

## Child Maltreatment 3



## Interventions to prevent child maltreatment and associated impairment

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Although a broad range of programmes for prevention of child maltreatment exist, the effectiveness of most of the programmes is unknown. Two specific home-visiting programmes—the Nurse–Family Partnership (best evidence) and Early Start—have been shown to prevent child maltreatment and associated outcomes such as injuries. One population-level parenting programme has shown benefits, but requires further assessment and replication. Additional in-hospital and clinic strategies show promise in preventing physical abuse and neglect. However, whether school-based educational programmes prevent child sexual abuse is unknown, and there are currently no known approaches to prevent emotional abuse or exposure to intimate-partner violence. A specific parent-training programme has shown benefits in preventing recurrence of physical abuse; no intervention has yet been shown to be effective in preventing recurrence of neglect. A few interventions for neglected children and mother–child therapy for families with intimate-partner violence show promise in improving behavioural outcomes. Cognitive-behavioural therapy for sexually abused children with symptoms of post-traumatic stress shows the best evidence for reduction in mental-health conditions. For maltreated children, foster care placement can lead to benefits compared with young people who remain at home or those who reunify from foster care; enhanced foster care shows benefits for children. Future research should ensure that interventions are assessed in controlled trials, using actual outcomes of maltreatment and associated health measures.

## Introduction

The first paper of this Series summarised the nature and consequences of child maltreatment.<sup>1</sup> We review here what is known about approaches to reduce the five major subtypes of child maltreatment: physical abuse, sexual abuse, psychological abuse, neglect, and exposure to intimate-partner violence, and the impairment associated with these experiences. The framework we follow (figure 1) addresses interventions aimed at prevention of maltreatment before it occurs, including both universal and targeted approaches (panel 1), and prevention of recurrence and adverse outcomes associated with maltreatment (panel 2). Efforts to reduce child maltreatment by improving the social, economic, and political environments in which children and families live is beyond the scope of this article; these issues are discussed in the fourth paper in this Series.<sup>2</sup>

We highlight the relevant processes for designing and evaluating interventions according to the public-health model and as summarised in the 2006 WHO report<sup>3</sup> on preventing child maltreatment: define and measure the problem; identify causal, risk, and protective factors; develop and determine effectiveness of interventions; and implement interventions with ongoing monitoring of outcomes. Too often, interventions are implemented before undergoing adequate evaluation—the term “promising” is sometimes misinterpreted as sufficient evidence for widespread dissemination.

When available, we have used good quality syntheses of the literature on maltreatment prevention, ideally a systematic review;<sup>4</sup> when randomised controlled trials (RCTs) exist, we have not included information from cohort or case–control studies. We have provided more

## Key messages

- Home-visiting programmes are not uniformly effective in reducing child physical abuse, neglect, and outcomes such as injuries; those that have shown benefits are the Nurse–Family Partnership (best evidence) and Early Start
- The Triple P—Positive Parenting Program has shown positive effects on maltreatment and associated outcomes, but further assessment and replication are needed
- Hospital-based educational programmes to prevent abusive head trauma and enhanced paediatric care for families of children at risk of physical abuse and neglect show promise but require further assessment
- School-based educational programmes improve children’s knowledge and protective behaviours; whether they prevent sexual abuse is unknown
- Parent–child interaction therapy has shown benefits in preventing recurrence of child physical abuse; no interventions have been shown effective in preventing recidivism of neglect
- Preventing impairment associated with child maltreatment requires a thorough assessment of the child and family. Cognitive-behavioural therapy shows benefits for sexually abused children with post-traumatic stress symptoms. There is some evidence for child-focused therapy for neglected children and for mother–child therapy in families with intimate-partner violence
- For maltreated children, foster care placement can lead to benefits compared with young people who remain at home or those who reunify from foster care, and enhanced foster care leads to better mental-health outcomes for children than does traditional foster care

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This is the third in a Series of four papers about child maltreatment

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### Search strategy and selection criteria

We aimed to identify, evaluate, and summarise recent, high-quality research evidence for preventing child maltreatment and interventions to reduce the adverse effects of such exposures. Although we did not do a formal systematic review, our search strategies were designed to identify recent systematic reviews, meta-analyses, and randomised controlled trials, where available, with evidence from non-randomised designs included only if no higher level of evidence was available. We were guided by the US Preventive Services Task Force<sup>4</sup> in assessment of the internal validity of the various study methods. The databases MEDLINE, EMBASE, CINAHL, PsycINFO, the OVID Evidence-Based Medicine Reviews database (Cochrane DSR, ACP Journal Club, DARE, CCTR, CMR, HTA, and NHSEED), and the Campbell Collaboration website were searched for citations up to April, 2008, to identify key studies and evidence syntheses. Database-specific terms used to identify the concepts of child maltreatment (child abuse, child neglect, child sexual abuse, exposure to intimate-partner violence, foster care, shaken baby syndrome, etc) were identified and paired with the controlled vocabulary terms appropriate for prevention and intervention. Database, hand, and internet searches were done up to October, 2008, on key authors and programmes in the field to locate emerging information. Full search details of all search strategies and results are available from the authors.

