# Evaluation report MST Cambridgeshire 08-2015

## Summary


Young people with antisocial behaviour pose substantial difficulties for local authorities. In addition to threatening public safety and disrupting the education system for other young people, families of these children incur heavy financial costs.

These behaviours significantly impact functioning and quality of life during childhood and adolescence and are associated with an increased rate of mental health need during adulthood (NICE 2013)

Multisystemic Therapy (MST) is a unique evidence based intervention that has established a proven record of success with this challenging population. This report summarises the outcome of work by the Cambridgeshire MST service. It includes data from multiple studies, reports and audits.

June 2008 – July 2015: 160 MST standard cases completed

Additionally, this report includes data from the highly specialized MST-PSB service, dedicated to stopping problem sexual behaviour in young people.

June 2012 – July 2015: 31 MST-PSB cases completed


## Results from multiple sources show dramatic improvement for families through MST treatment.

### MST-Standard

- From the start to the end of treatment young people of families in the MST programme improved in every aspect measured; from a reduction in necessary social care involvement, police involvement and mental health difficulty – to improvement in education attendance and achievement
- 90% of children on the 'edge of care' remained with their families for at least 12 months after discharge.
- 66% of convicted young people did not reoffend after MST in a twelve month follow up study.

### MST-PSB

- 95% of children remained at home with their families 12 months after discharge.
- 94% of children did not reoffend

## Over £4 million in savings to Cambridgeshire since June 2008 from MST standard alone…

- Reports suggest that on average 52% of young people suitable for MST but receiving other services instead become looked after within a year of referral, with an average LAC cost of £68,000 per young person.
- A full five months of MST treatment costs Cambridgeshire only £12,000 per family.
- That's a savings of £56,000 per family.
- 90% of the 160 young people (i.e. 144) remained at home at least 12 months after discharge.
- MST is creating and sustaining behavioural change.

# Introduction

The Multisystemic Therapy (MST) service is an intensive, home and community-based therapy service for families of children aged 11-17 with severe behavioural difficulties. These difficulties are deemed to be severe if they are putting the young people at risk of out of home placement through local authority care or custody.

Referrals to the MST service can be made through social care, the youth offending service and child & adolescent mental health

Prior to MST:

1.5 convicted offenses per young person within the 12 months prior to referral

70% of cases have social care involvement – 57% have a CIN plan

# Features

From the time in which the case is allocated the family has access to the MST service 24 hour on call service, which has been highly valued by the families.

Once engaged the MST therapist visits the family at least three times per week in their home.

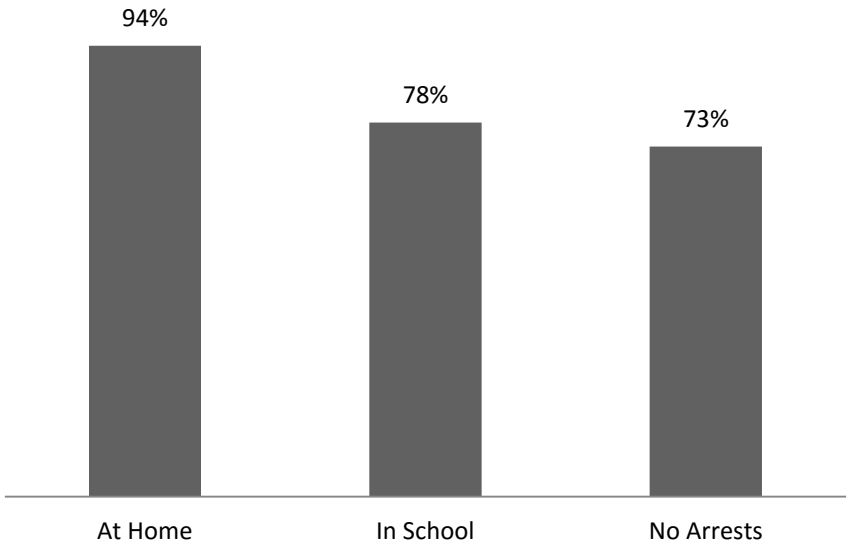
In the 5 month treatment time the MST team empowers families to stop or reduce referral behaviours and build tools to meet new challenges after discharge


*Cambridgeshire MST was one of the first three teams to launch in the UK in 2001. Now there are over 35 MST teams across England, Scotland and Northern Ireland.*

**MST has been established through over 30 years of research and over 12,000 cases completed worldwide each year**

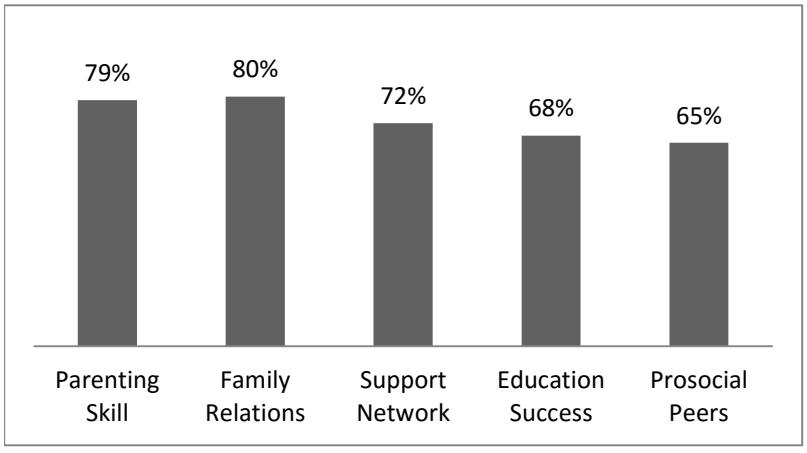
MST is a licensed programme that has a proven track record of effectiveness. MST services oversee the intensive psychology led supervision and quality assurance system.

# Ultimate Outcomes at Discharge




This data records the outcomes at the time of case closure for all of the 160 families with an opportunity for a full course of treatment in Cambridgeshire since June 2008. That's 94% of cases accepted by MST completing treatment.

A child is seen to be living at home if they are not in local authority care or custody at the time of discharge. A young person is seen to be regularly attending school if they attend at least 85% of the amount of time offered by education. Offending is recorded if a young person has been charged.




