

MST is an internationally recognized program for at-risk youth and their families. For more than 30 years, MST has consistently demonstrated positive outcomes with chronic juvenile offenders. Based on the program's success, rigorous randomized trials were conducted to explore the feasibility and effects of adaptations of MST with other target populations. Results have been positive for treating problem sexual behavior, child abuse and neglect, substance abuse, serious emotional disturbances and chronic health care conditions. This document highlights the many areas of MST research and proven outcomes with traditional MST and MST clinical adaptations as well as research on the transport of MST to community practice settings.

RESEARCH HIGHLIGHTS

- 67 published outcome, implementation and benchmarking studies
- Yielding more than 130 published, peer-reviewed journal articles
- More than 55,000 families included across all studies
- 25 randomized trials
- 46 of the 67 studies conducted by independent researchers (not involving an MST model developer)
- 16 outcome studies using MST with serious juvenile offenders:
 - 11 randomized trials
 - 7 independent studies
 - 7 international studies
- 16 outcome studies using MST with adolescents with serious conduct problems
 - 6 randomized trials
 - 13 independent studies
 - 6 international studies
- 2 outcome studies with substance-abusing or -dependent juvenile offenders (MST-Substance Abuse)
- 3 outcome studies with juvenile sexual offenders (MST-Problem Sexual Behavior)
- 4 outcome studies with youths presenting serious emotional disturbance (MST-Psychiatric)
 - 2 independent
- 3 outcome studies with maltreating families (MST-Child Abuse and Neglect)
- 6 outcome studies with adolescents with chronic health care conditions (MST-Health Care)
 - 5 independent
- 17 implementation studies
 - 13 independent
- 14 treatment process studies
 - 10 independent
- 11 cost related studies
 - 6 independent

MST research demonstrates

- Long-term re-arrest rates in studies with serious juvenile offenders reduced by median of 42%
- Out-of-home placements, across all MST studies, reduced by a median of 54%
- Improved family functioning
- Decreased substance use among youth
- Fewer mental-health problems for youth
- Higher levels of client satisfaction
- Considerable cost savings

MST's positive results are long lasting

A 22-year, follow-up study by the Missouri Delinquency Project showed youths who received MST had

- 36% fewer felony arrests
- 75% fewer violent felony arrests
- 33% fewer days incarcerated
- 37% fewer divorce, paternity and child support suits
- 56% fewer felony arrests for siblings

MST has proven the importance of treatment adherence and quality assurance

For example, 3 large multisite studies on the transport of MST involving more than 7,000 families have concluded that:

- High therapist adherence improves youth and family outcomes.
- Ongoing quality assurance improves MST therapist and team adherence.
- (See publications in Study #11, #48 and #64)

MST has been effectively transported to community practice settings

- MST currently has more than 500 active programs.
- Adherence measures demonstrate that MST is being delivered with high levels of fidelity.
- Outcomes in community practice settings are similar to those of university-based trials.

MST theory of change has been supported by treatment process research

- Mediation and qualitative studies have demonstrated the importance of improving family relations as the mechanism to reduce youth antisocial behavior. (See publications in Studies #8, #22, #26, #29, #31, #39 and #54)

More than 55,000 families included across all studies

67 outcome, implementation and benchmarking studies, yielding more than 130 peer reviewed journal articles