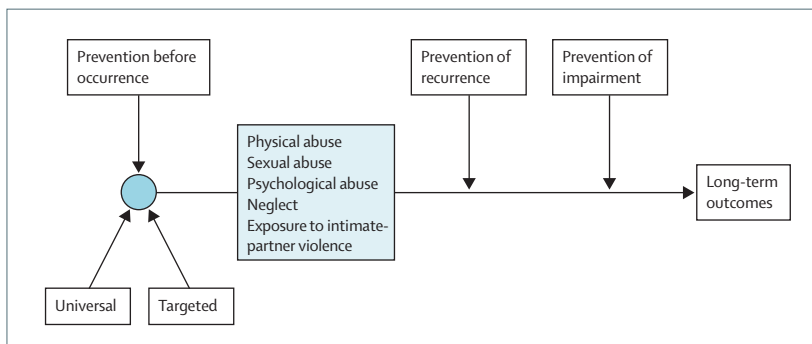


Figure 1: Framework for prevention of child maltreatment and associated impairment

details of studies showing positive effects with higher levels of evidence, or in areas where debate exists about the effectiveness of an intervention.

Selection of outcomes is a crucial methodological issue. Official reports are thought to be the most objective assessment of outcome, but represent only the tip of the iceberg.<sup>5</sup> Conversely, relying solely on caregiver self-reports of behaviour is problematic because of biases due to social desirability and stigma. There is evidence for the reliability and validity of children's self-reports of victimisation,<sup>6</sup> but much maltreatment is experienced by children too young for self-report. Where possible we have reported objective measures of child and caregiver behaviours and experiences of maltreatment, and have not included studies that rely solely on parental self-reports of abusive behaviour.

### Prevention before occurrence of maltreatment Physical abuse and neglect

Reduction of physical abuse and neglect is a combined focus in many prevention programmes. We therefore address them together, although they are distinct subtypes of maltreatment, and can require different

approaches to prevention. In a systematic overview, Barlow and colleagues<sup>7</sup> identified eight systematic reviews that examined a broad array of programmes aimed at prevention of child physical abuse and neglect. Programme quality varied: for example, less rigorous reviews were not based on systematic searches or there was inappropriate combination of results across all interventions or outcomes. The authors concluded that there is insufficient evidence of the effectiveness of services in improving objective measures of abuse and neglect, and evidence that some types of intervention (eg, social support) are ineffective. Home visitation and multicomponent interventions were identified as being the only potentially effective interventions, although the evidence across reviews was not uniform. The most rigorous study of one home visitation programme showed positive results<sup>8</sup> and has since undergone a much longer follow-up and two replications.

### Home visitation

Home-visiting programmes vary widely in their models of service delivery, content, and staffing.<sup>9</sup> Although universal home visiting for very young children and their parents has existed for decades in many European countries,<sup>9</sup> much of the research has been done in the USA on targeted programmes. This section will discuss the evidence for prevention of physical abuse and neglect and associated outcomes such as child hospitalisations, emergency department visits, and injuries.

Despite the promotion of a broad range of early childhood home-visiting programmes,<sup>10,11</sup> most of these have not been shown to reduce physical abuse and neglect when assessed using RCTs.<sup>12</sup> Some systematic reviews, especially those including meta-analyses, have concluded that early childhood home visitation is effective in preventing child abuse and neglect<sup>13,14</sup> without taking into account the variability across programmes.<sup>15</sup> Such general statements obscure important differences in design and methods, including outcomes, across studies.<sup>16</sup> Two programmes, the Nurse–Family Partnership developed in the USA and the Early Start programme in New Zealand have, however, shown significant benefits.

### Nurse–Family Partnership

The Nurse–Family Partnership has undergone the most rigorous and extensive evaluation of child maltreatment outcomes.<sup>17</sup> It has been tested, with high rates of retention, in three RCTs across a range of samples and US regions: Elmira, NY (n=400, semi-rural; 89% white sample; 81% follow-up at 15 years);<sup>8,18,19</sup> Memphis, TN (n=1139, urban, 92% black sample; 75% follow-up at 9 years);<sup>20,21</sup> and Denver, CO (n=735, urban, 45% Hispanic sample; 86% follow-up at 4 years).<sup>22,23</sup>

Home visitation is provided by nurses to low-income first-time mothers beginning prenatally and during infancy (panel 3). The first and second Nurse–Family Partnership trials included an additional treatment

condition of prenatal visitation without the intensive postpartum component. The phrase “nurse-visited” refers here to the group receiving prenatal and intensive postnatal intervention, since it showed the most positive outcomes.

During the second postpartum year, the Elmira trial showed a 32% reduction in emergency department visits overall ( $p < 0.01$ ), and a 56% fall in emergency department visits for injuries and ingestions ( $p < 0.05$ ), among nurse-visited children compared with the control group. A subgroup of nurse-visited women at highest risk (single, low-income, teen mothers) had 80% fewer incidents of verified child abuse and neglect, although this was not significant ( $p = 0.07$ ).<sup>8</sup> This trial has been criticised because of the emphasis on findings from subgroup analyses. However, by the 15-year follow-up,<sup>18</sup> child abuse and neglect were identified less often in the whole sample of nurse-visited women than in women in the control group (0.29 vs 0.54 verified reports,  $p < 0.001$ ). This positive effect was not present in homes where moderate-to-high levels of intimate-partner violence were reported.<sup>24</sup>

The rate of verified child abuse and neglect in the sample of children in Memphis (3–4%) was too low to serve as a feasible outcome for the second trial;<sup>25</sup> the study therefore concentrated on health-care encounters for injuries and ingestions. At 2 years of age, children visited by a nurse had 23% fewer health-care encounters for injuries and ingestions compared with the control-group children ( $p < 0.05$ ); they were also hospitalised with injuries or ingestions for 79% fewer days ( $p < 0.0003$ ).<sup>20</sup> By age 9 years,<sup>21</sup> children in the control group were 4.5 times more likely to have died than were the nurse-visited children, although this difference was not significant ( $p = 0.08$ ).