This chart reflects the % of families that improved in areas instrumental to the overall success.

## Data Sources

Cambridgeshire MST was evaluated by Oxford University in 2004 and showed better outcomes than other YJB alternative to custody programmes . The change in number of recorded offences pre and post 24 months was 65% in comparison to 39% nationally.

*Since 2008programme data has been collected using multi-agency databases.. This report considers the 160 standard cases and 31 PSB cases completed by Cambridgeshire MST since MST was reconfigured as a stand-alone service.*

*The ultimate outcomes of MST include; a young person being at home and in school with no new charges since the beginning of treatment. The success of outcomes in each case is agreed by the MST therapist and supervisor in collaboration with the referring professional. Any challenge to these outcomes by a professional results in the outcome not being met. Results are entered into the worldwide MST database (MSTI).*

*Data on number of days in care post discharge is available in the shared database 'ONE.'*

*Demographic, mental health and family functioning data are collected by the MST team at the start and end of treatment using measurements from well-established publications.*

# Mental Health Data



The strengths and difficulties questionnaire (SDQ) developed by Goodman *et al* (1997) has been used to collect the data below. Norms for the tool now exist for the United States of America, Australia, the United Kingdom, Denmark, Finland, Italy, Germany, Japan, Spain & Sweden. The questionnaire is used in research worldwide and is recognised as an accepted screening tool providing sound psychometric properties across 48 validity and transportability studies at the time of this report (see www.sdqinoorg for a complete list).

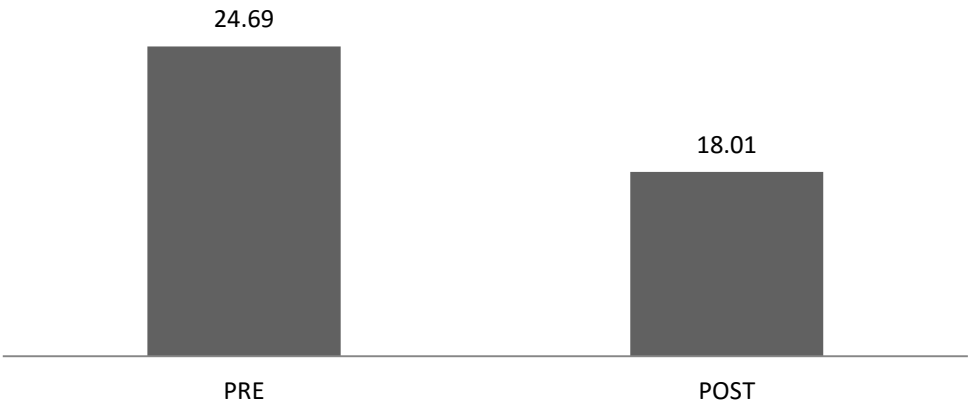
The SDQ is a set of 25 brief items aimed at identifying factors across six domains:

1) Emotional symptoms
2) Conduct problems
3) Hyperactivity/inattention
4) Peer relationship problems
5) Pro-social behaviour
6) Impact

## Total Difficulties

The SDQ was delivered to families by an MST therapist at the start and end of treatment.

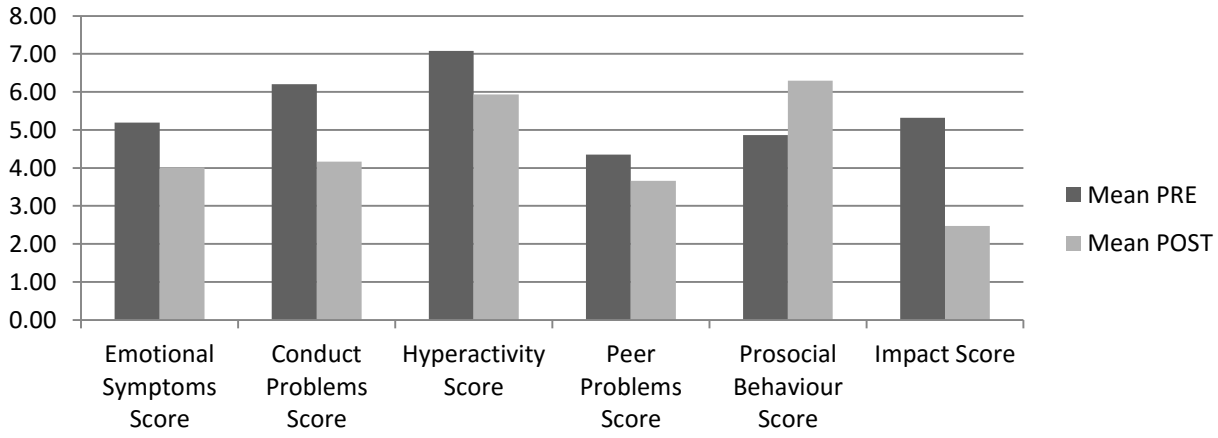
These results have been collected by our team.




Results from 56 Cambridgeshire parents indicate that the difference in overall difficulties from the beginning to the end of treatment is significant. It represents a 41% improvement toward normative values for the UK. Scores greater than 17 represent abnormal behaviour.

# Mental Health Data Continued





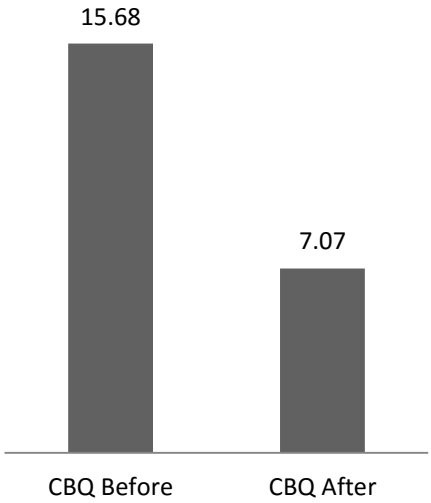

Mental health data broken down across each of the domains indicates that 56 parents report young people benefit from MST treatment in each area measured.

All of these differences are statistically significant.

The highest change in pre and post scoring is the impact score. This indicates that although issues may remain the impact on their daily functioning has significantly been reduced.