Published MST Outcome, Implementation and Benchmarking Studies

January 2018

MST with Serious Juvenile Offenders			
Study #	Authors	Design	Population
1	Henggeler et al. (1986)	QE	Delinquents and their families
3	Borduin, Henggeler, Blaske & Stein (1990)	RCT	Adolescent sexual offenders and their families
4	Henggeler, Melton & Smith (1992)	RCT	Violent and chronic juvenile offenders and their families
5	Borduin et al. (1995)	RCT	Violent and chronic juvenile offenders and their families
6	Henggeler, Melton et al. (1997)	RCT	Violent and chronic juvenile offenders and their families
8	Henggeler, Pickrel & Brondino (1999)	RCT	Substance-abusing and -dependent delinquents and their families
9	Borduin, Schaeffer & Heiblum (2009)	RCT	Juvenile sexual offenders and their families
16	Timmons- Mitchell et al. (2006)	RCT—Independent	Juvenile offenders (felons) at imminent risk of placement and their families
17	Henggeler et al. (2006)	RCT	Substance-abusing and -dependent juvenile offenders in Drug Court and their families
21	Curtis, Ronan, Heiblum & Crellin (2009)	BM—Independent	Juvenile offenders in New Zealand and their families
22	Letourneau et al. (2009)	RCT	Juvenile sexual offenders and their families
25	Glisson et al. (2010)	RCT/CRO—Independent	Juvenile offenders and their families
26	Butler et al. (2011)	RCT—Independent	British juvenile offenders and their families
40	Fain et al. (2014)	QE—Independent	Chronic juvenile probationers
42	Baglivio et al. (2014)	QE—Independent	Juvenile offenders
49	Trupin et al. (2011)	QE—Independent	Incarcerated juvenile offenders and their families

MST with Adolescents with Serious Conduct Problems			
Study #	Authors	Design	Population
12	Ogden & Halliday-Boykins (2004)	RCT—Independent	Norwegian youth with serious antisocial behavior and their families
18	Ogden, Hagen & Andersen (2007)	BM—Independent	Norwegian youth with serious antisocial behavior and their families
20	Sundell et al. (2008)	RCT—Independent	Swedish youth with conduct disorder and their families
27	Boonstra et al. (2009)	BM—Independent	Dutch seriously antisocial and delinquent juveniles and their families
28	Boxer (2011)	Treatment process—Independent	Adolescents in MST Programs and their families
29	Asscher et al. (2013)	RCT—Independent	Dutch youth with severe and violent antisocial behavior and their families
31	Glebova et al. (2012)	Treatment process	Youth with serious antisocial behavior and their families treated by 51 MST therapists
34	Weiss et al. (2013)	RCT—Independent	Adolescents with serious conduct problems in self-contained classrooms and their families
37	Painter (2009)	QE—Independent	Youth with externalizing disorders
39	Gervan et al. (2012)	Treatment process—Independent	Youth who were physically aggressive or at imminent risk of placement and their families
47	Smith-Boydston et al. (2014)	QE—Independent	Youth with behavior problems
48	Lofholm et al. (2014)	QE—Independent	Swedish youth with severe behavior problems
51	Boxer et al. (2015)	Treatment process—Independent	Adolescents and their families in MST programs
54	Paradisopoulos et al. (2015)	Treatment process—Independent	British youths who completed MST
56	Barth et al. (2007)	QE—Independent	Behaviorally troubled youth and their families
63	Porter & Nuntavisit (2016)	BM—Independent	Australian youth with severe externalizing problems
65	Vidal et al. (2017)	QE—Independent	Youth at high risk of out-of-home placement

QE= Quasi-experimental

RCT= Randomized clinical trial

BM= Benchmarking

IR= Implementation Research

CRO= Counties randomized to organizational intervention conditions, youth in counties to MST or usual care

Published MST Outcome, Implementation and Benchmarking Studies January 2018

MST Child Abuse and Neglect Studies (MST-CAN)

Study #	Authors	Design	Population
2	Brunk, Henggeler & Whelan (1987)	RCT	Maltreating families
24	Swenson et al. (2010)	RCT	Physically abused adolescents and their families
33	Schaeffer et al. (2013)	Pre-post and QE	Families with co-occurring parental substance abuse and child maltreatment

