Multisystemic therapy

Intensive, home-based therapy for families with young people who have social, emotional and behavioural problems. This summary is part of the Crime Reduction Toolkit, which presents the best available research evidence on what works to reduce crime.

First published
19 February 2015
Updated
29 July 2025

Effect scale	Quality of evidence				
	Effect Impact on crime	Mechanism How it works	Moderator Where it works	Implementation How to do it	Economic cost What it costs
Some reduction	■■■■ Very strong	■□□□ Low	■□□□ Low	■□□□ Low	■■■■ Very strong

Focus of the intervention

Multisystemic therapy (MST) is an intensive, home-based intervention for families with young people who have social, emotional and behavioural problems.

Qualified therapists engage with family members to identify and change individual, family and environmental factors thought to be contributing to problem behaviour in children and young people, for example severe antisocial behaviour, delinquency or substance misuse. MST may include efforts to improve:

- communication
- parenting skills

- peer relations
- school performance
- social networks

What research is this summary based on?

This Crime Reduction Toolkit summary is based on the findings of five systematic reviews.

These include a combined total of 59 studies (35 unique studies) examining the impact of MST:

- Review one is a meta-analysis of 23 studies that looked at outcome data at one, two and a half and four years after treatment. Review one contributes to the effect, mechanism and implementation sections, as well as providing additional information on economic cost.
- Review two is a meta-analysis of 28 studies that examined the effect of a wider category of interventions (family-based treatments) on serious and violent juvenile reoffending. 19 of the 28 studies specifically looked at the impact of MST. Only the review's findings on MST are included in this summary. Review two contributes to the effect section, as well as providing additional information on economic cost.
- Review three is an earlier version of Review one. This review included eight studies which compared individuals who received MST to those who received usual services or other treatments. Review three contributes only to the implementation section.
- Review four included 11 studies focusing on family-based treatments, five of which focused on the cost-effectiveness of MST in treating substance use disorders, offending and externalising disorders (problematic behaviour characterised by poor impulse control). Review four contributes only to the economic cost section.
- Review five included 10 studies, four of which focused on MST for problem sexual behaviour (PSB) in young people. Review five contributes to the mechanism and moderator sections, as well as providing additional information on economic cost.

Review one

The overall evidence for this summary is taken from Review one, which involved almost 4000 participant families who were randomly assigned to eligible treatment and comparison conditions. 16 studies were conducted in the USA, three in the UK, and one each in Canada, the Netherlands, Norway and Sweden. The comparison groups were made up of treatment as usual, an alternative treatment condition (individual or group therapy) or no treatment. The target population was defined

as:

- abused, neglected and dependent children and young people at risk of foster care or other out-of-home placements in child welfare settings
- children and young people with mental health problems at risk of psychiatric hospitalisation
- young people at risk of imprisonment or placement in residential treatment settings

Crime-related outcomes were recorded as rates of arrest or conviction, numbers of arrests or convictions, and self-reported offending.

Effect – how effective is it?

The research suggests that MST has not had a statistically significant effect on crime overall. However, some primary studies covered by the reviews showed decreases in arrests or convictions and self-reported offending.

Review one

Review one showed that, overall, MST:

- did not significantly affect the likelihood of arrest or conviction one year, two and a half years and four years after treatment
- resulted in a statistically significant reduction in the number of arrests or convictions one year after treatment, but not after two and a half or four years
- had no significant effect on self-reported offending at any follow-up period after treatment

Among the primary studies covered by review one, findings were inconsistent. Differences were found between studies of MST undertaken inside and outside the USA, and between studies carried out by developers of the MST programme being tested, and those carried out by independent researchers. Studies involving developers of MST programmes potentially carry a risk of bias towards the intervention.

- One year after treatment: Five studies in the USA (four of which involved MST developers) showed a statistically significant reduction in the number of arrests or convictions. However, three independent studies in the UK and Canada showed no significant effects.

- Two and a half years after treatment: The pooled results of five non-US independent studies showed a statistically significant increase in the likelihood of arrest or conviction (although the overall effect for all studies was not significant). One independent US study showed a statistically significant reduction in the number of arrests or convictions, but all other studies (two inside the USA, and four outside) did not show a significant effect.

Review one highlighted the following statistically significant effects on non-crime outcomes one year after treatment:

- reduction in the likelihood of out-of-home placement (in the USA)
- reduced parental mental health problems
- increased parental social support

Review two

Review two examined 266 effect sizes across 19 studies specifically related to the impact of MST. It found that, overall, MST had no statistically significant effect on a range of crime and non-crime outcomes, including anti-social behaviour, arrests and family functioning.

How robust is the review evidence?

- The quality of review methods used to assess the impact of MST was very strong.