# Conflict Behaviour Questionnaire

A 20 item conflict behaviour questionnaire (Robin & Foster, 1989) was delivered to families before and after MST treatment. The scale is true/false and generates a single score representing the level of conflict present over the last two weeks of interaction. Scales have been validated for various members of the family. The scale used here is completed by parents with respect to conflict between them and their child. As an example: My teenager often seems angry at me (true or false). A copy of the questionnaire was delivered to parents before and after treatment. Each parent receiving treatment in the 2012-13 and 13-14 financial years received a copy. The data included here represents the 30 families that completed both the start and end questionnaires.




If a family scores 15 or higher on the questionnaire they are considered 'distressed.' On average, families are no longer considered 'distressed' at the end of MST treatment.

# Parenting Changes

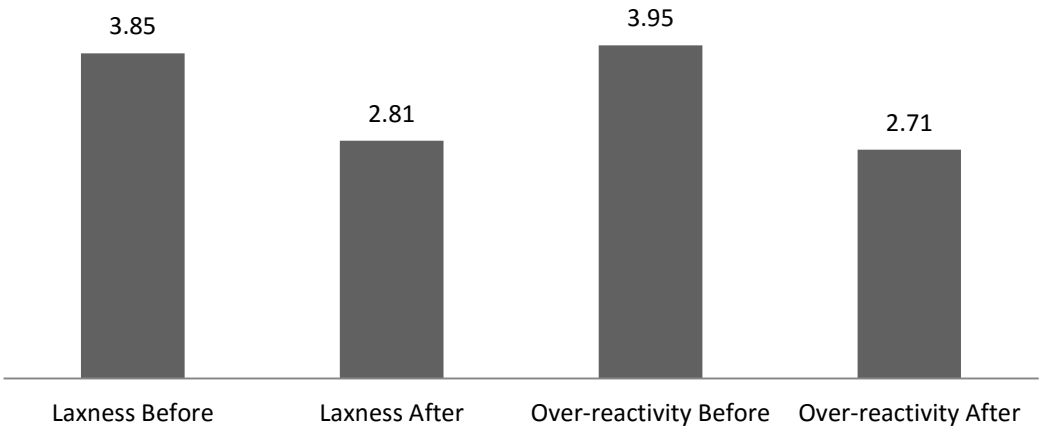


A 13 item parenting scale was administered to families in the MST programme both before treatment and after case closure. It asks parents to estimate on a 7 point sliding scale how closely they identify with statements responding to various parenting scenarios over the last two months. Examples include:

When my child misbehaves…
I raise my voice or yell 1 2 3 4 5 6 7 I speak calmly to my child.

This specialist 13 item scale for adolescents was developed and validated by Irvine, Biglan, Smolkowski & Ary (1999) as a brief version of the 30 item parenting scale originally developed by Arnold, O'Leary, Wolff & Acker (1993), and has been used by the Triple P programme to demonstrate effective change in parenting. The aim is to measure if parenting has become more consistent as an outcome of treatment.

## Results



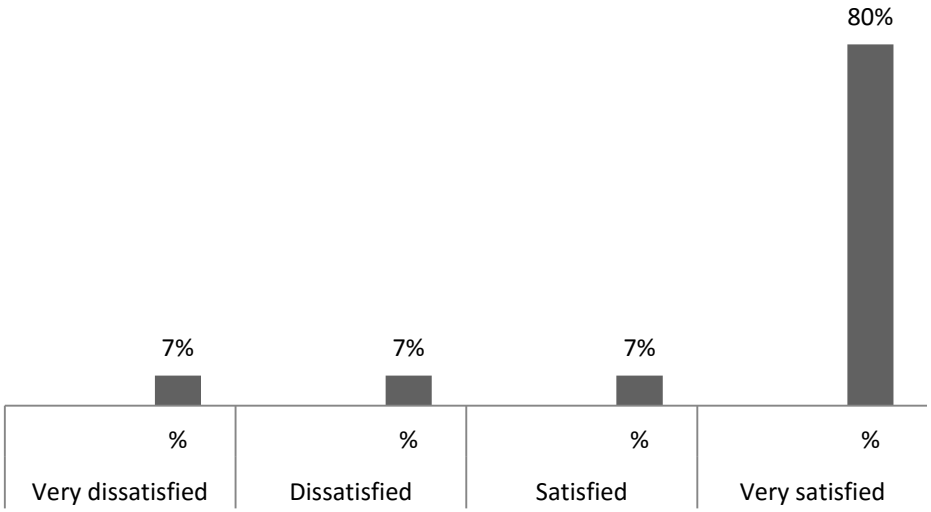

Results from 30 families indicate a significant decrease in both laxness and over-reactivity, suggesting a more consistent and authoritative parenting style.

MST works with parents to establish clear rules and expectations with rewards and consequences so that parents move towards an authoritative parenting style rather than a permissive or authoritarian.

# Client Satisfaction Data

High levels of client satisfaction with a service increase the likelihood of families continuing to practice the strategies and habits developed through therapy.

A client satisfaction questionnaire was administered to all 29 families in the 2013-14 financial year. Of the families receiving the questionnaire, 17 responded. The responding families likely constitute a representative sample of the population served, in that the average outcomes for those families did not differ significantly from the full group.




