



MST

Multisystemic Therapy

BLUEPRINTS

MST Update 2016

including
Published MST Research Findings
2014 - Present

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Presentation Overview

MST

Multisystemic Therapy


- Clinical Approach and Quality Assurance
- Implementation Research - Quantitative
- Outcome Research
- Process Research
- Implementation Research - Qualitative

What is “MST”?

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Multisystemic Therapy

- Community-based, family-driven treatment for antisocial/delinquent behavior in youth
- Focus is on “Empowering” caregivers (parents) to solve current and future problems
- The MST “client” is the entire ecology of the youth - family, peers, school, neighborhood
- Highly structured clinical supervision and quality assurance processes



Multisystemic Therapy (MST)

Overview


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How is MST Implemented?

MST

Multisystemic Therapy

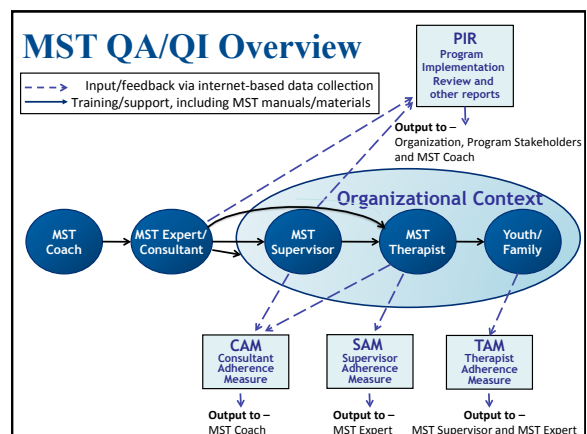
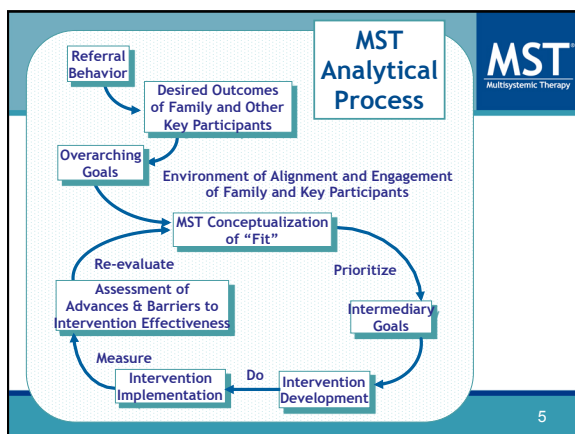
- Single therapist working intensively with 4 to 6 families at a time
- 3 to 5 months is the typical treatment time (4 months on average across cases)
- Team of 2 to 4 therapists plus a supervisor
- 24 hr 7 day week team availability: on call system
- Work is done in the community, home, school, neighborhood: removes barriers to service access

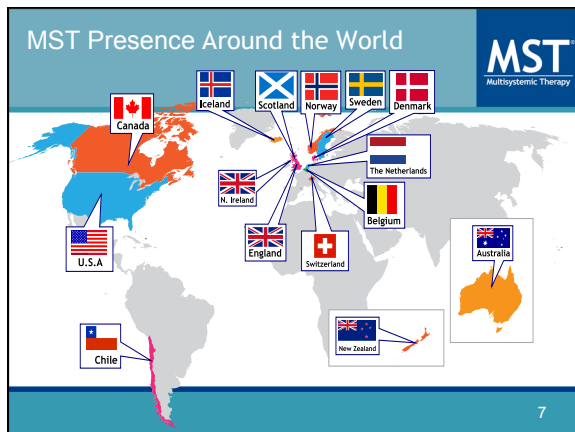


Multisystemic Therapy (MST)

Overview

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MST Ultimate Outcomes 2015 MSTI Data Report

