



Multisystemic Therapy Adaptations

Pilot Studies to Large-Scale Dissemination 2022

MST[®]
Services

Proven Results
for Families and Communities

Multisystemic Therapy (MST) is a scientifically proven intervention for at-risk youth, with results demonstrated across multiple published studies. This document introduces the general process by which standard MST is adapted for use with other challenging clinical populations and problems. It also lists enhancements to the MST model that are or have been developed to address a specific sub-group of the MST population, or a specific system need, and provides an update on the status of MST treatment types: those with substantive evidence of effectiveness which are being transported to community-based MST programs, and those that are just beginning to be rigorously evaluated.

Dissemination

For a complete overview of published MST outcome, transportability and benchmarking studies, download the Research at a Glance (Long Version) at:

www.mstservices.com/mst-whitepapers

The usual path to dissemination is as follows:

1. Pilot Studies

In cases where changes to the standard MST model might produce an effective intervention for a challenging clinical problem, relatively low-cost pilot research is conducted to determine the feasibility and preliminary effects of the modifications and/or enhancements.

2. Efficacy Trial(s)

The purpose of a controlled efficacy trial is to determine whether the model, with adaptations, can achieve desired clinical outcomes under relatively favorable intervention conditions. If results from the efficacy trials are positive, the adaptation is ready for rigorous evaluation in community treatment settings.

3. Effectiveness Trial(s)

The purpose of controlled effectiveness trials is to examine the effectiveness of the adaptation in more usual practice settings and to identify barriers to such effectiveness.

4. Transportability Pilots

The purpose of the transportability pilots is to test the feasibility of the adaptation in several MST community programs.

5. Mature Transport

Broader dissemination of the adaptation will occur when (a) we are reasonably confident that the intervention protocols will achieve the desired outcomes if implemented with fidelity, and (b) the training and quality assurance procedures are sufficient to support the effective implementation of the intervention protocols.

6. Proactive Dissemination

The objective of dissemination strategies is to cultivate awareness of, and interest in, using a product or service.

	Adaptation Pilot Studies	Efficacy Trial(s)	Effectiveness Trial(s)	Transportability Pilots	Mature Transport 2nd Gen.	Mature Transport 3rd Gen.	Proactive Dissemination
Purpose of stage	Demonstrate viability	Scientific validation: "university/ideal" conditions	Scientific validation: "clinic/usual care" conditions	Transition from "science" to "practice"	Replicability: multi-site replication	Broad-scale use	Identify and address barriers to adoption
Research context	Model/Adaptation Development Research			Experimental Phase: collaborative effort between "purveyor" and research organizations	Real-World Use and Application		Pilot and Exploratory Efforts: collaborative efforts between MST Services and Network Partner organizations
Expert "in charge" of implementation	Model/Adaptation Developer			2nd generation expert supported by developer*	2nd generation expert*	3rd generation expert**	MST Services and Network Partner staff
Est. time in stage	2-3 years	0-5 years	3-5 years	2-3 years	2-3 years	Ongoing	Ongoing
Main question examined in each stage	Feasibility: Can the model be specified and shown to be safe and viable?	Can outcomes be achieved under "university/ideal" implementation conditions?	Can outcomes be achieved under "clinic/usual care" implementation conditions?	Can we develop/train a 2nd generation expert in the model/adaptation?*	Can we replicate more broadly 2nd generation transport with adherence to model/adaptation and high quality outcomes?*	Can 3rd generation experts also transport the model/adaptation with model adherence and high quality outcomes?*	How do we get more organizations and service systems to adopt the model/adaptation?
What is required to move into this stage?	Support of the concept by members of the research community	Developer support and funding for rigorous evaluation	Developer support and funding for rigorous evaluation in a "real-world" implementation site	Scientific validation, in at least two settings, of the effectiveness of the adaptation	Evidence that a 2nd generation expert in the adaptation can lead replication*	Evidence that many experts in the adaptation can be trained effectively to lead replication efforts	Strategies to get organizations, payors, clinicians, consumers to adopt the model and test which strategies promote adoption
What comes next after this stage?	Randomized trial/evaluation	Evaluation in more real-world settings	Moving beyond developer's direct control	Multi-site replication	Broad-scale use	Model becomes part of "usual services"	Greater number of systems implement model

1st generation= model/adaptation developers; *2nd generation= experts trained directly by the model/adaptation developers; **3rd generation= experts trained by 2nd generation experts, not directly by the model/adaptation developers

