Pilot Studies to Large-Scale Dissemination:
Stages of Development

	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** *(including implementation research agendas)*		**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 adaptation 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 adaptation 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 and not directly associated with the model/adaptation developers*

Status of MST and Adaptations Based Upon the 2017 MST Research at a Glance Publication

CLINICAL ADAPTATIONS	Adaptation Pilot Studies	Efficacy Studies (university settings)	Effectiveness Studies (community practice settings)	Transportability and Implementations Studies (community practice settings)	Mature Transport 2nd Gen.	Mature Transport 3rd Gen.	Proactive Dissemination
MST	Complete	3 Published: 2 RCT, QE	19 Published: 9 RCT, 7 QE, 3 BM	16 Published	Underway	Underway	Initiated
MST-SA	Complete	n/a	1 Published: RCT	Underway	Underway	Underway	
MST-CAN	Complete	1 Published: RCT	2 Published: RCT, QE	Underway	Underway	Initiated	
MST-PSB	Complete	2 Published: RCTs	1 Published: RCT	n/a	Underway		
MST-Psychiatric	Complete	2 Published: RCTs	2 Published: QE, BM	n/a	Underway		
MST-BSF	Complete	n/a	Underway: RCT				
MST-EA	Complete	n/a	2 Underway: RCT				
MST-JDC	Complete	n/a	1 Published: RCT				
MST-FIT	Complete	1 Published: QE	2 Underway: RCT, QE				
MST-HC	Complete	6 Published: RCTs					
MST-ASD	Complete	Underway					
MST-Prevention	Underway						
System/Implementation Adaptation							
BlueSky	Complete	n/a	Underway				

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

Additional information about the MST model and its adaptations can be found at mstservices.com

Multisystemic Therapy® (MST®) Adaptations
Pilot Studies to Large-Scale Dissemination

The purpose of this document is to describe the general process by which standard Multisystemic Therapy (MST) (Henggeler et al., 2009) is adapted for use with other challenging clinical problems and eventually transported to community-based MST programs.

Dissemination

In the case of MST for serious juvenile offenders, for example, the initial pilot study was conducted by Henggeler in Tennessee. The success of this work led to efficacy research conducted by Borduin in Missouri and effectiveness trials conducted by Henggeler in South Carolina. Success here led to early dissemination efforts (i.e., transportability pilots). Lessons learned from these early dissemination attempts have informed the large-scale dissemination work of MST Services as well as the important independent replications of Ogden in Norway, Timmons-Mitchell in Ohio, Sundell in Sweden, Glisson in Tennessee and Butler in England. The entire process took more than 20 years to complete!

As the effectiveness of MST in treating serious juvenile offenders became known to the larger practice and research communities in the 1990s, several groups of investigators have used standard MST as a platform for the development of adaptations to treat other serious clinical problems, including psychiatric problems, child abuse and neglect, substance abuse, problem sexual behaviors, and health care conditions such as diabetes, HIV infection and obesity. More importantly, each of these adaptations is progressing along the dissemination continuum noted below. Although this carefully reasoned process will hopefully take fewer than 20 years to complete, we are primarily concerned with developing effective and sustainable interventions. For a complete overview of published MST outcome, transportability and benchmarking studies, download www.mstservices.com/outcomestudies.pdf.

The usual path to dissemination is as follows:

❶ Adaptation Pilot Studies ❷ Efficacy Trial(s)
❸ Effectiveness Trial(s) ❹ Transportability Pilots
❺ Mature Transport ❻ Proactive Dissemination

❶ Adaptation Pilot Studies

In cases where adaptations 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 adaptation. Ellis and Naar-King have conducted a number of pilots on adaptations for youth failing to adhere to medical health care recommendations (MST-HC) in a number of domains such as treating poorly controlled type 1 diabetes, obesity, asthma and HIV-positive youths. Similarly, the Building Stronger Families Project was piloted in Connecticut, as an integration of MST for Child Abuse and Neglect (MST-CAN) and Reinforcement-Based Therapy (RBT), an evidence-based treatment of parental substance abuse. The outcomes from the pilot were favorable and were used by Swenson to obtain funding for a more rigorous evaluation of the MST adaptation which is now underway. Importantly, for reasons of program fidelity, all research on MST adaptations includes researchers who developed the adaptations.

❷ Efficacy Trial(s)

The purpose of a controlled efficacy trial is to determine whether the adaptation can achieve desired clinical outcomes under relatively favorable intervention conditions. Thus, for example, Borduin's efficacy trials have included him as the clinical supervisor and highly qualified doctoral students as the therapists within a university-based program. Likewise, Rowland's adaptations for psychiatric problems included considerable supervision from MST-trained psychiatrists at the Family Services Research Center at the Medical University of South Carolina. If results from the efficacy trials are positive, the adaptation is ready for rigorous evaluation in community treatment settings.

❸ 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. For example, Swenson has examined the effectiveness of MST-CAN provided by an MST team based in a community mental health center. Similarly, an effectiveness trial for psychiatric problems has been completed in Hawaii, and an effectiveness trial for problem sexual behavior has been completed in Chicago.