MST-Psychiatric Studies

Study #	Authors	Design	Population
7	Henggeler, Rowland et al. (1999)	RCT	Youth presenting psychiatric emergencies and their families
15	Rowland et al. (2005)	RCT	Youth with serious emotional and behavioral disturbances and their families
19	Stambaugh et al. (2007)	QE—Independent	Youth with serious emotional disturbance and antisocial behavior at risk for out-of-home placement and their families
36	Tolman et al. (2008)	BM—Independent	Youth with serious emotional and behavioral disturbances

MST-Health Care Studies (MST-HC)

Study #	Authors	Design	Population
13	Ellis et al. (2004)	RCT—Independent	Adolescents with poorly controlled type 1 diabetes and their families
14	Ellis, Frey et al. (2005a)	RCT—Independent	Inner city adolescents with chronically poorly controlled type 1 diabetes and their families
23	Naar-King et al. (2009)	RCT—Independent	African-American adolescents with primary obesity and their families
30	Ellis et al. (2012)	RCT—Independent	Adolescents with poorly controlled type 1 or type 2 diabetes and their families
38	Letourneau et al. (2012)	RCT	HIV infected youth with poor medication adherence
43	Naar-King et al. (2014)	RCT—Independent	African-American adolescents with poorly controlled asthma

MST-Problem Sexual Behavior Studies (MST-PSB)

Study #	Authors	Design	Population
3	Borduin, Henggeler, Blaske & Stein (1990)	RCT	Adolescent sexual offenders and their families
9	Borduin, Schaeffer & Heiblum (2009)	RCT	Juvenile sexual offenders and their families
22	Letourneau et al. (2009)	RCT	Juvenile sexual offenders and their families

Implementation Studies

Study #	Authors	Design	Population
10	Henggeler, Schoenwald, Liao, Letourneau & Edwards (2002)	Implementation research	Youth referred to standard MST and their families
11	Schoenwald, Sheidow, Letourneau & Liao (2003)	Implementation research	Youth referred to standard MST and their families
32	Ogden et al. (2012)	Implementation research—Independent	Norwegian therapists, supervisors, and agency leaders
35	Stout & Holleren (2013)	IR—Independent	MST and FFT programs
41	Westin et al. (2014)	IR—Independent	Youth referred to MST or FFT
44	Brunk et al. (2014)	Implementation research	Youth referred to standard MST
45	Hebert et al. (2014)	IR—qualitative	Child protection team members
47	Smith-Boydston et al. (2014)	IR—QE—Independent	Youth in MST programs
48	Lofholm et al. (2014)	IR—Independent	Swedish youth in MST programs
50	Hendriks et al. (2014)	IR—Independent	MST and FFT programs
52	Welsh & Greenwood (2015)	IR—qualitative—Independent	Stakeholders in 5 states
53	Lange et al. (2015)	IR—Independent	Dutch and US families
55	Pantoja (2015)	IR—qualitative—Independent	Chilean government documents
60	Van der Rijken et al. (2016)	IR—QE—Independent	Dutch adolescents and families
61	Bruns et al. (2016)	IR—Independent	U.S. state mental health systems
64	Lange et al. (2017)	IR—Independent	Dutch adolescents with severe behavior problems
66	Ter Beek et al. (2017)	IR—Independent	Dutch boys with problem sexual behaviors

Most of the research publications listed in this document can be requested online from MST Services (MSTS). To request a publication, simply send an email with the publication number in the subject line (e.g., *FSRC #104, MSTS #1095, etc.*) to Network.Partner@mstservices.com. The publication number is listed after each citation in this document. The requested publication will be emailed directly to you.