AT HOME	90%	These results are based on a comprehensive review of the 11,958 cases* (85.4% of 13,995 cases referred for treatment) that were closed for clinical reasons (i.e., completed treatment, low engagement, or placed).
IN SCHOOL/ WORKING	85.6 %	
NO ARRESTS	86.2 %	

Multisystemic Therapy (MST)
Overview

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MST: 35+ Years of Science

55 published outcome, benchmarking, and implementation studies including 25 randomized trials (yielding >100 peer-reviewed journal articles)

- 16 with serious juvenile offenders
 - 7 independent studies
- 11 with adolescents with serious conduct problems
 - 10 independent studies
- 2 with substance abusing or dependent juvenile offenders
- 3 with juvenile sexual offenders
- 3 with youths presenting serious emotional disturbance
- 3 with maltreating families
- 6 with adolescents with chronic health care conditions
 - Diabetes, obesity, HIV, asthma
- 13 implementation studies

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MST: Model Adaptations

Over a dozen adaptations of MST are in development and undergoing research on effectiveness including the following models:

- MST-PSB for Problem Sexual Behavior, a Blueprint Model program
- MST-CAN for Child Physical Abuse and Neglect
- MST-BSF, Building Stronger Families
- MST-Psychiatric for youth with psychiatric service needs
- MST-EA, Emerging Adults for young adults ages 17 to 26
- MST-FIT, Family Integrated Transitions for post-placement care
- MST-ASD, Autism Spectrum Disorder youth with disruptive behaviors
- MST-Health Care
 - Diabetes
 - Juvenile Obesity
 - HIV prevention

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QUANTITATIVE IMPLEMENTATION RESEARCH (since 2014)

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The Swedish Implementation of Multisystemic Therapy for Adolescents: Does Treatment Experience Predict Treatment Adherence? (#48)

Cecilia Lofholm, Kyle Eichas, & Knut Sundell

Lund University, Tarleton State University,
National Board of Health and Welfare

Journal of Clinical Child & Adolescent Psychology (2014)

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Study Context



- 2003: MST programs started in Sweden -- 7 teams comprising the first wave of implementation
- 2004-2005: RCT conducted by Sundell et al. (2008)
 - No treatment effects
 - Low treatment adherence
 - Treatment adherence associated with arrest
- 2005-2006: 3 MST teams added, comprising the second wave of implementation
- 2007: MST Sweden (NP) began supporting MST implementation in Sweden
- 2003-2009: The time period examined by Lofholm et al. (2014)

Study Purpose and Methods



To examine how therapists' adherence to MST and youth outcomes varied from 2003-2009

Participants

- 973 youth referred from child welfare for severe behavior problems
- 68 therapists, 21 supervisors, 10 teams, 4 consultants

Measures

- TAM (total sum of item scores)
- Youth at home, in school, no arrest (therapist report)
- Implementation wave (first or second)
- Years of team activity (0 to 5)
- Therapist experience (# of families treated)

Findings



- High TAM predicted greater likelihood youth was at home, in school, and had no arrests (replicating findings from previous research)
- High therapist experience predicted greater likelihood youth was at home (new finding)
- Implementation wave and years of team activity predicted higher TAMs (extremely important new findings), which predicted better outcomes. For example, second wave therapists had first-year TAMs higher than the third-year TAMs of first wave therapists (see Figure 3 in manuscript).

Swedish Implementation Study Löfholm et al. 2014

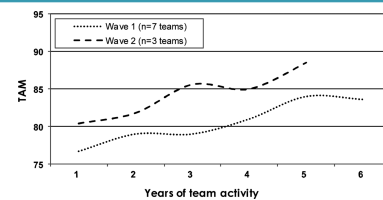


FIGURE 3 Averaged total treatment adherence (TAM) score by Years of Team Activity and Implementation waves

Why are Wave and Team Experience Findings So Important?



