MST Cases per Month



The University of Washington conducted a process evaluation of the first year of the Pilot, describing how members of the collaborative communicated, engaged community members, and selected and implemented the EBP.[7] The University of Washington continues to monitor and advise the Pilot on a regular basis.

[5] *Thurston-Mason children's mental health evidence-based practices project: Strategic plan,* September 2008, p. 8.
[6] Conversation with Gary Enns and Andrea Parrish, November 25, 2008.

[7] S. Kerns (2008). *Thurston-Mason children's mental health evidence-based practices pilot project: Process evaluation.* Program fidelity is promoted by periodic monitoring by MST, Inc.

Demographic Characteristics of Youth Referred to MST

Exhibit 5 displays the distribution of youth referred to the Pilot's MST program (from April 2007 through December 2008) by location, gender, age, and race.

Exhibit 5
Demographic Characteristics of Youth Referred to MST at the Pilot From April 2007 to December 2008

	Total Referred *n=115**	Percentage of Referred *n=115**
County		
Thurston	86	75%
Mason	29	25%
Gender		
Female	41	36%
Male	74	64%
Age		
< =10 years	5	4%
11 years	9	8%
12 years	9	8%
13 years	13	11%
14 years	16	14%
15 years	28	24%
16 years	20	17%
17 years	15	13%
Race/Ethnicity		
White	100	87%
Hispanic	8	7%
African American	1	1%
Native American	2	2%
Asian/Pacific Islander	4	3%

**The number of referrals (115) includes one child under the age of 10 who was not enrolled in MST.*
Source: TMRSN MST Monthly Service Delivery Report

- **Location.** Three-quarters of referrals came from agencies in Thurston County and the remaining 25 percent from Mason County. This roughly reflects the composition of the total child population, aged 10 to 17, of the Pilot counties (82 percent are from Thurston and 18 percent are from Mason).[8]
- **Gender.** Reflecting the high number of referrals from the justice system, boys represent the majority (64 percent) of youth referred to MST.
- **Age.** Youth referred to MST ranged in age from just under 10 to 17.[9] They averaged 14 years of age and the majority (55 percent) fell between the ages of 14 and 16, inclusive.
- **Race.** Children referred to MST were predominately white (87 percent) followed by the next largest group referred, Hispanic youth (7 percent). African Americans, Native Americans, Asians, and Pacific Islanders compose the remaining 6 percent of youth referred to MST.

  In comparison, the racial composition of all youth aged 10 to 17 in the two counties combined is 81 percent white, 8 percent Hispanic, 3 percent African American, 3 percent Native American, and 7 percent Asian or Pacific Islander.[10]

Involvement in Public Systems

The target youth for the Pilot MST program are those who present significant challenges to multiple, publicly funded systems. The following summarizes their involvement in these systems according to state records. This analysis, based on the experiences of the first 103 uniquely identified children enrolled in the program,[11] shows significant involvement in state mental health and criminal justice systems and, to a lesser extent, the child welfare system.

Multiple System Involvement. As Exhibit 3 demonstrates, 83 percent of the children referred to the Pilot MST program were referred by an agency in one of the following state systems: juvenile justice, public mental health, or child welfare.

Administrative records maintained by state agencies show the extent to which MST enrollees have been involved in these three systems. As illustrated in Exhibit 6, about 74 percent of the youth were involved in more than one system prior to enrollment; 18 percent had been involved with all three systems; and 4 percent had no previous involvement in the state systems or were not identifiable in the state's administrative data.[12] These figures demonstrate that the Pilot is reaching multi-system users, as intended.

[8] Washington State Office of Financial Management website. <http://www.ofm.wa.gov/pop/race/detailedtable08.asp>. Table: *Detailed Table of April 1 Population Estimates by County by Age, Gender, Race, and Hispanic Origin: 2008.*

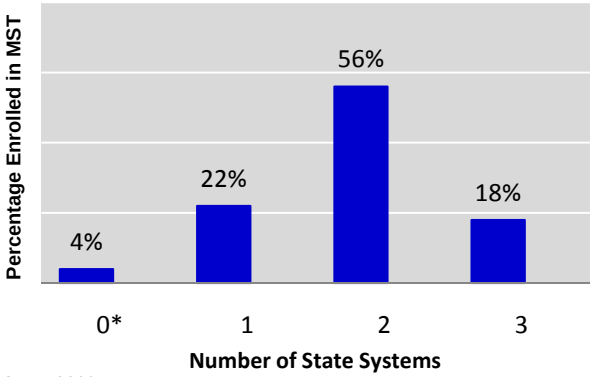
[9] One child was under the age of 10 and not enrolled in MST.