❹ Transportability Pilots

The purpose of the transportability pilots is to test the feasibility of the adaptation in several MST community programs. The pilots are kept very structured, under close oversight by adaptation developers (e.g., Swenson for child abuse and neglect, Borduin for problem sexual behavior, Rowland for psychiatric problems), and, if appropriate, protocols for broader dissemination are developed under the leadership of MST Services.

❺ Mature Transport

As with MST for serious juvenile offenders, 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. The transport experts, MST Services and its Network Partners, take the lead in national and international transport and implementation efforts.

❻ Proactive Dissemination

The objective of dissemination strategies is to cultivate awareness of, and interest in, using a product or service. For MST and other evidence-based mental health and substance abuse treatments, the development and evaluation of effective strategies to proactively disseminate the model (that is, to encourage adoption of the model) is in its infancy.

See status of MST and Adaptations on back cover >>>

MST®
Multisystemic Therapy

MST and MST Clinical Adaptations

Model Acronym	Name and Target Population	Areas of Increased Focus in Adaptations	Developer(s)	Summary/Overview
MST	Multisystemic Therapy ----------o---------- Serious juvenile offenders	Foundational model upon which adaptations are built	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 ----------o---------- Youths 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 youths, ages 10–17, diagnosed with Autism Spectrum Disorder. Interventions are aimed at the broad range of factors associated with disruptive behaviors among youths with ASD.
MST-BSF	MST-Building Stronger Families (MST-BSF) ----------o---------- 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, and 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 (MST-CAN) ----------o---------- 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 of 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 (EA) ----------o---------- 17- to 26-year-olds with criminal justice involvement and serious mental health conditions	Social network, individual factors, mental health treatment, housing, vocation, life skills	Sheidow	This adaptation of MST is focused on transition age youth and young adults (17–26 years) with justice system involvement and psychiatric disabilities. 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, is limited to 17- to 21-year-olds.
MST-FIT	MST-Family Integrated Transition (FIT) ----------o---------- Incarcerated juvenile offenders	Individual factors, Motivational Enhancement Therapy (MET), relapse prevention, and Dialectical Behavior Therapy (DBT)	Trupin	This adaptation of MST provides targeted services for youth, with co-occurring mental health and substance abuse, who are transitioning back to the community from being incarcerated in facilities that are implementing the Integrated Treatment Model (ITM). This adaptation and ITM directly target emotion dysregulation as a primary driver of offending behaviors and substance use relapse.
MST-HC	MST-Health Care ----------o---------- 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.
MST-JDC	MST-Juvenile Drug Court (JDC) ----------o---------- Juvenile drug court involved youth	MST-SA (see MST-SA items) used within the context of a juvenile drug court	Henggeler/ Cunningham	This adaptation of MST 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.

continued >>>

MST and MST Clinical Adaptations (continued)

Model Acronym	Name and Target Population	Areas of Increased Focus in Adaptations	Developer(s)	Summary/Overview
MST-IPV	MST-Intimate Partner Violence (MST-IPV) ----------o---------- Families involved with child protective services 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 adaptation of MST is for treatment of families with youth, ages 0 to 17, who have come to the attention of child protective services 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. If children are in out-of-home placement, families may receive clinical services if the family and CPS plan is to reunite the family. Families will be excluded if it is determined by CPS that the situation is too dangerous for the family to be together and in treatment together.
MST-Prevention	MST-Prevention ----------o---------- Teens involved with child welfare who are at risk of child abuse or neglect due to delinquent/incorrigible behaviors or challenges parenting an adolescent	Safety-planning, family problem solving, communication, DBT skills training and responding to the child welfare system's reporting and administrative needs including additional family support services to ensure the well-being of the entire family.	Brunk/ Henggeler	This emerging adaptation of MST 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 (PSB) ----------o---------- 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-Psychiatric	MST-Psychiatric Care ----------o---------- 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 (SA), previously known as MST-CM ----------o---------- Substance-abusing youth	Key components include 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 focused on serving a very high percentage of substance-abusing youth. MST-SA is an evidence-based treatment for substance abuse that includes drug and alcohol testing.

System/Implementation Adaptation

Model Acronym	Name and Target Population	Areas of Increased Focus in Adaptations	Developer(s)	Summary/Overview
BlueSky	Continuum of care comprised of MST, Functional Family Therapy (FFT) and Multidimensional Treatment Foster Care (MTFC) ----------o---------- Serious juvenile offenders	Some clinical and operational protocol changes (e.g., MST provides family therapy component of MTFC; some supervision overlap) and MST, FFT and MTFC are integrated under a single program structure	Various	The BlueSky project aims to improve clinical and cost-related outcomes for youth with serious antisocial behavior by developing a continuum of care that integrates three evidence-based treatments of serious antisocial behavior in adolescents—MST, FFT and MTFC. The development of this adaptation has been funded by the Annie E. Casey Foundation.