Listing of initial published, peer-reviewed journal articles by study number

The publications cited below are the lead articles for the respective research study. Many of these studies have multiple publications. All publications related to each study are provided in the full length version of the MST Research at a Glance document, which can be found online at www.mstservices.com/mst-whitepapers

- 1 • Henggeler, S. W., et al. (1986). Multisystemic treatment of juvenile offenders: Effects on adolescent behavior and family interactions. FSRC Publication #104
- 2 • Brunk, M., et al. (1987). A comparison of multisystemic therapy and parent training in the brief treatment of child abuse and neglect. FSRC Publication #103
- 3 • Borduin, C. M., et al. (1990). Multisystemic treatment of adolescent sexual offenders. FSRC Publication #102
- 4 • Henggeler, S. W., et al. (1992). Family preservation using multisystemic therapy: An effective alternative to incarcerating serious juvenile offenders. FSRC Publication #4
- 5 • Borduin, C. M., et al. (1995). Multisystemic treatment of serious juvenile offenders: Long-term prevention of criminality and violence. FSRC Publication #25
- 6 • Henggeler, S. W., et al. (1997). Multisystemic therapy with violent and chronic juvenile offenders and their families: The role of treatment fidelity in successful dissemination. FSRC Publication #55
- 7 • Henggeler, S. W., et al. (1999). Home-based multisystemic therapy as an alternative to the hospitalization of youth in psychiatric crisis: Clinical outcomes. FSRC Publication #88
- 8 • Henggeler, S. W., et al. (1999). Multisystemic treatment of substance abusing and dependent delinquents: Outcomes, treatment fidelity, and transportability. FSRC Publication #85
- 9 • Borduin, C. M., et al. (2009). A randomized clinical trial of multisystemic therapy with juvenile sexual offenders: Effects on youth social ecology and criminal activity. FSRC Publication #335
- 10 • Henggeler, S. W., et al. (2002). Transporting efficacious treatments to field settings: The link between supervisory practices and therapist fidelity in MST programs. FSRC Publication #215
- 11 • Schoenwald, S. K., et al. (2003). Transportability of Multisystemic Therapy: Evidence for multi-level influences. FSRC Publication #235
- 12 • Ogden, T., & Halliday-Boykins, C. A. (2004). Multisystemic treatment of antisocial adolescents in Norway: Replication of clinical outcomes outside of the US. FSRC Publication #248
- 13 • Ellis, D. A., et al. (2004). Use of Multisystemic Therapy to improve regimen adherence among adolescents with type 1 diabetes in poor metabolic control: A pilot study. FSRC Publication #357
- 14 • Ellis, D. A., et al. (2005a). Use of multisystemic therapy to improve regimen adherence among adolescents with type 1 diabetes in chronic poor metabolic control: A randomized controlled trial. FSRC Publication #268
- 15 • Rowland, M. R., et al. (2005). A randomized trial of multisystemic therapy with Hawaii's Felix Class youths. FSRC Publication #262
- 16 • Timmons-Mitchell, J., et al. (2006). An independent effectiveness trial of multisystemic therapy with juvenile justice youth. FSRC Publication #291
- 17 • Henggeler, S. W., et al. (2006). Juvenile drug court: Enhancing outcomes by integrating evidence-based treatments. FSRC Publication #270
- 18 • Ogden, T., et al. (2007). Sustainability of the effectiveness of a programme of multisystemic treatment (MST) across participant groups in the second year of operation. FSRC Publication #312
- 19 • Stambaugh, L. F., et al. (2007). Outcomes from wraparound and multisystemic therapy in a center for mental health services system-of-care demonstration site. FSRC Publication #303
- 20 • Sundell, K., et al. (2008). The transportability of MST to Sweden: Short-term results from a randomized trial of conduct disordered youth. FSRC Publication #330
- 21 • Curtis, N. M., et al. (2009). Dissemination and effectiveness of multisystemic treatment in New Zealand: A benchmarking study. FSRC Publication #341