- They explain the poor outcomes of Sundell et al. (2008). Low adherence is associated with poorer outcomes, and therapist adherence was the lowest during that study.
- Findings demonstrate the value (i.e., steadily improved adherence and outcomes) of continued quality assurance - "implementation is best considered a continuous process."
- More experienced teams and organizations seem to better support therapist adherence - supporting anecdotal views of optimal sites for MST expansions and adaptation pilots.

A Critical Implication for Research



"An outcome evaluation that is initiated during early stages of implementation may result in a failure to find effect of the intervention, thus making it paramount to secure adequate treatment adherence before recruiting clients."

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Transportability of Multisystemic Therapy to Community Settings: Can a Program Sustain Outcomes without MST Services Oversight? (#47)

Julianne Smith-Boydston, Rochelle Holtzman,
& Michael Roberts
University of Kansas

Child and Youth Care Forum (2014) 43: 593-605

Design

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A 6-year study; N = 147 youth

- The performance of two standard MST teams with MST Services licensure and oversight was tracked for 3 years.
- Then, due to a loss in state and federal funding, the provider organization decided to discontinue oversight by MST Services. The provider, however, also decided to maintain the MST program in response to community support. The cut in funding resulted in a decrease to one standard MST team.
- With no oversight from MST Services, the performance of the one team was tracked for the next 3 years.

Results


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- The elimination of oversight from MST Services resulted in considerable program drift: 50% fewer family contacts, fewer families (16% vs. 46%) met treatment goals, youth were younger in age and had fewer court charges.
- Youth in the oversight group showed significant reductions in criminal charges at 1-year follow-up, whereas youth in the no oversight group did not show reduced criminal behavior.
- Note: The decreased effectiveness noted in this study is consistent with findings from Henggeler et al. (1997) and Lofholm et al. (2014).

Conclusions

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- Ongoing organizational support is critical to the successful dissemination of MST.
- Program drift can occur quickly when quality assurance procedures are not in place.
- It is important for community organizations to make a long-term commitment to oversight before implementation of an evidence-based treatment.



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Brunk, M. A., Chapman, J. E., & Schoenwald, S. K. (2014). Defining and evaluating fidelity at the program level in psychosocial treatments. *Zeitschrift fur Psychologie*, 222, 22-29. (#44)

Does MST Program Performance (composite measure including treatment adherence, treatment completion, program operations, program capacity, number of therapists, average caseload, drift on critical program practices) predict key youth- and team-level outcomes?

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Method: 496 MST teams and 25,114 families and youth followed over 2 years using existing data from the MST Institute

Findings: Low Program Performance (i.e., bottom quartile vs. top quartile) was associated with higher probabilities of youth rearrest (20% vs. 12%) as well as team closure (43% vs. 16%)

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Functional family therapy and multisystemic therapy: a comparison of target populations (#50)

Marieke Hendriks, Aurelie Lange,
 Marina Boonstoppel-Boender, & Rachel van der Rijken
 Netherlands

Orthopedagogiek: Onderzoek en Praktijk (2014)

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Purpose and Method

Purpose

To examine the assumption that higher risk and need families are referred to the more intensive MST whereas lower risk and need families are referred to the less intensive FFT

Method

Contrast baseline risk factors for the 689 families referred to MST with the 409 families referred to FFT

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Findings and Conclusions

Findings

- MST youths and families showed more risk factors at the level of the youth (male gender, low educational level, ethnic minority, police contacts) and family (low parental education level, low socioeconomic status).
- FFT youths reported more behavior problems.

Conclusions

- Although FFT youths reported more behavior problems, they are confronted with fewer risk factors in their environment.
- The most intensive treatment (MST) was used for the youths most at risk.

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Hebert, S., Bor, W., Swenson, C. C., & Boyle, C. (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. *Australasian Psychiatry*, 22, 370-373. (#45)

Qualitative study examined whether MST-CAN program facilitated collaboration with Child Protection in Australia.