The Denver trial<sup>22</sup> differed in that it included a condition to establish if lack of effects in earlier studies with paraprofessionals (home visitor without professional training, often selected based on personal attributes) could be attributed to professional background and training or the programme models. Because of the complexity of the health-care delivery system, the use of child or maternal medical records was not possible, and rates of verified maltreatment reports were too low to serve as an outcome. In view of these limitations, the investigators introduced new measures of parental caregiving. Effects among the nurse-visited children and mothers were consistent with those achieved in the earlier trials, whereas the effects were roughly half as large among those visited by paraprofessionals.<sup>22,25</sup> On most outcomes, the children of mothers visited by a paraprofessional did not differ significantly from those in the control group.

Studies are underway in the Netherlands and the UK, and a feasibility evaluation is in progress in Canada to establish whether the findings can be replicated in other countries.

### Panel 1: Interventions to prevent exposure to child maltreatment, by type of abuse

#### Physical abuse and neglect

##### Home visitation

- Home-visiting programmes are not uniformly effective in reducing child physical abuse and neglect; any home-visiting programme should not be assumed to reduce child abuse and neglect (systematic reviews with RCTs)
- Effective programmes include:
  - Nurse–Family Partnership, which reduced child physical abuse and neglect, as measured by official child protection reports, and associated outcomes such as injuries in children of first-time, disadvantaged mothers (RCTs)
  - Early Start programme, which reduced associated outcomes such as injuries and hospital admissions for child abuse and neglect but rates of child protection reports did not differ between the intervention and control groups (RCT); replication is recommended
- Paraprofessional home-visiting interventions (including the Hawaii Healthy Start Program and Healthy Families America) have not been shown effective in reducing child protection reports; recent RCTs showed conflicting evidence with regard to maternal self-reported child abuse (RCTs; webappendix)

##### Parent-training programmes

- Triple P—Positive Parenting Programme showed positive effects on substantiated child maltreatment, out-of-home placements, and reports of injuries, based on a single study that used an ecological design with a small sample size (RCT); further assessment and replication are recommended

##### Abusive head trauma education programmes

- Positive effects from one study suggest that hospital-based educational programmes could reduce abusive head injuries (shaken impact syndrome); (cohort study with historical control; replications underway)

##### Enhanced paediatric care for families at risk

- Positive but not statistically significant effects suggest that enhancing physicians’ abilities to identify and help families decrease risk factors for child maltreatment might be effective but currently insufficient evidence (RCT)

#### Sexual abuse

##### Education

- Unknown if educational programmes reduce occurrence of child sexual abuse; some evidence that they improve children’s knowledge and protective behaviours but could have some adverse effects (systematic reviews with RCTs)

#### Psychological abuse

##### Therapeutic counselling

- Attachment-based interventions might improve insensitive parenting and infant attachment insecurity, but there is no direct evidence that these interventions prevent psychological abuse (RCTs)

#### Exposure to intimate-partner violence

##### Intimate-partner violence prevention

- No evidence of any existing interventions that prevent intimate-partner violence against women, and by extension, children (systematic review)

RCT=randomised controlled trial.

#### Early Start programme

The Early Start programme is an intensive home-visiting programme targeted to families facing stress and difficulties (panel 4).<sup>26</sup> In an RCT ( $n=443$ ) comparing families receiving Early Start with control families not receiving the

**Panel 2: Interventions to prevent re-exposure to and adverse outcomes of child maltreatment, by type of abuse**

**Physical abuse and neglect**

*Parent-training programmes*

- Limited evidence to support the use of parent-training programmes to reduce the recurrence of physical abuse (systematic review of RCTs)
- Parent-child interaction therapy (PCIT) reduced recurrence of child-protection services reports of physical abuse but not neglect (RCT)
- Some programmes (eg, PCIT and Webster-Stratton Incredible Years Program) might be effective in improving some outcomes associated with physically abusive parenting (RCT)

*Home-visitation/in-home programmes*

- Insufficient evidence to conclude that multifaceted in-home programmes reduce recurrence of physical abuse and neglect (RCTs)
- One programme of intensive nurse home visitation was not effective in preventing recurrence of physical abuse or neglect (RCT)

*Neglect-specific programmes*

- Insufficient evidence to conclude that neglect-specific interventions reduce recurrence of neglect
- Some evidence from small studies that resilient-peer training, imaginative play training, therapeutic day training, and multisystemic therapy improve child outcomes (systematic review of controlled studies)

**Sexual abuse**

*Therapeutic counselling for children and families*

- Evidence that cognitive-behavioural therapy can improve specific mental-health outcomes for sexually abused children with post-traumatic stress symptoms, including post-traumatic stress disorder, anxiety, depression (systematic reviews of RCTs)
- Conflicting evidence for cognitive-behavioural therapy in reducing child behavioural problems (systematic reviews of RCTs)