MST and MST Clinical Adaptations

Treatment Type Acronym	Name and Population Served	Areas Addressed with Modifications	Developers	Summary/Overview
MST	Multisystemic Therapy ----- Serious juvenile offenders	Foundational model upon which other adaptations and enhancements are based	Henggeler/ Borduin	MST is a family and home-based treatment that strives to change how youth function in their natural settings- home, school and neighborhood- in ways that promote positive social behavior while decreasing antisocial behavior including substance use. The primary goals of MST are to: (a) reduce youth criminal activity; (b) reduce antisocial behavior including substance abuse; and (c) achieve these outcomes at a cost savings by decreasing rates of incarceration and out-of- home placement.
MST-ASD	MST-Autism Spectrum Disorder ----- Youth with autism spectrum disorder engaging in seriously disruptive behaviors	Interventions specific to factors often linked with ASD (e.g., caregiver stress and expectations; youth cognitive, communicative, and social impairment), structural/ strategic family therapy, safety planning, and psychoeducation	Borduin/ Wagner	This adaptation of MST is for youth, ages 10-17, diagnosed with Autism Spectrum Disorder (ASD). Interventions are aimed at the broad range of factors associated with disruptive behaviors among youth with ASD.
MST-BSF	MST-Building Stronger Families ----- Families involved with child protective services (CPS) due to co-occurring parental substance abuse and physical abuse and/ or neglect of a child age 6 - 17 in the family	Trauma, post-traumatic stress disorder (PTSD) treatment, safety planning, family problem solving, and communication plus Reinforcement Based Therapy (RBT) for parental substance abuse in all cases	Swenson/ Schaeffer	This adaptation of MST combines two evidence-based treatment approaches: (1) MST-CAN and (2) RBT for parental substance abuse. MST-BSF is a program designed to work specifically with children ages 6-17, and parents who have come under the guidance of CPS due to a report of physical abuse and/or neglect in the last 6 months who are experiencing substance abuse issues. Typically, children in such situations would be at risk of out-of-home placement.
MST-CAN	MST for Child Abuse and Neglect ----- Families involved with child protective services due to physical abuse and/or neglect of a child in the family	Trauma, post-traumatic stress disorder (PTSD) treatment, safety planning, family problem solving, and communication, treatment for parental substance abuse in 20%- 30% of cases	Swenson	This adaptation of MST is a treatment for youth, ages 6 to 17, and their families who have come to the attention of child protective services due to physical abuse and/or neglect and for whom the maltreatment report was filed within the last six months. Typically, children are at risk of out-of-home placement. Additionally, youth who are currently in foster care and will be reuniting with their families may receive clinical services as long as the abuse report was filed within the last six months. Youth who will not be reunited with their families will be excluded.
MST-EA	MST-Emerging Adults ----- 17- to 26-year-olds with criminal justice involvement and behavioral health conditions	Social network, individual factors, mental health treatment, substance use treatment, safety planning, housing, vocation, life skills	Sheidow/ McCart	This adaptation of MST is focused on transition age youth and young adults (17- 26 years) with justice system involvement and mental health and/or substance use disorders. These emerging adults are old enough to emancipate from their families and may be living independently or exiting foster care. The initial controlled pilot, funded by NIMH, was limited to 17- to 21-year-olds. Ongoing randomized trials, funded by NIMH and NIDA, focus on the full age range.
MST-FIT	MST-Family Integrated Transition ----- Incarcerated juvenile offenders	Enhanced focus on individual factors, strategies from motivational enhancement therapy, relapse and interpersonal skill training based on dialectical behavior therapy.	Trupin	This MST enhancement is a specialized service for youth transitioning back to the community from being incarcerated in facilities that are implementing the Integrated Treatment Model (ITM). ITM directly targets emotion dysregulation as a primary driver of offending behaviors and substance use relapse. MST-FIT is the MST enhancement specialized to maximize the likelihood of a successful transition back to the community.
MST-HC	MST-Health Care ----- Youth receiving medical health care	Medical treatment components specific to condition of interest	Ellis/ Naar-King/ Letourneau	This adaptation of MST is for youth failing to adhere to medical health care recommendations in a number of domains such as treating poorly controlled type 1 diabetes, obesity, asthma and HIV in youths.