Review one

Review one was sufficiently systematic that most forms of bias that could influence the study conclusions can be ruled out.

The evidence is taken from a systematic review covering 23 studies. The review had a well-designed search strategy. This included literature published through commercial and non-commercial routes, an appropriate calculation of effect size, and consideration of heterogeneity, dependency, inter-rater reliability and publication bias. As reported above, Review one found differences between studies conducted inside and outside the USA, and those carried out with developers and by independent researchers.

Review two

Review two was sufficiently systematic to eliminate most forms of bias. The meta-analysis in Review two included 13 primary studies which were also included in Review one, thus there is a high degree of overlap between the two reviews.

Mechanism – how does it work?

- The quality of review methods used to assess how MST works was low.

While the reviews suggested several possible mechanisms for how MST might work, no information was available from the primary studies to test whether these mechanisms were responsible for the outcomes observed.

The following mechanisms were suggested for MST.

Review one

Review one emphasised that MST is not defined by a unique set of techniques, but draws on approaches from other problem-solving treatment models such as structural family therapy and cognitive behavioural therapy. MST is distinguished from other types of intervention by its broad focus on clinical problems and variety of approaches.

The review suggested several possible mechanisms through which MST might work. When therapists develop and test hypotheses about the causes of problems and their solutions, interventions can be more targeted to the individual. This increases the likelihood of rapid treatment progress and meeting treatment goals.

At the beginning of each case, MST therapists aim to develop clear and measurable goals in collaboration with family members and other community agencies. Therapists and clients link the reasons for referral to outcomes desired by family members and other participants, to identify overarching goals. Emphasis is on understanding reasons for referral and the factors that contribute to or maintain those problems.

Review five

Review five suggested that the overarching goals of MST are to empower caregivers (and other important adult figures) with the skills and resources to address young people’s problem sexual

behaviour (PSB) and other problems. MST-PSB therapists use several standard interventions at the level of the:

- individual (social skills training, cognitive restructuring of thoughts about offending)
- family (caregiver skills training, communication skills training, marital therapy)
- peer group (developing prosocial friendships, discouraging affiliation with offending and drug-using peers)
- school (establishing improved communication between caregivers and school personnel, promoting academic achievement)

Moderators – in which contexts does it work best?

- The quality of review methods used to assess where, when and for whom MST might work best was low.

Review five

Review five suggested that the effect of MST on juvenile sexual offending is not influenced by the age of the victim (whether the victim is a child or adult) or level of perpetrator aggression.

Implementation – what can be said about implementing this initiative?

- The quality of review methods used to assess how to implement MST was low.

Review one

Review one highlighted how MST may involve:

- a time-limited service to the whole family (four – six months)
- a treatment team that consists of professional therapists and crisis caseworkers, supervised by clinical psychologists/psychiatrists
- qualified therapists who are mental health professionals, available to programme participants 24 hours a day, seven days a week

- individualised treatment to address the specific needs of young people and families and including work with other social systems
- licensed treatment by MST services, which provides information and quality assurance tools

Review three

Review three noted that quality assurance procedures may be used to check that programmes are delivered and followed as intended. These include staff training, weekly consultation and the use of a rigorous research design.

Economic considerations – how much might it cost?

- The quality of review methods used to assess how much MST might cost was very strong.

Review four

Review four conducted cost-effectiveness analysis, suggesting that MST can be a cost-effective intervention over the long term (12 months) for some types of behaviour.

When delivered to serious young offenders, MST produced economic benefits well into adulthood, and lasting economic benefits specifically when treating young sex offenders for problem sexual behaviour (MST-PSB). However, the benefits of MST did not offset the costs for adolescents with conduct disorder (persistent behavioural problems including anger and irritability), where the treatments lead to a net loss.

MST, when delivered in combination with care as usual, has the potential to generate cost savings when compared to providing care as usual alone.

Reviews one, two and five included additional sources of data about the costs and benefits of implementation.

- Studies in review one estimate that the cost of direct services, supervision, quality assurance, administration and court activity is $6,416 per case in the USA and £7,312 per case in the UK (Barnoski 2009, NICE 2013). The cost of MST-PST in the UK is estimated to be £10,000-12,000 per case (Fonagy 2017).

- Review one's authors highlighted early projections in the USA and the UK that indicated that MST could reduce costs related to public services, education and crime (Aos 2006, Barnoski 2009, NICE 2013). However, if MST does not reduce imprisonment, hospitalisation, reoffending and problem behaviours, it is not a cost-effective treatment in comparison to less expensive alternatives.
- Review two highlighted significant returns to taxpayers and crime victims for every dollar spent on MST ($1.74). However, this value was primarily based on studies that did not include serious young offenders.
- Review five estimated the net benefits of MST-PSB over CBT at $343,455 per MST-PSB participant, with a return of $48.81 in savings to taxpayers and crime victims.