*Programmes for child molesters (webappendix)*

- Surgical castration and chemical treatments might reduce recidivism, but sample bias is a concern (systematic review of non-randomised and randomised studies)
- Some evidence of efficacy for psychological treatments but further trials needed before strong conclusions can be drawn (systematic review of randomised studies)

**Emotional abuse**

*Therapeutic counselling for parents/families*

- Limited evidence of the effectiveness of interventions specifically designed for parents or caregivers who emotionally abuse their children
- Group-based cognitive-behavioural therapy might be effective with some parents (RCT)

**Exposure to intimate-partner violence**

*Programmes to prevent recurrence of intimate-partner violence*

- Evidence for reducing children's exposure to intimate partner violence by reducing violence recurrence against women is limited; one post-shelter advocacy intervention showed improvement in women's life quality and initial, but not sustained, reductions in intimate-partner violence (RCT)
- Restraining orders against abusive partners might prevent recurrent abuse (prospective cohort), but batterer treatment programme evaluations have mixed, and generally negative, results (RCTs)

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service,<sup>26,27</sup> 88% (391) of those families enrolled were available for outcome assessment at 36 months. At age 3 years, children in Early Start had significantly lower attendance rates at hospital for childhood injuries than controls (17.5% vs 26.3%;  $p < 0.05$ ) and fewer admissions to hospital for severe abuse and neglect. Early Start children had about a third of the rate of parent-reported physical abuse ( $p < 0.01$ ). However, rates of referral to official agencies for care and protection concerns were similar for Early Start children and controls. This apparent lack of difference was attributed to the fact that Early Start clients were under closer surveillance and hence more likely to be referred to official agencies than controls.

*Paraprofessional models*

Most of the RCTs that assessed the effectiveness of home-visitation programmes for preventing physical abuse and neglect have focused on models with service delivery by paraprofessionals,<sup>28</sup> specifically the Hawaii Healthy Start Program and Healthy Families America (webappendix). Overall, results have been disappointing, and have not matched the benefits of the Nurse-Family Partnership or Early Start programmes.

*Parent-training programmes*

Although several parent-training programmes are being used with the stated goal of preventing child maltreatment, no clinical trials were identified that used actual child maltreatment outcomes. One RCT has assessed the effect of a population-based preventive intervention on child abuse and neglect.<sup>29</sup> This study involved the dissemination of Triple P professional training to the existing workforce alongside universal media and communication strategies, across 18 randomly assigned counties in one US southeastern state (panel 5). Compared with the services-as-usual control condition, there were positive effects in the Triple P—Positive Parenting Program counties for rates of substantiated cases of child maltreatment ( $d = 1.09$ ;  $p < 0.03$ ), child out-of-home placements ( $d = 1.22$ ;  $p < 0.01$ ), and child maltreatment injuries ( $d = 1.14$ ;  $p < 0.02$ ;  $p$  values are for  $t$  tests). These effect sizes describe between-cluster rather than individual differences. For the child maltreatment outcome, there was a post-intervention increase in both groups. Of note, the authors did not report standard deviations for outcomes or for the calculation of Cohen's  $d$ . A one-sided  $t$  test was used in comparing pre-post difference scores but this was not stated in the manuscript. Overall, the findings are promising, but some details of the analysis are unclear. Additional clinical trials of this intervention using child maltreatment outcomes are warranted, as well as population-based replications in other communities.

*Abusive head trauma education programmes*

The most widely adopted prevention strategy in US hospitals aims to prevent abusive head trauma (shaken

impact syndrome). Dias and colleagues<sup>30</sup> assessed an educational intervention (leaflet, video, posters) about the dangers of infant shaking and ways to handle persistent crying provided to parents in 16 hospitals in New York State. The incidence of abusive head trauma was substantially reduced during the 66 months after introduction of the programme (22.2 cases per 100 000 livebirths) compared with the 66 months before the study (41.5 cases per 100 000 livebirths). Currently, a statewide replication of this study (Dias M, personal communication) and assessment of other postpartum educational programmes to prevent abusive head trauma are underway in the USA (Leventhal J, personal communication).

#### *Enhanced paediatric care for families at risk*

Dubowitz and colleagues<sup>31</sup> examined the efficacy of the Safe Environment for Every Kid (SEEK) model of paediatric primary care in a continuity clinic in Baltimore, MD, USA. Clinics were randomised into routine care provided by the paediatric residents (250 families) or model care (308 families), in which residents received special training, systematically identified family problems, and had a social worker available. Results showed benefits in the model care group compared with the routine care group, including apparently fewer child-protection services reports (13.3% vs 19.2%;  $p=0.06$ ), fewer instances of medical neglect ( $p=0.10$ ), and less harsh punishment reported by parents ( $p=0.08$ ). Although this study had modest effects on reports to child-protection services, the results suggest that enhancing physicians' abilities to help families decrease risk factors for child maltreatment could be effective.