*"MST has transformed our family life. We couldn't be happier with the outcome and we feel prepared to deal with our children in the future. MST has been amazing and has worked hard with our family. It's built our confidence as parents and has helped us save our family and even our marriage. We are a happy family that's working together for a better future, prepared with the tools MST helped us gain."*

*"MST has been fantastic for me and the family and will remember the advice and strategies to keep my family happy."*

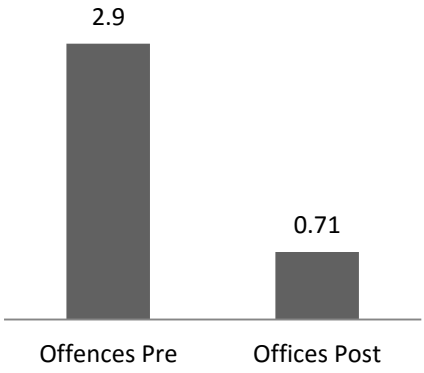
*"Found MST very supportive. Always ready to listen with a kind ear."*

*"MST has made a huge difference with the way my family solves problems"*

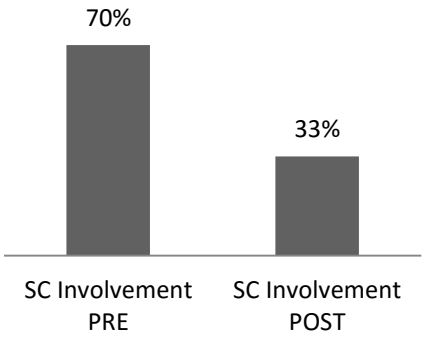
# MST-Standard Sustainability



- A sample of high risk offending cases was selected from the total number of MST cases reported above. This group of 24 young people is defined by young people having at least one recorded offence within the 12 months prior to MST intervention. The number of offences per young person within the 12 months following MST is reported below, and represents a 76% reduction in offences per young person 12 months after MST. Within this cohort, 66% of young people did not reoffend at all.




- A 12 month follow up audit completed in 2011 revealed that of the 24 audited cases, 70% of them were open to social care at the time of the referral (57% on a child in need plan). Twelve months following discharge the percentage involved dropped to 33% (27% on a child in need plan).




- There is an urgent need for all edge of care services to demonstrate a reduction in LAC numbers. The MST standard service has an established track record of preventing young people from becoming looked after.

- The MST standard team also has a history of successfully reunifying families, bringing young people from the LAC population back into their homes. The data above represents the percentage of young people from the start of the 2012 financial year to the present.

- As cases are allocated from a pool of referrals based on need, all of the cases receiving treatment have been agreed by a panel to be in urgent need of the service in order to avoid LAC.

- Of the last 90 cases with an opportunity to be followed up for 12 months post discharge, 2 of those cases were classed as reunification (i.e. young person outside the home and classed as LAC at the time of opening). One of those reunification cases is considered successful, with the young person remaining at home without any stays in care within the 12 months after discharge. The other case had a short stay in care. The MST standard team has taken on further reunification cases within the last 12 months. The case example below is one such case. Of the 88 edge of care cases reviewed, 4 entered care within the 12 months following discharge.

# MST Standard Case Example



Clarice, aged 16, was referred into MST following an incident of violence in the home in which she was taken into care. Parents were reporting that they were unable to manage her behaviour within the home, describing it as abusive and violent. Parents reported that Clarice had attacked her mother with a rolling pin. She and her family had been working with the specialist family support service (SFSS) for approximately three weeks prior to the incident. Clarice had been open to CAMH for some time prior to the incident, which concluded with a diagnosis of oppositional defiant disorder. At the time of the referral to MST it was observed by the social worker that Clarice's mental health had been deteriorating to the point where she self-loathed, had little confidence or self-esteem and reported feeling confused about her family life. Clarice was reporting that she wanted to return home.

A comprehensive safety plan was drafted ahead of Clarice's return home. This involved identifying warning signs of a potential incident and establishing means of de-escalating or avoiding conflict. Clear behaviour plans were put in place to ensure that parents did not need to engage in debate with Clarice around the consequences for negative behaviours. Parents were coached in ways of communicating effectively with Clarice, how to display warmth and empathy when dealing with Clarice's anger and frustration, and how to ensure a calm environment when setting boundaries. These skills were practiced in session using cognitive behavioural therapy techniques to help parents overcome their personal barriers to implementing interventions with Clarice.

Parents worked with the MST therapist to identify pro-social activities for Clarice. They identified her peers as being positive or negative, and introduced incentives for Clarice to spend time with positive peers and engage in pro-social activities.

Throughout treatment, the whole family engaged well in the service. Each family member contributed to discussions around the strategies to overcome any potential barriers that had been identified. Parents developed an ability to explore the different drivers for Clarice's behaviours and understand what they control. By the end of treatment parents were using effective incentives for behaviours and were able to develop appropriate strategies to manage Clarice's behaviours outside of MST sessions. A positive and warm relationship developed between parents and Clarice through treatment.

The family still identify some challenging behaviours, however parents are consistent with consequences and are clear in communicating these to Clarice. Due to this Clarice has significantly reduced her physical and verbal aggression and has also improved in her time keeping and school achievement.

When asked at the end of treatment whether there were any other comments about MST- Mum wrote;

"MST has helped us find ways to put things right to work well for all the family. We have set goals and been given the help to achieve those goals and give us the confidence that we can deal with the future issues that may crop up".

The strengths and difficulties questionnaire for this family revealed that Clarice's mental health has improved significantly from the start of treatment, particularly around her emotional symptoms and the impact her family difficulties have on her life. Clarice is still living at home with her family.

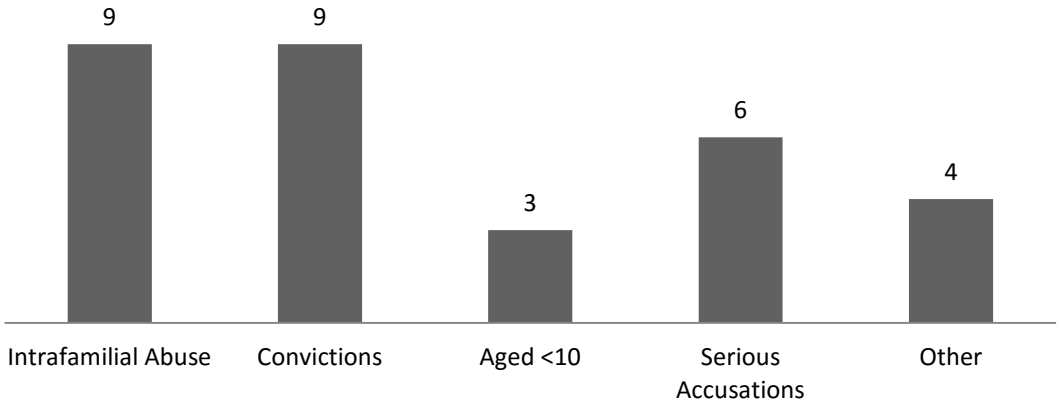
# MST PSB



The MST PSB (problem sexual behaviour) service is a highly specialist service targeted at families of young people aged 10-17 who have committed a sexual offence, or who are exhibiting concerning sexual behaviour that places them at imminent risk of being removed from their home and placed into local authority care or custody.