[10] Washington State Office of Financial Management (http://www.ofm.wa.gov/pop/race/default.asp). Percentages do not add to100 due to combinations of race and ethnicity.

[11] Due to lags in the administrative data used for this analysis, data were not available for all 114 children enrolled through December 2008. If a child was enrolled more than once, the analysis focused on the first encounter.

[12] "Involvement" in each state system is defined as follows: enrolled in the state public mental health system; any criminal convictions; or referrals accepted for investigation by child protective services.

Exhibit 6
Number of Systems Involved With Prior to Enrolling in MST: Juvenile Justice, Mental Health, Child Welfare



WSIPP, 2009
*Describes involvement in state systems only. Youth may also be involved with other local partners such as schools or interventions that do not trigger an identifiable record in the state administrative data systems.

Public Mental Health System

Using MHD administrative data, we examined the prior involvement of MST enrollees in the public mental health system. During the year prior to being enrolled in MST, we summarized their use of outpatient services, psychiatric inpatient treatment, and crisis services, diagnoses, and functioning levels. Prescriptions provided to those eligible for fee-for-service medical assistance are also described.

Prior Involvement. According to MHD records, 92 of the 103 MST participants examined (89 percent) were enrolled in the state public mental health system at some time during the year prior to their referral to the program.

Fifty-nine percent received an average 11.5 hours of outpatient treatment through the public mental health system during the year prior to enrollment in MST (Exhibit 7). Thirty-nine percent had an inpatient stay at least once in the previous year, with an average length of 11.2 days. Almost 30 percent of youth received crisis services in the year preceding enrollment to MST. Intake and support services were also provided to 33 and 14 percent of youth, respectively.

Diagnoses and Functioning Levels. Of the 92 Pilot youth enrolled in the mental health system in the prior year, the most common (41 percent) primary diagnosis was a disruptive behavior disorder (e.g., conduct disorder, oppositional defiant disorder). Eighteen percent had a primary diagnosis of attention-deficit/hyperactivity disorder (ADHD), and 15 percent were diagnosed with depressive disorders. The other most common primary diagnoses were: bipolar (8 percent), adjustment (7 percent), and anxiety (4 percent) disorders.

The majority of youth (67 percent) enrolled in MST were considered moderately impaired according to the Children's Global Assessment Scale (C-GAS). The C-GAS measures a child's general level of psychological, social, and school functioning. A moderate impairment may be associated with suicidal thoughts, school refusal, obsessive rituals, frequent anxiety attacks, or frequent episodes of aggressive or other antisocial behavior.[13] Two percent exhibited mild impairments, 13 percent were considered seriously impaired, and 1 percent were deemed severely impaired by this measure.

Exhibit 7
Public Mental Health Services Utilization and Mental Health Characteristics of MST Enrollees

Public Mental Health Services Received the Year Prior to Referral to MST (N=103)	
Percentage Enrolled in Public Mental Health Services	89%
Percentage With Inpatient Stays	39%
Average Inpatient Days (for those with inpatient stays)	11.2
Percentage With Outpatient Treatment	59%
Average Outpatient Hours (for those with outpatient services)	11.5
Percent With Intake Services	33%
Percent With Support Services	14%
Percentage With Crisis Services	29%
Primary Mental Health Diagnoses (for those receiving public mental health services, N=92)	
Disruptive Behavior Disorders	41%
Attention Deficit/Hyperactivity Disorders	18%
Depressive Disorders	15%
Bipolar Disorders	8%
Adjustment Disorders	7%
Anxiety Disorders	4%
Missing	7%
Level of Functioning (Children's Level of Functioning Score for those enrolled in the public mental health system, N=92)[14]	
Mild (51–60)	2%
Moderate (41–50)	67%
Serious (31–40)	13%
Severe (21–30)	1%
Missing/Incomplete	16%
Average C-GAS (N=77)	46.2