#### **Sexual abuse**

The main approach to preventing sexual abuse has been education programmes provided for children.<sup>32,33</sup> Systematic reviews undertaken since 1994 have examined an increasing number of RCTs of universal school-based programmes,<sup>32-35</sup> which have been widely disseminated in the USA and Canada. The most recent systematic review<sup>32</sup> assessed data from 15 trials that examined the effectiveness of curricula for children from kindergarten through high school, mainly in the USA. The programmes included combinations of film and video, discussion, and role play; control groups generally consisted of children on the waiting list or those who received the standard curriculum. Most of the trials reported significant improvement in measures of knowledge; a smaller proportion found significant benefits in protective behaviours under simulated conditions. Disclosures of past or current sexual abuse were measured in only three studies; methodological weaknesses precluded determining whether such disclosures were associated with the intervention. Negative outcomes such as increased anxiety were reported in three studies. As

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#### *Psychological treatment for parents and children*

- Some evidence for mother-child therapy in families where children are exposed to intimate-partner violence in reducing children's internalising and externalising behaviour problems and symptoms (RCTs)

#### **Global interventions**

##### *Foster care*

- Placement in foster care and not reunifying with biological parents can lead to benefits for maltreated children (observational studies)
- Enhanced foster care can lead to better mental-health outcomes for children than traditional foster care can (observational studies)

##### *Family preservation programmes*

- No evidence that these programmes are effective in reducing maltreatment impairment or recurrence (systematic reviews)

##### *Kinship care*

- Conflicting evidence about kinship care compared with traditional foster care (observational studies)

#### **Interventions for youth in foster care (webappendix)**

##### *Multidimensional treatment foster care*

- Evidence for reduced behaviour problems and fewer failed placements (RCTs)

RCT=randomised controlled trial.

noted by the review authors, many of the studies suffered from major methodological weaknesses, including lack of blinding and analyses that failed to consider cluster randomisation. Follow-up was generally short—typically 3 months post-intervention. Consistent with previous systematic reviews,<sup>33-35</sup> the authors concluded that whether increased knowledge and use of protective behaviours translate into reduced sexual abuse is unknown; therefore, whether education programmes aimed at children actually prevent sexual abuse is unknown.<sup>32</sup>

See Online for webappendix

#### **Psychological abuse**

Despite increasing awareness about its importance in children's lives, psychological abuse is poorly understood and inadequately researched.<sup>36</sup> Evaluation of the effectiveness of interventions in the secondary prevention of early indicators of psychological abuse often focuses on maternal insensitivity to infant cues.<sup>37</sup> For example, one meta-analysis assessing the effectiveness of attachment-based interventions, ranging from home-visiting programmes to parent-infant psychotherapy,<sup>38</sup> showed improvements in insensitive parenting ( $d=0.33$ ) and in infant attachment insecurity ( $d=0.20$ ). Increased effectiveness was associated with the use of several sessions and a clear behavioural focus. Maternal insensitivity is an important aspect of emotionally harmful parent-child relations, particularly attachment disorders, and brief, focused interventions of this nature might have a role in their prevention (panel 6).<sup>39</sup>

### Panel 3: Interventions for preventing child physical abuse and neglect: Nurse-Family Partnership<sup>8,18-25</sup>

#### Programme model

- Home-visiting programme based on theories of human ecology, self-efficacy, and human attachment
- Nurses develop a trusting relationship with the mother and other family members to promote sensitive, empathic care of their children; assist mothers to review their own childrearing histories and decide how they want to parent their children

#### Programme goals

- Improving pregnancy outcomes by assisting women to improve their prenatal health-related behaviours
- Improving children's postnatal health and development by helping parents provide responsible and competent child care
- Improving parents' economic self-sufficiency by assisting them to plan for their future, including subsequent pregnancies and employment

#### Programme description

- Home visiting by nurses with bachelor's degree in nursing (RN in the Elmira trial); they underwent 4 weeks of training before the programme
- Women who were pregnant for the first time and of low socioeconomic status were recruited from prenatal clinics before 29 weeks' gestation (before 25 weeks in the Elmira trial)
- Nurses follow detailed visit-by-visit guidelines and a standardised protocol of visits
- Frequency of home visits changed with stages of pregnancy and adapted to parents' needs; in the three trials, nurses completed an average of 6.5–9 visits prenatally and 21–26 visits from birth to the child's second birthday; visits lasted around 75–90 min

#### Exposure to intimate-partner violence

The most direct way to prevent children's exposure to intimate-partner violence is through preventing or ending the violence itself, but there are few high quality, empirical studies of interventions.<sup>40</sup> Two systematic reviews highlight the lack of evidence for effective interventions to prevent the initiation of intimate-partner violence,<sup>40,41</sup> and therefore to prevent children's exposure to it.

#### Prevention of recurrence and impairment

This category of intervention is sometimes referred to as treatment, but we prefer to conceptualise it as outlined in the figure, because maltreatment is an exposure, not a symptom or a disorder. The two related but distinct goals of prevention of recurrence and impairment are not necessarily achieved with the same type of intervention. Child-protection services have typically focused on preventing recurrence, whereas prevention of impairment has generally been the purview of the mental-health system.

Prevention of recurrence lends itself to classification by type of maltreatment, since the emphasis of such interventions is on reducing specific abusive or neglectful behaviours of adults, often within the context of parenting. Importantly, a family assessment to identify risk and protective factors that can be altered (eg, substance misuse, mental-health conditions, support systems), and to assess the appropriateness of existing

services should be done to identify approaches to prevent recurrence. We review here those approaches specifically directed at reduction of maltreatment recurrence and associated impairment; the discussion of general interventions, such as substance misuse treatment programmes, is beyond the scope of our article.

Out-of-home care is a broad category of intervention discussed separately, since it is used as an approach to reduce recurrence of all types of maltreatment, based on the principle that the child is removed from the care of an individual who is abusive or neglectful, or who is failing to protect the child from such behaviours in others. It has also been assessed as an approach to prevent impairment.