The MST PSB adaptation is built on the foundation of MST standard and has its own evidence base of three randomized clinical trials since 1990.

Young people presenting with sexualised behaviours are at particularly high risk of being placed into care due to high concern from parents and professionals around sexual behaviours. This same level of concern applies to the education system, with schools more reluctant to admit young people with a history of problem sexual behaviour.

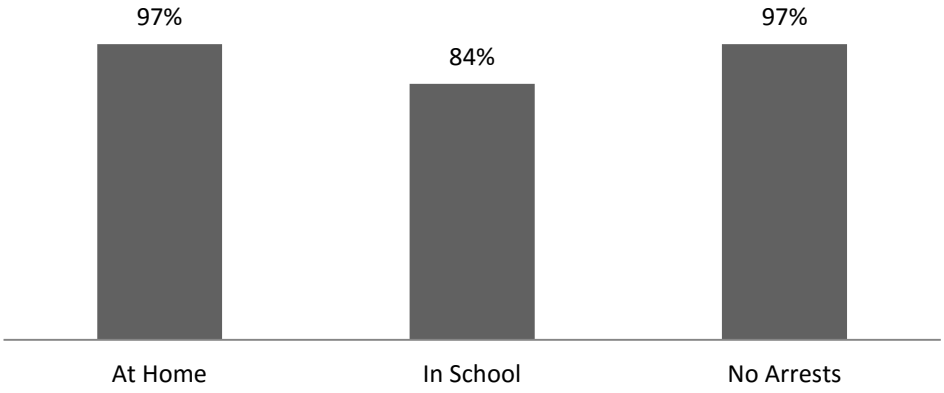



The 31 cases with an opportunity for a full course of treatment through Cambridgeshire's MST-PSB service have been sorted by the type of behaviour leading to the referral. As seen above:

- Intrafamilial abuse: a young person has sexually assaulted someone living in the home (e.g. a sibling) and as a result the referring professional assesses that the young offender and the victim must live separately. The MST-PSB team then aims to either keep the family together or reunify the family.
- Convictions: this section pertains to young people that have been convicted of a sex offence, typically rape.
- Aged <10: these are young people who have been accused of a sex offence but are under the age of 10. It is assessed by the MST-PSB supervisor that these young people are likely to reoffend without treatment.
- Serious accusations: this section represents young people who have been accused of a serious sexual offence such as rape, but are not being prosecuted due to lack of evidence.
- Other: In this category there is a young person who sexually assaulted his mother but was never charged, a young person who engaged in sexual touching of others in school but police were not involved, one young person who accessed child pornography and the police investigation is ongoing, and one young person at risk of family breakdown due to atypical masturbation habits within the home.

# Ultimate Outcomes





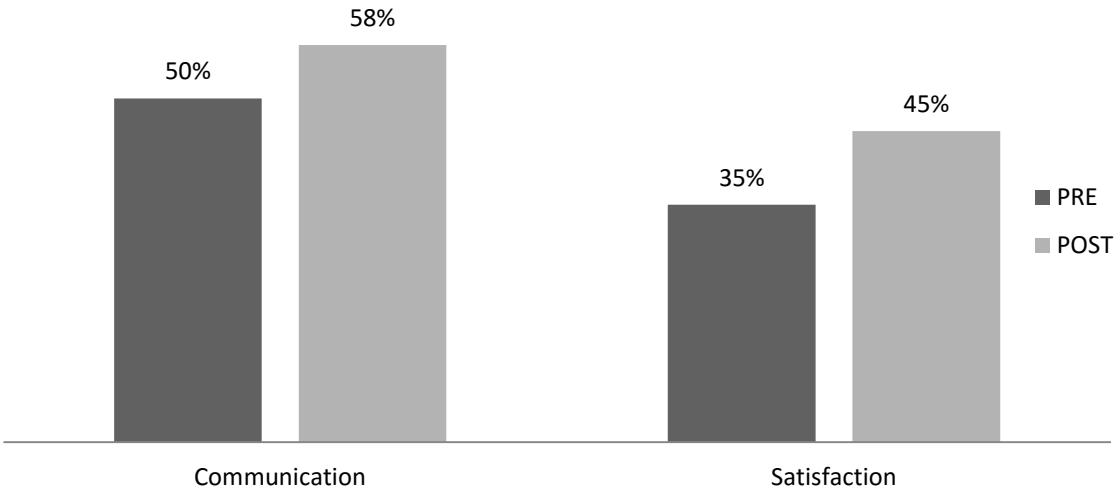

This represents the ultimate outcomes of the PSB service at the time of case closure.

**12 month follow up**: 21 of the 31 families were discharged at least 12 months prior to this report, and have follow-up data available. Of those 21 families, 19 of them still have the young person living at home. Of those 19 families, 18 of them have no further reports of problem sexual behaviour.

# MST PSB Mental Health Outcomes

The MST PSB service uses the Family Adaptability and Cohesion Evaluation Scale (FACES) developed by David Olson and colleagues to measure family functioning. It is a well-established tool for the measurement of family functioning and has been validated worldwide.

- Communication is the level of skill used in positive communication in the family
- Satisfaction is the level of contentment of the family's current mode of interaction



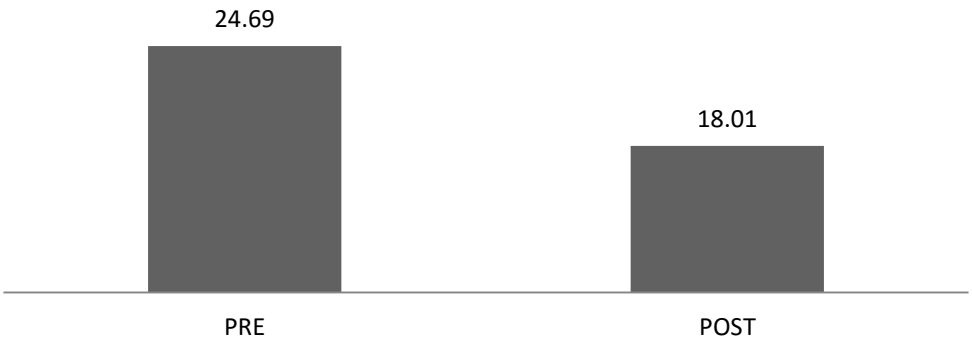

Families improved in all measured areas from the start to the end of MST PSB treatment. These differences are significant.