- 22 • Letourneau, E. J., et al. (2009). Multisystemic therapy for juvenile sexual offenders: 1-year results from a randomized effectiveness trial. FSRC Publication #336
- 23 • Naar-King, S., et al. (2009). A randomized pilot study of multisystemic therapy targeting obesity in African- American adolescents. FSRC Publication #352
- 24 • Swenson, C. C., et al. (2010). Multisystemic therapy for child abuse and neglect: A randomized effectiveness trial. FSRC Publication #382
- 25 • Glisson, C., et al. (2010). Randomized trial of MST and ARC in a two-level EBT implementation strategy. FSRC Publication #381
- 26 • Butler, S., et al. (2011). A randomized controlled trial of MST and a statutory therapeutic intervention for young offenders. FSRC Publication #398
- 27 • Boonstra, C., et al. (2009). Multi-systemic therapy for seriously antisocial and delinquent juveniles: two-year follow-up study. FSRC Publication #420
- 28 • Boxer, P. (2011). Negative peer involvement in multisystemic therapy for the treatment of youth problem behavior: Exploring outcome and process variables in "real-world" practice. FSRC Publication #419
- 29 • Asscher, J. J., et al. (2013). A randomized controlled trial of the effectiveness of multisystemic therapy in the Netherlands: Post-treatment changes and moderator effects. MSTS Publication #1083
- 30 • Ellis, D. A., et al. (2012). Multisystemic therapy compared to telephone support for youth with poorly controlled diabetes: Findings from a randomized controlled trial. FSRC Publication #412
- 31 • Glebova, T., et al. (2012). Examining therapist comfort in delivering family therapy in home and community settings: Development and evaluation of the therapist comfort scale. FSRC Publication #406
- 32 • Ogden, T., et al. (2012). Measurement of implementation components ten years after a nationwide introduction of empirically supported programs - a pilot study. FSRC Publication #416
- 33 • Schaeffer, C. M., et al. (2013). Comprehensive treatment for co-occurring child maltreatment and parental substance abuse: Outcomes from a 24-month pilot study of the MSTBuilding Stronger Families program. FSRC Publication #462
- 34 • Weiss, B., et al. (2013). An independent randomized clinical trial of multisystemic therapy with non-court-referred adolescents with serious conduct problems. MSTS Publication #1085
- 35 • Stout, B. D., & Holleran, D. (2013). The impact of evidence-based practices on requests for out-of-home placements in the context of system reform. MSTS Publication #1080
- 36 • Tolman, R. T., et al. (2008). Outcomes from multisystemic therapy in a statewide system of care. MSTS Publication #1040
- 37 • Painter, K. (2009). Multisystemic therapy as communitybased treatment for youth with severe emotional disturbance. MSTS Publication #1045
- 38 • Letourneau, E. J., et al. (2013). Multisystemic therapy for poorly adherent youth with HIV: Results from a pilot randomized controlled trial. FSRC Publication #464
- 39 • Gervan, S., et al. (2012). Paternal involvement in multisystemic therapy: Effects on adolescent outcomes and maternal depression. MSTS Publication #1070
- 40 • Fain, T., et al. (2014). Effectiveness of multisystemic therapy for minority youth: Outcomes over 8 years in Los Angeles County. MSTS Publication #1099
- 41 • Westin, A. M. L., et al. (2014). The effect of waiting time on youth engagement to evidence based treatments. MSTS Publication #1088
- 42 • Baglivio, M. T., et al. (2014). Comparison of multisystemic therapy and functional family therapy effectiveness: A multiyear statewide propensity score matching analysis of juvenile offenders. MSTS Publication #1097
- 43 • Naar-King, S., et al. (2014). Multisystemic therapy for high-risk African-American adolescents with asthma: A randomized clinical trial. MSTS Publication #1094
- 44 • Brunk, M. A., et al. (2014). Defining and evaluating fidelity at the program level in psychosocial treatments. MSTS Publication #1090