There has been increasing recognition that the broad range of physical and mental-health conditions associated with maltreatment show little specificity by type of exposure. Furthermore, many children are exposed to multiple types of maltreatment. However, not all children exposed to one or more types of maltreatment experience impairment. For these reasons, an essential aspect of the response to maltreatment is a thorough assessment to establish whether children have symptoms or disorders that would benefit from intervention, and then to ensure they receive the best available interventions for the conditions identified.

One meta-analysis<sup>42</sup> examined the effectiveness of psychological treatments for all categories of maltreatment. The authors concluded that there was an overall positive effect ( $d=0.54$ ), although this was reduced ( $d=0.21$ ) when self-report and parental reports of child outcomes were excluded. We considered the interventions too heterogeneous to draw meaningful conclusions from this meta-analysis. Similarly, three recent systematic reviews assessed the effectiveness of interventions in reducing psychological harm in children and adolescents exposed to trauma;<sup>43-45</sup> their definition of trauma was very broad, and included community violence and natural disasters as well as child maltreatment. Information about interventions for specific types of maltreatment that could be extracted from reviews is discussed below. These studies mainly included samples of sexually abused children or adolescents, with a few focused on physical abuse and intimate-partner violence.

#### Physical abuse and neglect

##### Parent-training programmes

Parent-training programmes have been included in several reviews of interventions for physically abusive parents,<sup>14,46</sup> but only one had focused explicitly on the effectiveness of training programmes for physically abusive and neglectful parents.<sup>17</sup> Seven RCTs were included that had targeted parents with a history of child physical abuse (five studies), physical abuse and neglect (one study), or unspecified abuse (one study); of the seven, three used a control group and four used an alternative treatment group. Only three of the studies examined the effect of parent training on objective

measures of recurrence, including reports by child-protection workers,<sup>48</sup> number of injuries,<sup>49</sup> or official re-reports of physical abuse and neglect.<sup>50</sup> The most recent compared the efficacy of parent-child interaction therapy (PCIT) and PCIT plus individualised enhanced services (EPCIT) with a standard community-group psycho-educational (didactic) programme (n=110; panel 7).<sup>50</sup> At follow-up (median of 850 days), 19% of parents assigned to PCIT had a re-report for physical abuse, compared with 36% of EPCIT parents and 49% of parents in the community group (p=0.02). The only significant predictor of physical abuse re-referral was the PCIT condition (p=0.03). There was no difference in re-reports of neglect.

The second study compared the use of cognitive-behavioural therapy in modifying risk factors associated with child physical abuse with a family therapy programme focused on family interaction (n=38).<sup>49</sup> There were significantly fewer child reports (27% vs 59%; p<0.007) and parental reports (9% vs 53%; p<0.04) of physical discipline or force in the cognitive-behavioural therapy group compared with the family therapy group. The small number of injuries observed precluded statistical comparison.<sup>49</sup>

The third study assessed a group-based parenting programme of child management techniques and problem-solving; however, the small sample size (n=16) precluded conclusions about effectiveness.<sup>48</sup>

Most published studies provided immediate post-intervention assessment only.<sup>47</sup> The review by Barlow and colleagues<sup>47</sup> reported little evidence to support the use of parent-training programmes to reduce the recurrence of physical abuse. The most effective type of programme seems to be PCIT. There is also evidence to suggest that some types of parenting programmes (eg, Webster-Stratton Incredible Years Program<sup>51</sup>) could be effective in improving some outcomes that are associated with physically abusive parenting including, for example, child reports of parental anger.<sup>49</sup>

#### *Home-visitation and in-home programmes*

A Canadian RCT assessed a programme of home visiting by nurses provided to families involved with child-protection services.<sup>52</sup> Families with at least one child who had experienced physical abuse or neglect were randomly assigned to a 2-year programme of nurse home visiting in addition to child-protection services, or standard child-protection services alone. The intervention included family support, referral to other services, and education about parenting, tailored to the needs of the family. Although based on similar principles, it differed substantially in sample, focus, and content from programmes aimed at preventing maltreatment before it occurs. At 3-year follow-up, there was no difference between groups in incidents of physical abuse or neglect; nor was there any reduction in associated outcomes such as injuries. A post-hoc

#### **Panel 4: Interventions for preventing child physical abuse and neglect: Early Start<sup>26,27</sup>**

##### **Programme model**

- Home-visiting service for families based on a social learning-model approach
- Crucial elements include: assessment of family needs and resources; development of a positive partnership between client and family support worker; collaborative problem-solving; and provision of support, advice, and mentoring to mobilise families' strengths and resources

##### **Programme goals**

- Improve child health
- Reduce risk of child abuse
- Improve parenting skills
- Encourage family socioeconomic and material wellbeing
- Encourage stable partnerships

##### **Programme description**

- Home-visiting by nurses or social workers, bachelor's level-prepared; they were given a 5-week training programme
- Nurses referred any families with two or more risk factors on an 11-point screening measure that included parent and family functioning, plus those where nurses had concerns about a client's ability to care for the child
- 1-month period to assess family needs; those that scored above a cutoff point indicating problems in family functioning were offered the full programme
- Services were tailored to meet the needs of the family
- Families were seen on average over 50 times in the first year; services can be provided for up to 5 years; visits last around 60–90 min

subgroup analysis showed that nurse-visited families involved with child-protection services for fewer than 3 months had a significant reduction in physical abuse, but not neglect (p<0.05).