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MST and MST Clinical Adaptations

Treatment Type Acronym	Name and Population Served	Areas Addressed with Modifications	Developers	Summary/Overview
MST-ID	MST-Intellectual Disabilities ----- Youth with antisocial behaviors, plus mild intellectual disabilities (MID) for youth or caregiver and/or for MST youth with caregivers with MID	Enhanced focus on MID in staff hiring and training, including the development of additional training materials tailored to the needs of this population	Dutch Providers/ MST-NL-B/ MST Services	This MST enhancement includes specialization in providing MST for youth and caregivers with MID and focuses on serving a very high percentage of these referrals. This approach is still in development. The aim is to enhance the implementation of MST to improve the work done with the ID target group. This is done in various ways, including the development of additional training materials for the MST-ID teams.
MST-IPV	MST-Intimate Partner Violence ----- Families involved with child protective services (CPS) due to child physical abuse and/ or neglect and violence between the adult partners/ parents in the home	Trauma, safety planning, family problem solving, communication, couples conflict resolution, treatment for substance abuse in 40% of cases	Swenson/ Schaeffer	This emerging MST treatment type is for treatment of families with youth, ages 0 to 17, who have come to the attention of CPS due to a report of physical abuse and/ or neglect and violence between the adult partners/parents in the home in the last 6 months. MST-IPV is for families whose clinical challenges are severe (e.g., likely have prior reports or investigations; parents or partners experiencing significant mental health difficulties) with at least one credible report of violence between the adult partners/parents and are at risk of further escalation. Children may be at risk of out-of-home placement or in out-of-home placement when CPS has a plan to reunite the family.
MST-JDC	MST-Juvenile Drug Court ----- Juvenile drug court involved youth	MST-SA (see MST-SA items) used within the context of a juvenile drug court	Henggeler/ Cunningham	This MST treatment type is implemented in collaboration with juvenile drug courts (JDCs). The MST-JDC partnership serves youth who currently participate in a drug court program and who have stable community-based placement with an adult caregiver who is willing to participate in treatment. Most JDCs target one year of participation per youth.
MST-PRV	MST-Prevention ----- Teens involved with child welfare who are at risk of child abuse or neglect due to delinquent/ incorrigible behaviors or challenges parenting an adolescent	Enhanced focus on safety planning, family therapy, communication and interpersonal skills training, and responding to the child welfare system's reporting and administrative needs including ensuring the well-being of the entire family.	Brunk/ Henggeler	This emerging MST enhancement is focused on teenage youth with child welfare system involvement due to delinquent/incorrigible behaviors. The primary goal of MST- Prevention is to decrease the risk that these youth will become more deeply involved in the child welfare or juvenile justice systems. Treatment is largely based upon standard MST but includes enhanced safety planning and is highly responsive to the reporting and administrative needs of the specific child welfare system.
MST-PSB	MST-Problem Sexual Behavior ----- Juvenile sex offenders	Structural/strategic family therapy, safety planning, individual factors, and interventions specific to PSB (e.g., victim clarification, promotion of normative sexual behavior)	Borduin	This adaptation of MST is for youth, ages 10-17, with externalizing, delinquent behaviors, including aggressive (e.g., sexual assault, rape) and non-aggressive (e.g., molestation of younger children) sexual offenses.
MST-Psych	MST-Psychiatric Care ----- Youth with psychiatric service needs	Psychiatric and substance abuse drivers in youth and caregiver, medication management, safety planning	Rowland	This adaptation of MST is for youth, ages 9-17, at risk for out-of-home placement due to serious behavioral problems AND co-occurring mental health symptoms such as thought disorder, bipolar affective disorder, depression, anxiety and impulsivity. It includes the addition of a child psychiatrist (part-time) to the MST team. MST-Psychiatric may be used to stabilize home placement after acute hospitalization or to avert residential placement.
MST-SA	MST-Substance Abuse ----- Substance-abusing youth	Enhanced focus on frequent drug testing, with consequences linked to results; functional analyses of substance use; and development of self-management plans	Henggeler/ Cunningham	The MST-SA program name is reserved for use by MST programs specialized in serving a very high percentage of substance-abusing youth. Like MST, MST-SA is an evidence-based treatment for substance abuse that includes drug and alcohol testing.