# MST PSB Mental Health Data Continued

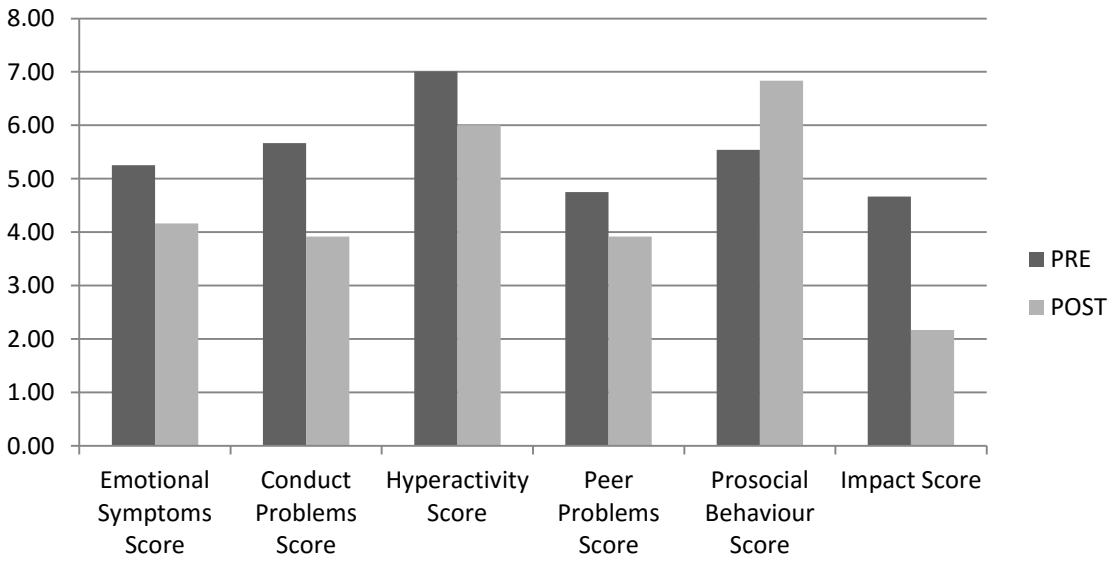


The same strengths and difficulties questionnaire used for the MST standard data above was applied to MST PSB, with the following results:

## Total Difficulties




Results from 23 Cambridgeshire parents indicate that the difference in overall difficulties from the beginning to the end of treatment is significant. It represents a 36% improvement toward normative values for the UK.

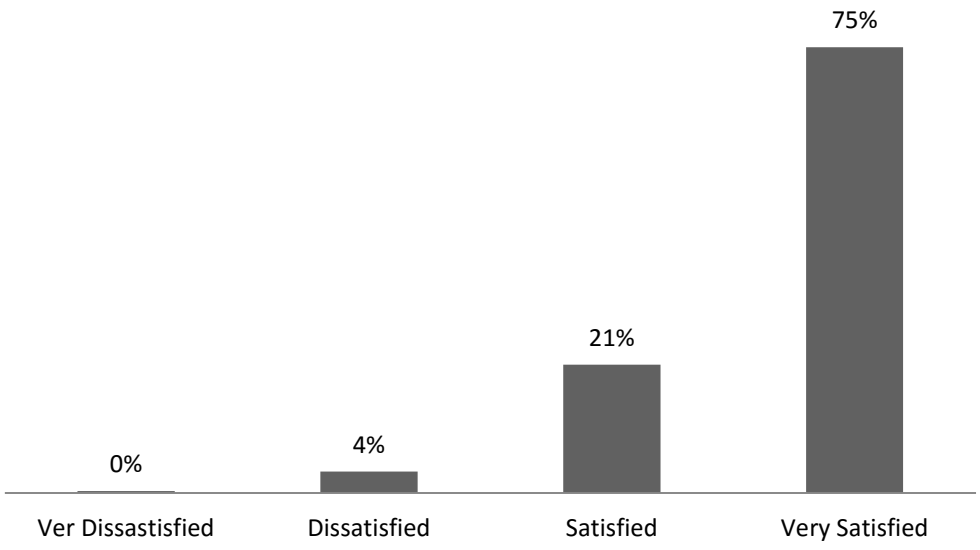


# MST PSB Client Satisfaction



High levels of client satisfaction with a service increase the likelihood of families continuing to practice the strategies and habits developed through therapy.

A client satisfaction questionnaire was administered to all 29 families in the 2013-14 financial year. The following data is based on 33 parental questionnaire responses and 22 child questionnaire responses.




*"I think that they helped me a lot and now I've spoken to someone it's helped me because before I was really worried and scared about the consequences. They helped me more than what I thought. They have also helped me behave in school."*

*-Written by a young person in MST-PSB*

*"Thanks to the hard work of everyone on the MST team, [my child] has a better understanding of keeping himself safe and how things can get said, twisted. I now believe [my child] has a bright future."*

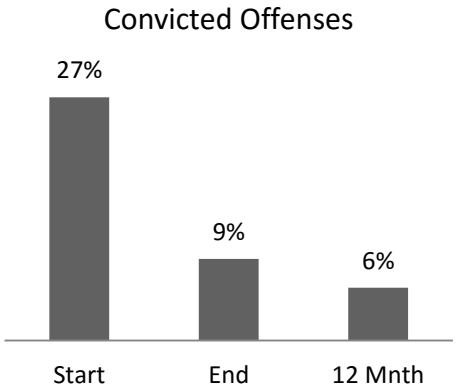
"It's been a pleasure to have a very good / brilliant therapist on hand to help when we have needed him most."