Project SafeCare, an in-home treatment programme for families where physical abuse or neglect has occurred, is based on Project-12-Ways, an earlier, multifaceted, in-home programme streamlined to a 24-week intervention with three main components: child health care, home safety and injury prevention, and parent-child interaction.<sup>53</sup> Project SafeCare has been reported to reduce the recurrence of physical abuse and neglect when compared with a family preservation programme;<sup>53,54</sup> however, major limitations in study design and methodological weaknesses currently preclude any conclusions about its effectiveness in reducing recidivism—this is being assessed in a current trial.<sup>55</sup>

#### *Programmes focused specifically on neglect*

In a systematic review of controlled studies evaluating interventions for children exposed to neglect or for their caregivers, Allin and colleagues<sup>56</sup> concluded that few evidence-based treatments are available. Resilient peer treatment<sup>57</sup> was noted in one trial to improve social interactions and reduce behaviour problems, although the sample size was small (n= 46) and follow-up was only 2 months. A larger RCT of resilient peer treatment (n=82) published after the review<sup>58</sup> confirmed earlier positive

**Panel 5: Interventions for preventing child physical abuse and neglect: Triple P—Positive Parenting Program<sup>29</sup>**

**Programme model**

- Public-health population-based approach to child maltreatment
- Comprehensive population-level system of parenting and family support
- Multiple levels of social learning based programme to meet the needs of different groups of parents

**Programme goals**

- Address the difficulties of restricted access of population to evidence-based parenting programmes
- Enhance parental competence, and prevent or alter dysfunctional parenting practices

**Programme description**

- Multilevel system including five intervention levels of increasing intensity and narrowing population reach and delivered by a range of specially trained practitioners
- Universal Triple P (level 1): use of media and informational strategies including radio, local newspapers, newsletters at schools, mass mailing to family households, presence at community events, and website information
- Selected Triple P (level 2): consists of brief and flexible consultations with individual parents (1–2 consultations of 20 min each), parenting seminars with large groups of parents, or both
- Primary care Triple P (level 3): consists of four brief consultations (20 min) incorporating active skills training and use of parenting tip sheets
- Standard and group Triple P (level 4): a ten-session programme (90 min per session) with individual families using active skills training, home visits, or clinic observation sessions, or an eight-session group-administered programme (five 2-h group sessions) using observation, discussion, practice, and feedback plus three 15–30 min telephone follow-up sessions
- Enhanced Triple P (level 5): is an augmented version of level 4—eg, optional modules on partner communication, mood management, and stress coping skills

effects of this programme when integrated into Head Start classrooms.<sup>58</sup> A programme of imaginative play training<sup>59</sup> led to improved peer interactions, positive affect, and better cooperation; again the sample size was small (n=34) and the follow-up was only a month. Multisystemic therapy, when compared with a parent-training programme, showed improved parent–child interactions; the sample size was small (n=33), groups were not equivalent on some characteristics, and the follow-up was only 1 week post-treatment.<sup>60</sup> A specific therapeutic day treatment programme assessed in a non-randomised controlled study (n=34) showed some effect in increasing neglected children's self-concept.<sup>61</sup>

**Sexual abuse**

*Programmes for children and families*

Various psychological treatments aimed at reducing impairment associated with sexual abuse<sup>62,63</sup> (or trauma including sexual abuse)<sup>43–45</sup> have been systematically reviewed. Outcomes included internalising and externalising symptoms or disorders, and sexualised behaviour. The children participating have ranged in age from 2 to 17 years, and some interventions have included parents in the treatment. Ramchandani and Jones<sup>62</sup>

**Panel 6: Interventions for preventing psychological abuse: improving maternal sensitivity<sup>38</sup>**

The following provides one<sup>39</sup> of several possible methods of working with parents to prevent psychological abuse by improving maternal sensitivity:

**Programme model**

- Home-based video feedback with optional attachment discussion groups

**Programme goals**

- Improve maternal sensitivity using written information about sensitive parenting and video feedback
- Improve infant–mother attachment

**Programme description**

- Participants consisted of a screened group of insecurely attached mothers with a firstborn, 4-month-old child
- Four 1.5–3-h home visits every 3–4 weeks delivered by two of the study authors plus third intervener; session videotaped for use in subsequent session
  - Session 1: baby's contact seeking and exploration behaviour; use of baby diary to note behaviour and parental activities for 3 consecutive days
  - Session 2: "speaking for the baby" technique to draw mother's attention to subtle signals and expressions; used videotape to identify baby's and mother's feelings; provided brochure outlining baby's need to feel understood and secure
  - Session 3: adequate and prompt reactions to baby's cues; used videotape to identify baby's signal, response from mother, and baby's reaction; brochure provided on sensitive play with young children
  - Session 4: sharing emotions and affective attunement using videotape to focus on the child's emotions and mother's reactions
- A second intervention group included additional discussions focused on the mother's past attachment experiences and their possible influences on her parenting style

reviewed 12 RCTs published before December, 2002; nine from the USA, one from Australia, and two from the UK. Three studies looked at group cognitive-behavioural therapy, six were of individual cognitive-behavioural therapy, one assessed the addition of group therapy to a family therapy programme, and two compared individual and group therapy. Comparisons generally involved either a wait-list control group or a group receiving some type of supportive therapy. The authors concluded that the best evidence was for cognitive-behavioural therapy, particularly for children who had symptoms of post-traumatic stress disorder; they also noted that those studies with a positive effect involved a parent or caregiver in the treatment. There was also improvement in behavioural problems, including sexualised behaviour. The authors described the overall methodological quality of the studies as low, often



because of inadequate description of the methods. They also emphasised that although most of the children and families improved, some became worse. The evidence regarding effectiveness of individual versus group therapy was deemed too inconsistent to reach a conclusion.