General considerations

- Review one suggested that MST should involve stakeholders to improve implementation, resulting in better outcomes.
- It noted that there are still gaps in knowledge about the widespread implementation of MST, its long-term effects, and mechanisms of change.

- Over half (57%) of the studies included in Review one involved MST program developers, which were all located in USA and therefore carry a risk of bias towards the treatment.

- The review suggested that study location is relevant to the effects of the treatment. USA control groups received fewer services and showed worse outcomes than control groups in independent trials conducted in other high-income countries. In addition, moderator analysis showed that effects on arrests are greater in the USA than in other countries.

Summary

- The research suggests that MST has not had a statistically significant effect on crime overall.

However, some primary studies have shown decreases in different outcome measures including likelihood of arrest, numbers of arrests, convictions, and self-reported offending.

The overarching goals of MST are to empower caregivers (and other important adult figures) with the skills and resources needed to address young people's problem sexual behaviour and other behaviour problems.

By developing and testing hypotheses about the causes and solutions to problems, therapists minimise random acts of intervention and increase the likelihood of rapid treatment progress and sustainability of treatment goals.

MST does not have a unique set of interventions but is multifaceted and draws on treatments from problem-focused treatment models. Therefore, while the general principles might be replicated, there is no universal model.

MST, when delivered in combination with care as usual, has scope to generate cost savings when compared to providing care as usual alone.

Reviews

Review one

Quality of evidence			
Mechanism **How it works**	**Moderator** **Where it works**	**Implementation** **How to do it**	**Economic cost** **What it costs**
■□□□ Low	No information	■□□□ Low	No information

Reference

- Littell JH and others. 2021. '**Multisystemic Therapy® for social, emotional, and behavioural problems in youth age 10 to 17: An updated systematic review and meta?analysis**'. Campbell Systematic Reviews, 17(4), e1158.

Review two

Quality of evidence			
Mechanism **How it works**	**Moderator** **Where it works**	**Implementation** **How to do it**	**Economic cost** **What it costs**
No information	No information	No information	No information

Reference

- Dopp AR and others. 2017. '**Family-based treatments for serious juvenile offenders: A multilevel meta-analysis**'. Journal of Consulting and Clinical Psychology, 85(4), p. 335

Review three

Quality of evidence			
Mechanism **How it works**	**Moderator** **Where it works**	**Implementation** **How to do it**	**Economic cost** **What it costs**
No information	No information	■□□□ Low	No information

Reference

- Littell JH and others. 2005. '**Multisystemic Therapy for social, emotional, and behavioral problems in youth aged 10-17**'. Cochrane Database of Systematic Reviews, Issue 4.

Review four

Quality of evidence			
Mechanism **How it works**	**Moderator** **Where it works**	**Implementation** **How to do it**	**Economic cost** **What it costs**
No information	No information	No information	■■■■ Very strong

Reference

- Goorden M and others. 2016. '**The cost-effectiveness of family/family-based therapy for treatment of externalizing disorders, substance use disorders and delinquency: A systematic review**'. BMC psychiatry, 16(1), pp 1-22.

Review five

Quality of evidence			
Mechanism **How it works**	**Moderator** **Where it works**	**Implementation** **How to do it**	**Economic cost** **What it costs**
■□□□ Low	■□□□ Low	No information	No information

Reference

- Dopp AR, Borduin CM and Brown CE. 2015. '**Evidence-based treatments for juvenile sexual offenders: Review and recommendations**'. Journal of Aggression, Conflict and Peace

Research, 7(4), pp. 223–236.

Additional resources

Aos S, Miller M and Drake E. 2006. 'Evidence?Based public policy options to reduce future prison construction, criminal justice costs, and crime rates'. Olympia, WA: Washington State Institute for Public Policy.

Barnoski R. 2009. 'Providing evidence?based programs with fidelity in Washington State Juvenile Courts: Cost analysis'. Report No.: 09?12–1201. Olympia, WA: Washington State Institute for Public Policy.

Fonagy P and others. 2017. 'Evaluation of multisystemic therapy for adolescent problematic sexual behaviour'. Children's Social Care Innovation Programme Evaluation Report.

National Institute for Health and Care Excellence. 2013. 'Antisocial behaviour and conduct disorders in children and young people: The NICE guideline on recognition, intervention and management'. National Clinical Guideline Number 158. London: National Collaborating Centre for Mental Health and Social Care Institute for Excellence.

Related Crime Reduction Toolkit summaries

Other Crime Reduction Toolkit summaries of relevance to multisystemic therapy include:

- therapeutic foster care
- cognitive behavioural therapy

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