- 45 • Hebert, S., et al. (2014). Improving collaboration: a qualitative assessment of inter-agency collaboration between a pilot multisystemic therapy child abuse and neglect (MST-CAN) program and a child protection team. FSRC Publication #465
- 46 • Curtis, N. M., et al. (2004) Multisystemic treatment: A meta-analysis of outcome studies. FSRC Publication #255
- 47 • Smith-Boydston, J. M., et al. (2014). Transportability of multisystemic therapy to community settings: Can a program sustain outcomes without MST Services oversight? MSTS Publication #1101
- 48 • Lofholm, C. A., et al. (2014). The Swedish implementation of multisystemic therapy for adolescents: Does treatment experience predict treatment adherence. MSTS Publication #1095
- 49 • Trupin, E. J., et al. (2011). Family integrated transitions: A promising program for juvenile offenders with co-occurring disorders. FSRC Publication #399
- 50 • Hendriks, M. E. D., et al. (2014). Functional family therapy and multisystemic therapy: a comparison of target populations. MSTS Publication #1109
- 51 • Boxer, P., et al. (2015). Gang involvement moderates the effectiveness of evidence-based intervention for justice-involved youth. MSTS Publication #1103
- 52 • Welsh, B. C., & Greenwood, P. W. (2015). Making it happen: State progress in implementing evidence-based programs for delinquent youth. MSTS Publication #1204
- 53 • Lange, A. M. C., et al. (2016). The lack of cross-national equivalence of a therapist adherence measure (TAM-R) in multisystemic therapy (MST). MSTS Publication #1507
- 54 • Paradisopoulos, D., et al. (2015). Developing a model of sustained change following multisystemic therapy: young people's perspectives. MSTS Publication #1102
- 55 • Pantoja, R. (2015). Multisystemic therapy in Chile: A public sector innovation case study. MSTS Publication #1108
- 56 • Barth, R. P., et al. (2007). Outcomes for youth receiving intensive in-home therapy or residential care: A comparison using propensity scores. MSTS Publication #1021
- 57 • Connell, C. M., et al. (2016). Child and case influences on recidivism in a statewide dissemination of multisystemic therapy for juvenile offenders. MSTS Publication #1514
- 58 • Fox, S., et al. (2016). The role of cultural factors in engagement and change in multisystemic therapy (MST). Journal of Family Therapy. MSTS Publication #1505
- 59 • Lange, A. M. C., et al. (2016). Alliance and adherence in a systemic therapy. MSTS Publication #1515
- 60 • van der Rijken, R. E. A., et al. (2016). Using Interpreters in Mental Health Care: An Exploration of Multisystemic Therapy Outcomes. MSTS Publication #1503
- 61 • Bruns, E. J., et al. (2016). Research, data, and evidence-based treatment use in state behavioral health systems, 2001 - 2012. MSTS Publication #1510
- 62 • Vermeulen, K. M., et al. (2016). Cost-effectiveness of multisystemic therapy versus usual treatment for young people with antisocial problems. MSTS Publication #1506
- 63 • Porter, M., & Nuntavisit, L. (2016). An evaluation of multisystemic therapy with Australian families. MSTS Publication #1519
- 64 • Lange, A. M. C., van der Rijken, R. E. A., Busschbach, J. J. V., Delsing, M. J. M. H., & Scholte, R. H. J. (2017). It's not just the therapist: Therapist and country-wide experience predict therapist adherence and adolescent outcome. MSTS Publication #1566
- 65 • Vidal, S., Steeger, C. M., Caron, C., Lasher, L., & Connell, C. M. (2017). Placement and delinquency outcomes among system-involved youth referred to multisystemic therapy: A propensity score matching analysis. MSTS Publication #1573
- 66 • Ter Beek, E., van der Rijken, R. E. A., Kuiper, C. H. Z., Hendriks, J., & Stams, G. J. J. M. (2017). The allocation of sexually transgressive juveniles to intensive specialized treatment: An assessment of the application of RNR principles. MSTS Publication #1571
- 67 • Dopp, A. R., Coen, A. S., Smith, A. B., Reno, J., Bernstein, D. H., Kerns, S. E. U., & Altschul, D. (2017). Economic impact of the statewide implementation of an evidence based treatment: Multisystemic therapy in New Mexico. MSTS Publication #1558

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