Source: WSIPP analysis of DSHS MHD-CIS

[13]Washington Institute for Mental Illness Research and Training. <http://depts.washington.edu/washinst/Training/CGAS/CGAS%20Index.htm>

[14] Functioning is based on the Children's Global Assessment Scale (C-GAS). Severe, Serious, Moderate, and Mild designations are associated with the following C-GAS scores, respectively: 21–30 (unable to function in almost all areas); 31–40 (major impairment in functioning in several areas and unable to function in one area); 41–50 (moderate degree of interference in functioning in most social areas or severe impairment of functioning in one area); 51–60 (variable functioning with sporadic difficulties or symptoms in several but not all social areas).

Fee-for-Service Medicaid Covered Medications. Detailed service data are not available for youth receiving medical services through private insurance or publicly paid managed care. However, fee-for-service Medicaid data describe the types of prescriptions provided to 46 MST enrollees during the year prior to their referral.

Of the prescriptions billed in the year prior to MST enrollment, 32 percent were for drugs most commonly used to treat ADHD (e.g., anti-narcolepsy agents that act as stimulants), and 25 percent were for drugs most commonly used to treat disruptive behavior disorders (e.g., anti-psychotic drugs). Thirteen percent of the prescriptions were for anti-depressants (e.g., serotonin-specific reuptake inhibitors) and 7 percent were for anti-convulsant drugs most commonly used to treat epilepsy. The remaining prescriptions were for drugs used to treat asthma and/or allergies, anti-inflammatory ointments, stomach acid reducers, antibiotics, and pain relievers.

Child Welfare System

Thirty percent of youth enrolled in MST had previous involvement in the state's child welfare system according to the Children's Administration Management Information System (Exhibit 8). For our purposes, children are considered "involved" if a referral to Washington State's Child Protective Services is accepted for investigation.

The ages at the first accepted referral ranged from 2 to 16 years, with the average age of first referral at 6.7. Children involved in the child welfare system had an average of 3.1 accepted referrals prior to enrollment in MST. Twenty percent of MST enrollees were previously referred to child protective services due to allegations of physical neglect. Three and 11 percent were referred for allegations of sexual and physical abuse, respectively.

Six percent of children enrolled in MST were in out-of-home placements (kinship care, family foster care, or group home) at the time of referral to the MST program. Over 20 percent had at least one out-of-home placement prior to referral to MST, with an average of 1.7 lifetime out-of-home placements. Four percent of children enrolled in MST had already experienced three or more out-of-home placements.

Exhibit 8
Involvement With Child Welfare Services for Youth Enrolled in MST (N=103)

Child Protective Referrals Accepted for Investigation	
Any Prior Referrals	30%*
One or Two Prior Referrals	16%
Three or More Prior Referrals	15%
Average Number of Referrals (those with referrals)	3.1
Average Age at First Referral	6.7 years (range 2–16)
Allegations Associated With Accepted Referrals**	
Physical Abuse	11%
Sexual Abuse	3%
Physical Neglect	20%
In Out-of-Home Placement at Time of MST Referral	
In Any Out-of-Home Placement	6%
In Kinship Care	2%
In Family Foster Care	3%
In Group Home	1%
In Juvenile Detention	0
Out-of-Home Placement History	
Any Prior Placements	21%
One Prior Placement	11%
Two Prior Placements	6%
Three or More Prior Placements	4%
Average Number of Placements (those with placements)	1.7

Source: WSIPP analysis of DSHS CAMIS
**Percentages do not reconcile due to rounding.*
***A single referral may have multiple allegations.*

Prior Criminal Involvement and Time in Detention

Seventy percent of youth enrolled in MST at the Pilot had prior criminal convictions. Fifty-seven percent of all convictions were for assault. Half of the youth enrolled in MST had previously spent an average of 48 days in local juvenile detention facilities (Exhibit 9).

Of those with prior criminal convictions, 46 percent had been convicted of a felony and the majority had multiple felony or misdemeanor convictions (3.4 on average). The majority of convictions (42 percent) were for misdemeanor assault, followed by felony property crimes (23 percent), and felony assault (15 percent). The remaining charges associated with convictions are described in Exhibit 9.