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Results from interviews with Child Protection Team members

- Positive view of 24/7 availability of MST-CAN
- Appreciated improved communication, frequent contact, and partnership
- Positive view toward intervention model - strong engagement, intensive yet flexible interventions, addressing parental mental health problems

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OUTCOME RESEARCH (since 2014)






The effectiveness of Multisystemic Therapy (MST): A meta-analysis (#46)


van der Stouwe, T., Asscher, J. J., Stams, G. J. J. M.,
Dekovic, M., & van der Laan, P. H. (2014).
Clinical Psychology Review, 34, 468-481.

(University of Amsterdam, Utrecht University, Netherlands Institute
for the Study of Crime and Law Enforcement)



Design


- Meta-analysis of 22 studies 1985-2012 of MST with youth with delinquency or conduct disorder (6 of which were unpublished)
- Did not include MST-CAN, MST-Psychiatric, or MST-Health Care studies
- Studies included 4066 juveniles



Results

	<u>Mean <i>d</i></u>
Delinquency	.201***
Psychopathology	.268***
Skills and cognitions	-.016
Substance use	.291**
Family factors	.143**
Out-of-home placement	.267***
Peer factors	.213*

* $p < .05$; ** $p < .01$; *** $p < .001$



What Does $d = .2$ Mean Pragmatically?

Examples for delinquency (see Appendix B in article)


Butler et al. (2011) $d = .415$ --- study had 41% decrease in delinquency

Henggeler et al. (1997) $d = .115$ --- study had 26% decrease in delinquency

Examples for out-of-home placements


Letourneau et al. (2009) $d = .270$ --- study had 59% reduction

Borduin et al. (1995) $d = .260$ --- study had 57% reduction



Other Results and Conclusions

- Studies with larger improvements in parenting practices (not necessarily family relations) had better outcomes.
- Unfortunately, the effects of adherence were not examined.
- USA effect sizes larger than European effect sizes, but former included efficacy studies and those conducted by developers, which likely had higher adherence.
- Several other findings that are mathematically correct, but not necessarily conceptually valid due to the nature of the body of literature (e.g., subset of efficacy studies conducted by Borduin with very high effect sizes).




Sustainability of the Effects of MST for Juvenile Delinquents in the Netherlands: Effects on Delinquency and Recidivism (#29)

Jessica Asscher, Maja Dekovic, Willeke Manders,
Peter van der Laan, Pier Prins, & Sander van Arum

University of Amsterdam and Utrecht
University

Journal of Experimental Criminology (2014)



Design and Findings



- Follow-up to Asscher et al. (2013)
- 12-month follow-up on parent and adolescent reports of antisocial behavior
- 3-year follow-up on judicial data
- Further decreases in self-reported offenses and externalizing symptoms at 1 year
- No treatment effects were observed based on recidivism data (MST and TAU both had 71% rearrest rates)



Long-Term Prevention of Criminality in Siblings of Serious and Violent Juvenile Offenders: A 25-Year Follow-Up to a Randomized Clinical Trial of MST (#5)

David Wagner, Charles Borduin, Aaron Sawyer,
& Alex Dopp
University of Missouri

Journal of Consulting and Clinical Psychology (2014)

Design and Findings



Parent study: The Borduin et al. (1995) RCT comparing MST vs. individual therapy (IT) with 176 serious juvenile offenders

- Present study participants: 129 closest in age siblings
- 25-year follow-up - mean age of siblings = 38.4 years
- Arrest rate: MST = 43%; IT = 72%
- IT siblings 3X the felony rate as MST siblings
- IT siblings 2X the incarceration rate



The Economic Impact of MST through Midlife: A Cost-Benefit Analysis with Serious Juvenile Offenders and Their Siblings (#5)

Alex Dopp, Charles Borduin, David Wagner,
& Aaron Sawyer

University of Missouri

Journal of Consulting and Clinical Psychology (2014)

Design and Findings



Parent study: The Borduin et al. (1995) RCT comparing MST vs. individual therapy (IT) with 176 serious juvenile offenders