*"Would just like to say how grateful I am for all the work MST has done for my family to make us whole again."*

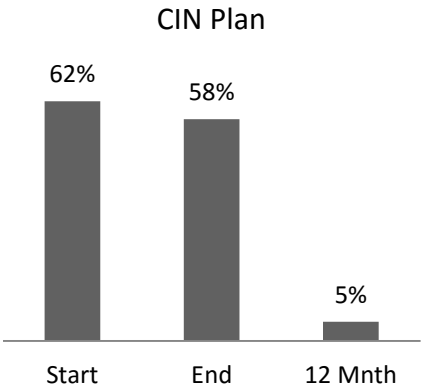
# MST-PSB Sustainability



- An essential factor of the success of the MST-PSB service is the cessation of problem sexual behaviour. The MST-PSB service provides an assessment and safety plan at the start of treatment to ensure that the chance of problem sexual behaviour occurring is as low as possible. Following the safety plan, the family receives treatment to ensure that the factors driving problem sexual behaviour are mitigated, and that the family is able to sustain this change long after discharge.




- The MST-PSB service has tracked incidents of offending prior to commencing treatment and compared that to offending data 6, 12 and 18 months after case discharge. These results are indicated to the right, and represent the percentage of young people arrested for a sex offence.




- Of the cases beginning treatment (n=37), 27% of them had a convicted offense prior to MST. In a 12 month follow up study (n=17), one young person had been convicted for an offense committed after MST closure.

- Confidence in the cessation of problem sexual behaviour is further indicated by the percentage of young people on a CIN plan 12 months following discharge.

- In the current climate a reduction in looked after children is paramount. There is the potential for a looked after child to be referred into MST-PSB with the aim to return them home. The young person may have entered care for safety reasons (i.e. to protect a potential victim) or because the family cannot cope with the problem sexual behaviour.

- Two cases were LAC at the beginning of MST PSB; one (A) was already living within the family ecology (with grandparents as a formal arrangement) and the other (B) was returned home during MST PSB involvement. At the end of MST PSB involvement, both cases remained living in the family ecology (one remained LAC, living with grandparents). Two further cases (C and D) had previously been LAC in the year prior to MST PSB referral, but were living within the family ecology at case opening. At case closure, one further case (E) became LAC during MST PSB involvement (as a result of neglect within the family home). At 12 month follow up of 20 cases, two cases were LAC (C and E).

# MST PSB Case Example



Tom, aged 13, was convicted of three charges of rape against his younger sister, Rose, and was subject to a referral order with a requirement to engage in MST PSB. He was living with his maternal grandparents, and had had no contact with Rose, who remained living with her mother, since the initial disclosures were made. School staff were also concerned about Tom sending sexually explicit texts to his peers, and inviting them to his house.

The professional system, including education, youth offending and social care, was highly concerned about the risks that Tom might pose. The MST PSB therapist initially developed a robust safety plan with Tom's family and school, to ensure the safety of the community. Regular professional meetings were also held, which provided a useful way to contain professional anxieties, and to review the safety plan. Rose's own therapist attended these meetings, allowing the opportunity for the views of the victim to always be kept in mind.

The MST PSB therapist engaged with Tom's mother, father and grandparents, which spanned three households. Although Tom's mother and grandmother were highly motivated to support Tom and engage in the therapy, his father and grandfather were more reluctant, and found it hardest to contemplate what had occurred within their family. The therapist worked alongside social care throughout, to keep father and grandfather informed of the intervention and to ensure they were aligned with the safety plan.

The therapist initially supported mother in taking the lead in some conversations with Tom, known as clarification, which entailed exploring in detail episodes of sexually harmful behaviour. Whilst these conversations were emotive and challenging for all, they allowed a better understanding of the factors which led to Tom engaging in such behaviours, and provided the beginning steps of him taking responsibility for what had happened. This was the scaffolding that eventually led to Tom writing an apology letter to his sister, and to subsequently, with the support of Rose's therapist, meeting with his sister for the first time.

A range of interventions targeted the drivers to Tom engaging in sexually harmful behaviour. The interventions included developing an understanding of the impact of pornography and how this leads to myths about sexual relationships, as well as education around consent and the law. Grandfather felt more able to join in this stage of the work, and of his own accord had some very useful conversations with Tom, for instance, around dating girls, and around appropriate masturbation. Over time it became evident that Tom held some unhelpful attitudes towards women, which in part stemmed from him witnessing domestic violence in his own parents' relationships; the therapist was able to gain alignment with Tom's father, helping him to recognise that these unhelpful attitudes continued to put Tom at risk of further offences. Father was able to reflect on the impact of his own behaviour on Tom, and to talk with Tom about how he would want Tom to treat women.

At the end of the intervention, Tom remained living with his grandparents, and was having monthly contact with his sister, supervised by his parents. At a review nine months later, Tom had moved to live with his father, there had been no further concerns about sexually harmful behaviour, and Tom and Rose continued to enjoy monthly contact with each other.

# Costs and Savings



The actual cost of a single MST case varies per year depending on staff turnover and changes to staff salary. The average cost for an MST standard case is approximately £12,000, and the average cost for an MST PSB case is approximately £26,000.

Savings is calculated using the following method:

(cost of placement) – (cost of MST) = (potential savings)

(potential savings) * (# of successful cases) * (chance of placement without service) = total