Exhibit 9
Prior Convictions and Detentions of Youth Enrolled in MST

Percentage With Criminal Convictions Prior to Enrollment in MST (N=103)	
No Prior Convictions	30%
1 Prior Conviction	16%
2 Prior Convictions	15%
3 or More Prior Convictions	39%
Average Number of Convictions (for those with convictions, N=71)	3.4
Most Serious Criminal Conviction Prior to Enrollment in MST (of those convicted, N=71)	
Any Felony	46%
Felony Property	23%
Felony Assault	15%
Felony Drug	3%
Felony Violent Property	1%
Felony Weapon	1%
Felony Other	3%
Any Misdemeanor	52%
Misdemeanor Assault	42%
Misdemeanor Property	8%
Misdemeanor Drugs	1%
Misdemeanor Other	1%
Detentions Prior to Enrollment in MST (N=103)	
Percentage With Any Prior Detentions	50%
Average Number of Days in Detention (for those with detentions, N=52)	47.9

Source: WSIPP-CJS

Data Sources

The Institute combined data from multiple administrative data systems to identify study subjects and examine their characteristics and history. The following information systems maintained by the Department of Social and Health Services (DSHS) and the Institute (WSIPP) were used for this report:[15]

- MHD-CIS: DSHS Mental Health Division data track investigations, petitions and commitments, referral sources and outcomes, services, providers, diagnoses, global assessment of functioning, and demographics;
- CAMIS: DSHS Children's Administration data track residential out-of-home placements and referrals and history of abuse and neglect;
- WSIPP-CJS: The Institute's Criminal Justice System tracks Washington State criminal convictions; and
- MMIS: DSHS Medicaid Management Information System tracks Medicaid eligibility, diagnoses, procedures, prescriptions, providers, hospitalizations and emergency room admissions, and payments for fee-for-service clients.

Summary

The Thurston-Mason Children's Mental Health Evidence-Based Practice Pilot Project enrolled 114 youth in MST between April 2007 and December 2008. Using linked administrative data from multiple state agencies, we were able to produce a profile of the first 103 youth served by the program.

The Pilot's MST program is serving its target population. Ninety-six percent of youth enrolled in MST had prior involvement in at least one state system—juvenile justice, child welfare, or mental health; 74 percent were involved in multiple state systems prior to enrolling in MST.

Almost 90 percent of youth were enrolled in public mental health services. Most youth served by the program were diagnosed with disruptive behavioral or attention deficit/hyperactivity disorders and considered moderately impaired with regard to psychological, social, and school functioning. The majority of youth enrolled in MST had significant felony or misdemeanor criminal involvement. About one-third of youth enrolled in MST had prior involvement with child protective services.

To examine program outcomes, these data will be used to identify a comparison group of individuals not served by the Pilot program. Matched with MST enrollees, the comparison group will allow researchers to estimate outcomes associated with the Pilot, including its influence on the following:

- Mental health services
- Child welfare services
- Hospitalizations
- Out-of-home placements
- Involvement in juvenile justice
- School attendance
- Cost-effectiveness

Subject to funding, a preliminary analysis of outcomes associated with MST will be published in December 2009.