- Present study includes original youths and 129 closest-in-age siblings in a 25-year follow-up
- Examined (a) taxpayer costs (e.g., community supervision, incarceration) and (b) crime victim costs (e.g., property damage, medical care, pain and suffering)
- Cumulative benefit of MST = \$35,582 per juvenile offender and \$7,798 per sibling



One of 3 MST-FFT Publications in 2013-2014

Baglivio, M. T., Jackowski, K., Greenwald, M. A., & Wolff, K. T. (2014). Comparison of multisystemic therapy and functional family therapy effectiveness: A multiyear statewide propensity score matching analysis of juvenile offenders. *Criminal Justice and Behavior*, 41, 1033-1056. (#42)

- Quasi-experimental design - youth followed for 1 year post treatment
- 2,203 youth (2/3 low risk) referred to Florida MST or FFT programs (no usual services comparison)
- During treatment compared new offense or violation of probation: No differences when controlling for time at risk (119 days for MST, 95 days for FFT)
- After treatment compared adjudications: No differences

Outcome Study with Primarily Hispanic (74%) Juvenile Offenders



Fain, T., Greathouse, S. M., Turner, S. F., & Weinberg, H. D. (2014). Effectiveness of multisystemic therapy for minority youth: Outcomes over 8 years in Los Angeles County. *OJJDP Journal of Juvenile Justice*, 3, 24-37. (#40)

- Quasi-experimental design - MST vs. usual services followed for 6 months post recruitment
- 1,137 chronic juvenile probationers and their families in Los Angeles
- Outcomes
 - Decreased arrests (36%) and incarceration (58%) for Hispanic youth, but not for Black youth
 - Pre-post outcomes for just MST youth: Improved parenting skills, family relations, social supports, educational/vocational success and involvement with prosocial peers

The Economic Impact of Multisystemic Therapy with Juvenile Sexual Offenders (#9)

Charles Borduin & Alex Dopp
University of Missouri

Journal Family Psychology (2015)

Design and Findings



Parent study: Borduin, Schaeffer, & Heiblum (2009) RCT comparing MST vs. treatment as usual with 48 juvenile sex offenders and their families

- 9-year follow-up
- Examined (a) taxpayer costs (e.g., community supervision, incarceration) and (b) crime victim costs (e.g., property damage, medical care, pain and suffering)
- Cumulative benefit of MST = \$343,455 per MST participant



PROCESS RESEARCH (since 2014)

3 Studies Examining Moderators of MST Outcomes



These ask the question: "In what context or for whom is MST most effective?"

- Robinson, B. A., Winiarski, D. A., Brennan, P. A., Foster, S. L., Cunningham, P. B., & Whitmore, E. A. (2014). Social context, parental monitoring, and multisystemic therapy outcomes. *Psychotherapy*, Advance online publication. (#31)
- Tiernan, K., Foster, S. L., Cunningham, P. B., Brennan, P., & Whitmore, E. (2014). Predicting early positive change in multisystemic therapy with youth exhibiting antisocial behaviors. *Psychotherapy*, Advance online publication. (#31)
- Weiss, B., Han, S. S., Tran, N. T., Gallop, R., & Ngo, V. K. (2014). Test of "facilitation" vs. "proximal process" moderator models for the effects of multisystemic therapy on adolescents with severe conduct problems. *Journal of Abnormal Child Psychology*, Advance online publication. (#34)

Findings




- Robinson et al.: Improved parental monitoring was associated with decreased externalizing behavior in better neighborhoods, but not in more disadvantaged neighborhoods.
- Tiernan et al.: Decreased antisocial behavior early in treatment was associated with absence of drug use, high parental monitoring, and low association with deviant peers.
- Weiss et al.: Favorable MST effects were larger among families with higher levels of positive family relationships and parental mental health as well as with families high in ineffective parenting.