Table 1. Comparison of Select MST Treatment Types

	MST	MST- SA	MST-CAN	MST-BSF	MST-Psych	MST-PSB	MST-FIT	MST-EA
Target population ages	12 to 17	12 to 17	6 to 17	6 to 17	9 to 17	10 to 17	12 to 17	17 to 26
Target population characteristics	Juvenile offenders	MST programs targeting a high rate of youth referred for substance abuse treatment	Families involved with child protection due to physical abuse and/or neglect	MST-CAN + caregiver with substance misuse	Youth with mental health symptoms and high risk of out of home placement	Juvenile sex offenders (problem sexual behavior)	Youth returning from ITM-based out of home placement	Young adults with justice involvement and behavioral health concerns
Serves standard MST youth?	YES	Limited	NO	NO	YES	YES	Limited	NO*
Ultimate treatment outcomes	At home, in school, not arrested	At home, in school, not arrested	At home, in school, not arrested, no maltreatment, caregiver not arrested	At home, in school, not arrested, no maltreatment, caregiver not arrested	At home, in school, not arrested, improved youth and caregiver mental health	At home, in school, not arrested, no PSB rearrest	At home, in school, not arrested	Living in community, improved behavioral health, not arrested
Therapist FTE per team	2-4	2-4	3	3	3-4	2-4	2-4	3-4
Supervisor FTE per team	1 full-time recommended, 50% time minimum	1 full-time recommended, 50% time minimum	1 full-time	1 full-time	1 full-time recommended, 50% time if supporting 2 teams	1 full-time recommended, 50% time minimum	1 full-time recommended, 50% time minimum	1 full-time
Add'l required staff FTE	None	None	1 Crisis Caseworker; .2 Psychiatrist	1 Crisis Caseworker; .2 Psychiatrist	1 Crisis Caseworker; .2 Psychiatrist	None	None	1.25 Coaches (4 workers; hrly)
Caseload range/therapist	4-6	4-6	3-4	3-4	3-4	3-5	4-6	3-4
Typical length of stay (LOS)	4 months	4 months	7 months	7 months	5 months	5-7 months	5 months	7-8 months
LOS range	3-5 months	3-5 months	6-9 months	6-9 months	4-6 months	4-8 months	4-8 months	6-12 months
Youth served per year	30-60	30-60	21**	21**	29-38	16-32	24-48	18-30
Annual budget cost factor***	1	1.0	1.4	1.4	1.5	1.0	1.1	1.2
Cost factor per billing unit****	1	1.0	1.7	1.8	1.8	1.3	1.1	1.5
Cost factor per youth (per treatment episode)***	Base cost factor 1.00	1.0	3.0 per family**	3.1 per family**	2.3	1.9	1.4	2.8

* MST-EA may make exceptions for 16+ aged youth whose caregivers refuse to participate in standard MST; ** Up to 21 families can be served per year in MST-CAN or MST-BSF. Families served by MST-CAN or MST-BSF receive services that address the clinical needs of all individuals in the family. On average there are 5 individuals per family in MST-CAN or MST-BSF who receive specialized treatment services.; *** Cost comparisons across MST-based models are based on standard MST program costs and costs per youth as the 'base cost' of 1.00; **** Time-based billing units such as daily, 15-min, hourly, monthly

Table 2. Status of MST Treatment Types Based Upon the 2022 MST Research at a Glance

CLINICAL ADAPTATIONS & ENHANCEMENTS	Pilot Studies	Efficacy Studies (university settings)	Effectiveness Studies (community practice settings)	Transportability & Implementations Studies (community practice settings)	Mature Transport 2nd gen.	Mature Transport 3rd gen.	Proactive Dissemination
MST	Complete	3 Published: 2 RCTs, QE	24 Published: 10 RCTs, 10 QE, 4 BM	18 Published	Underway	Underway	Underway
MST-SA	Complete	n/a	1 Published: RCT	Underway	Underway	Underway	
MST-CAN	Complete	1 Published: RCT	3 Published: RCT, 2 QE	Underway	Underway	Initiated	
MST-PSB	Complete	2 Published: RCTs	1 Published: RCT	n/a	Underway		
MST-Psych	Complete	2 Published: RCTs	2 Published: QE, BM	1 Published: Q	Underway		
MST-EA	Complete	n/a	2 Underway: RCTs	2 Published: Q			
MST-BSF	Complete	n/a	2 Published: RCT, QE				
MST-JDC	Complete	n/a	1 Published: RCT				
MST-FIT	Complete	1 Published: QE	Underway: QE				
MST-IPV	Underway	n/a	Underway: QE				
MST-HC	Complete	6 Published: RCTs					
MST-ASD	Complete	1 Published: RCT					
MST-ID	Complete	1 Published: QE					
MST-Prevention	Underway						

Notes: n/a = no studies of this type published to date; QE = Quasi-experimental; RCT = Randomized clinical trial; BM = Benchmarking; Q = Qualitative

Additional information about the
Multisystemic Therapy model and its
adaptations can be found at
www.mstservices.com

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