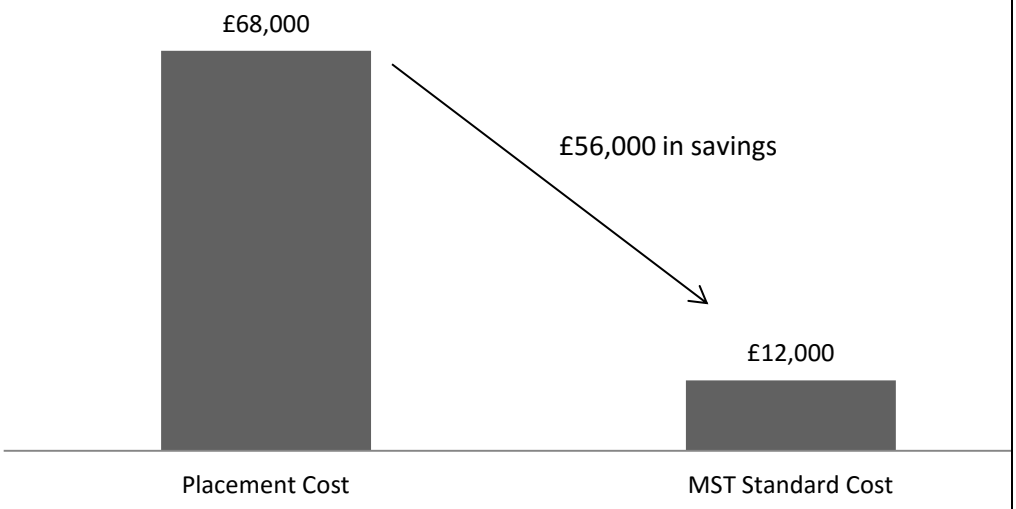
# Likelihood of placement & Placement Cost

**MST Standard:** The likelihood of placement for a young person without MST treatment depends on multiple factors which can be summed up as the effectiveness of treatment as usual without MST. Reports into the chance of placement of a young person without MST compare outcomes for families that received MST to those for similar families that received treatment as usual. These conclude a chance of being looked after without MST has shown to vary from 33% (i.e. Leicester report) to 70% (i.e. Essex report). This report uses an average of the range (i.e. 52%). The average cost of placements (calculated by the CIPFA) for this population is £1,074 per week. A 2011 report from the MST team indicated that if a young person was suitable for MST but did not access due to either service capacity or family refusal, the average placement duration was 443 days.

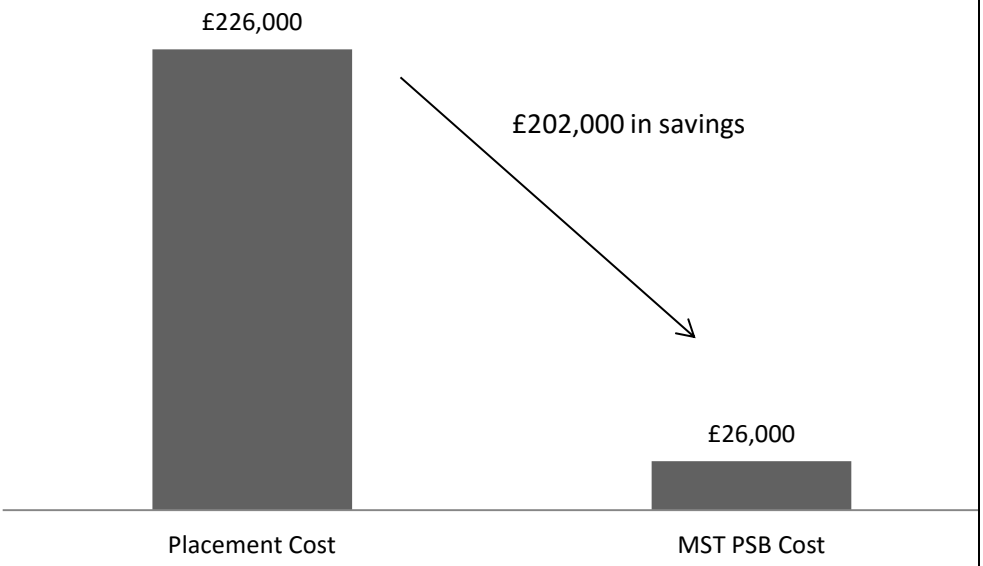
**MST PSB:** In fulfilling a duty of care for this population professionals often conclude that there are no options other than accommodation as evidenced by referral forms. Of the 9 cases of convictions, 4 of them had a high probability of custody without the option of MST-PSB. In each of these cases the youth offending service recommended MST-PSB as the only alternative to custody. Of the remaining cases there were 6 cases of intrafamilial abuse in which a young person was already living outside of the home at the time of referral or MST-PSB was the only proposed option to immanent removal; 3 further cases were care leavers in which there was a high probability of repeated family breakdown without MST-PSB involvement. These 13 cases represent 42% of the total number with an opportunity for a full course of treatment. The typical placement cost for this population (e.g. Castlecare @ the Warren) is £4,338 per week. A placement duration of one year is used for this report.

# Savings of MST Standard






# Savings of MST PSB




**MST Standard:** the average placement duration of 443 days for children in this population is 63.28 weeks. With an average cost of placements of £1,074 per week, the average cost per placement is £67,969. The cost of MST standard per case is £12,000, for £55,969 in potential savings per case. Since June 2008 144 families have completed MST *and* sustained the changes for at least 12 months. If 52% of those cases would have resulted in a child in care, that is 75 instances of avoiding the average cost of a placement.

£55,969 * 75 = £4,181,800

**MST PSB**: the average placement duration used here is 52 weeks (i.e. one year), though it is likely that placements are lengthier for most children in this population. The Warren is a specialist care home for children exhibiting problem sexual behaviours, and is the most likely placement for a young person in PSB due to the need to supervise their activity and provide access to therapy. The cost of the Warren is £4,338 per week. That cost for one year is £225,606. The cost of MST PSB is £26,000 per case. Since June 2012 there have been 30 successful MST PSB cases, 42% of which would have entered care without treatment.

£199,606 * 13 = £2,515,037

# Summary and Conclusion



This evaluation report is based on several audit reports since 2008 that are available upon request. It shows that MST is obtaining sustained results with young people remaining home and in education with a measured reduction in offending at end of treatment. These results are further established by 12 month follow up.

A cost effectiveness study shows that MST in Cambridgeshire is making significant cost savings as it keeps young people at the edge of care out of care and custody. These savings projections are predicated on the percentage of young people suitable for MST that were not referred in or unable to be accepted due to service capacity. Rarely is an edge of care service able to provide a probability of a young person being accommodated without the service being utilized.

Further substantiating these savings projections is the 12 month follow-up data indicating that the results at the time of MST case closure are sustained in 90% of cases in MST standard and 95% of cases in MST-PSB.