Gang involvement moderates the effectiveness of evidence-based intervention for justice-involved youth (#51)

Paul Boxer, Joanna Kubik, Michael Ostermann,
& Bonita Veysey
Rutgers University, New Jersey

Children and Youth Services Review (2015)



Design, Results and Success Rates

Design


- 421 youth followed through post treatment
- Measures: gang involvement; successful vs. unsuccessful case closure

Results

- Gang involvement, especially current gang membership, significantly reduced successful treatment completion – even when controlling for risk factors!


Success Rates

	<u>Gang-involved</u>	<u>Not gang-involved</u>
Any indicator	69%	81%
Currently in a gang	33%	80%



Why and What’s Next?

- Gang ties can be intense, long-lasting, and difficult to sever.
- Therapeutic challenges working in gang-involved neighborhoods**
 - lack of positive community resources
 - therapist discomfort working in such neighborhoods interferes with therapeutic alliance (see Glebova et al., 2012).
- Qualitative study to examine “what went wrong” in unsuccessful cases and “what went right” in successful cases**




Developing a model of sustained change following multisystemic therapy: young people’s perspectives (#54)

AND

Sustaining change following multisystemic therapy: caregiver’s perspectives (#54)

Pinder Kaur, Helen Pote, Simone Fox, & Daphne Paradisopoulos
University of London

Both articles in: *Journal of Family Therapy (2015)*



Conclusions from Interviews with Youths (N=8) & Caregivers (N=12)


From youths’ perspectives, sustained positive change was attributed to:

- The therapeutic alliance
- Improved awareness of self and others
- Removing negative peer influences
- Actively building a positive future

From caregivers’ perspectives, sustained positive change was attributed to:

- The therapeutic alliance
- Shifting to a more interpersonal perspective
- Increasing family resilience in facing difficulties

Authors’ emphasized the importance of the therapeutic alliance and youth cognitive changes in facilitating favorable MST outcomes.



Westin, A. M. L., Barksdale, C. L., & Stephan, S. H. (2014). The effect of waiting time on youth engagement to evidence based treatments. *Community Mental Health Journal*, 50, 221-228. (#41)

Data from a statewide implementation of FFT and MST in Maryland
Sample: 2,054 youth and families referred 2009-2011

Findings


- Waiting time associated with treatment refusal.
- Waiting time associated with treatment dropout for FFT, but not for MST.



IMPLEMENTATION RESEARCH QUALITATIVE (since 2014)




Two Studies on Components of the Effective Large Scale Implementation of MST: In US and in Chile




Making it happen: State progress in implementing evidence-based programs for delinquent youth (#52)

Brandon Welsh & Peter Greenwood
 Northeastern University and
 Association for the Advancement of Evidence Based
 Practice
Youth Violence and Juvenile Justice (2015)



Method

- Counted number of MST, FFT, and MTFC teams in each state in 2011 per million population.
- Interviewed 59 stakeholders in the 5 states with the most teams per million population: New Mexico, Louisiana, Maine, Connecticut, and Hawaii.



Findings

States that had made the most progress in implementing these EBPs:

- Included structured involvement of all stakeholders
- Had effective champions
- Provided special funding and pilot testing of new programs
- Provided technical assistance for adopters



Multisystemic therapy in Chile: A public sector innovation case study (#55)



Rodrigo Pantoja
 Grupo Precisa Consultores
Psychosocial Intervention (2015)

Purpose and Method



Purpose

To describe the decision-making process by which MST was adopted and implemented on a large scale in Chile

Method

Examined pertinent government documents from 2004 to 2015

Conclusions



The large-scale implementation of MST in Chile was a case of public sector innovation facilitated by:

- Pre-existing knowledge and data (e.g., prevalence data, knowledge of delinquency literature and of evidence-based practices)
- Collaboration among the central government, police, municipalities, and MST Services
- Leadership of the Undersecretariat for Crime Prevention

Questions?