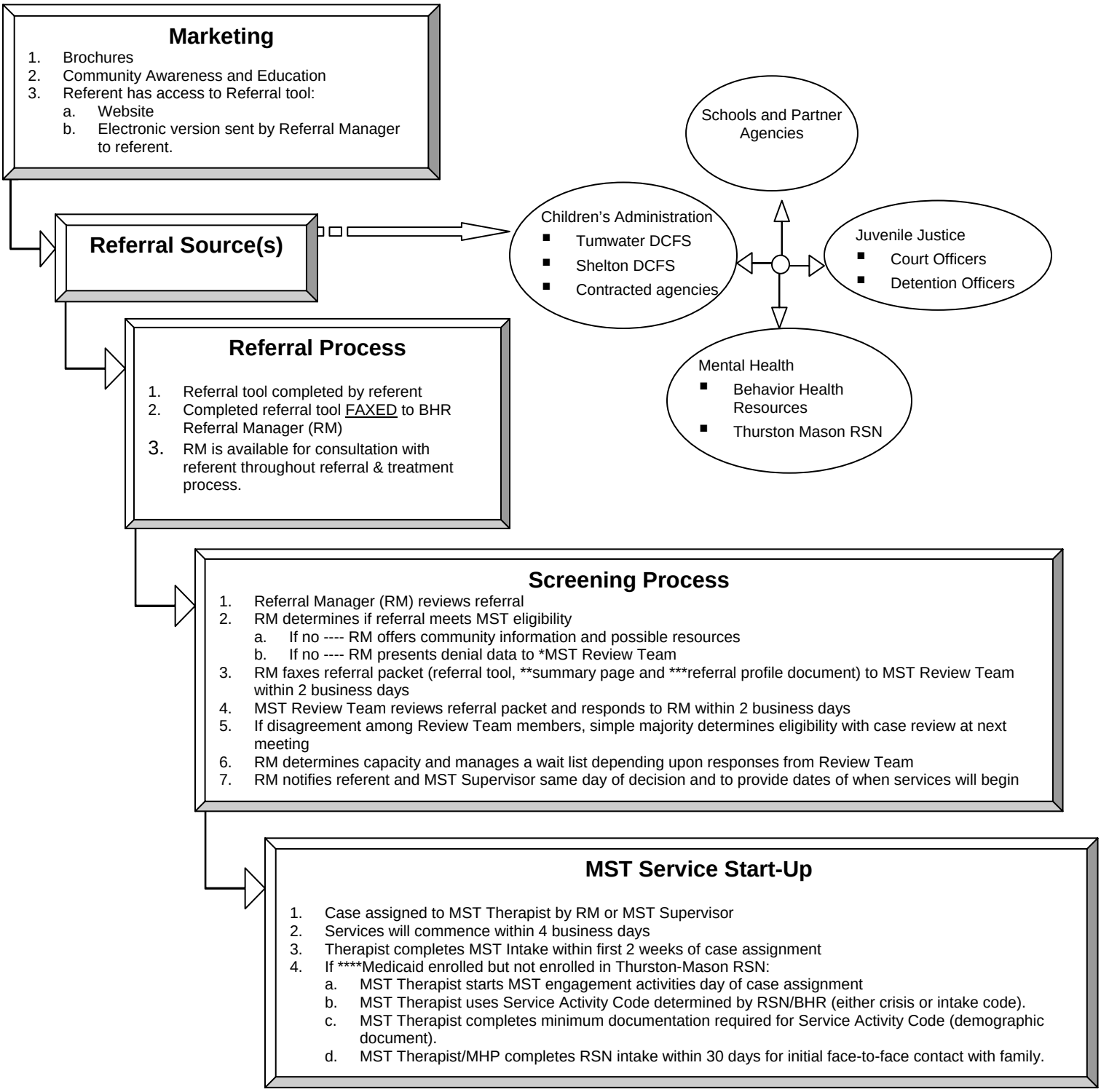
[15] For a description of the limitations of using these data sources, see W. Yen & J. Mayfield (2005). *Long-term outcomes of public mental health clients: Additional baseline characteristics.* Olympia: Washington State Institute for Public Policy, Document Number 05-03-3401.

Appendix
Multi-Systemic Therapy Referral Methods Flowchart

Target Population: Youth 12-17 years of age with an available family/potential support structure who are exhibiting behavioral challenges, significantly interrupting functioning across multiple domains, and/or are at high risk of being placed out of home.

The *MST Review Team reviews all referrals to ensure that the process is equitable and effective.

*MST Review Team meets 1 to 2 times per month.
**Referral Manager summary of findings, recommendations, etc.
***Referral Profile Document tracks: county, Medicaid status, referral sources, etc.
****80% Medicaid eligibility required.



Source: Thurston-Mason children's mental health evidence-based practices project: Strategic plan, p. 18, September 2008.

For additional information on this project, contact Jim Mayfield at (360) 586-2783 or mayfield@wsipp.wa.gov, or Stephanie Lee at (360) 586-3951 or slee@wsipp.wa.gov.

Document Number 09-04-3902