The efficacy of cognitive-behavioural therapy for sexually abused children was assessed in a review of randomised or quasi-randomised studies before November, 2005.<sup>63</sup> The review included the cognitive-behavioural therapy studies listed above and two additional US trials. Sample sizes typically ranged between 25 and 100 participants, with the largest including 229 children.<sup>64</sup> The interventions varied in programme content and frequency (six to 20 sessions), but generally included the following themes for the child sessions: safety education, coping skills, cognitive processing of the abusive experience, identification of inappropriate behaviours, relaxation techniques, dealing with problems related to the abuse, and graduated exposure in reducing avoidance behaviour.<sup>63</sup> Parent or joint sessions focused on parent-child communication, psycho-education, cognitive reframing, and parent-management training.<sup>63</sup> Results of the meta-analyses indicated decreases in depressive ( $p=0.06$ ), post-traumatic stress disorder ( $p=0.004$ ), and other anxiety ( $p=0.09$ ) symptoms at 1-year follow-up, but no effect, on average, on sexualised behaviour or externalising symptoms. Methodological aspects of the individual studies were poorly reported. Macdonald and colleagues<sup>63</sup> commented that those studies in which symptoms of post-traumatic stress disorder were an inclusion criterion showed a positive effect on this outcome.

There was consensus across the two systematic reviews specific for sexual abuse that cognitive-behavioural therapy should be considered as the first-line treatment for sexually abused children and their families, but the evidence for benefits is not as broad or as compelling as other authors suggest. Ramchandani and Jones<sup>62</sup> emphasised the following treatment considerations: ensuring the child's safety from further abuse; taking into account the context, including other adversities for the child and family; recognising comorbid psychiatric conditions; and understanding the need for outreach, in view of the high attrition in many of the treatment studies. These issues are applicable to the assessment of children exposed to any type of maltreatment.

Although one review of interventions to reduce psychological harm associated with traumatic events concluded that there was strong evidence for cognitive-behavioural therapy,<sup>43</sup> others were more cautious. Stallard<sup>44</sup> noted that attrition rates were often not adequately reported, and intention-to-treat analyses were rarely used. Although post-treatment positive effects seemed to be maintained, few studies had follow-up periods extending beyond 12 months. A substantial proportion of children with post-traumatic stress who received cognitive-behavioural therapy (16–40%) still met the diagnostic criteria for the disorder at the end of treatment.<sup>44</sup> Silverman

#### Panel 7: Interventions for reducing recurrence of physical abuse: parent-child interaction therapy (PCIT)<sup>50</sup>

##### Programme model

- PCIT involving the treatment of parents alongside children
- Behaviourally defined approach to skills training

##### Programme goals

- To increase parental motivation and enhance skills
- To improve parent-child interaction through use of direct coaching and practice of skills in dyadic parent-child sessions

##### Programme description

- Three modules delivered by PCIT trainers who ranged in experience from graduate students to experts with years of training in PCIT
- Parent-child dyads referred as they entered the child-protection system for a new confirmed physical abuse report
- Module 1: six-session orientation group aimed at increasing motivation by fostering an understanding of the negative consequences of severe physical discipline and development of self-motivational cognitions and self-efficacy expectations
- Module 2: 12–14-session course of PCIT consisting of clinic-based, individual parent-child dyad sessions in two phases. Phase I (child directed interaction) focuses on teaching relationship-enhancement skills and establishing a daily positive interaction; phase II (parent directed) focuses on teaching command-giving skills and a behavioural discipline protocol to promote the child's compliance
- Module 3: four-session follow-up group programme to address any implementation problems; children attend a concurrent social-skills programme

#### Panel 8: Interventions for preventing impairment after sexual abuse: trauma-focused cognitive-behavioural therapy<sup>43-45,62,65</sup>

##### Programme model

- Psychotherapeutic intervention based on cognitive and social learning theories

##### Programme goals

- To alleviate symptoms of post-traumatic stress disorder and related difficulties experienced by sexually abused children

##### Programme description

- Sessions provided by trained mental health professionals with diverse backgrounds (eg, social workers, psychologists) who underwent 3 days of training
- Children and their families recruited from outpatient clinical programmes where referrals made from a broad range of providers (eg, police, child-protection workers) plus self-referrals
- Specific elements include skills in expressing feelings, coping, recognising links between feelings and behaviours; gradual exposure through developing a child's narrative; reprocessing the abuse; psychoeducation about child sexual abuse and safety; parent management skills. In a multisite trial<sup>64,65</sup> ( $n=229$ ), treatment was provided in 12-weekly individual sessions to parents and children by one therapist with 45 min for each individual session; three sessions included a joint parent-child session for 30 min (total of weekly sessions 90 min)

and colleagues<sup>45</sup> concluded that only trauma-focused cognitive-behavioural therapy (panel 8)<sup>64,65</sup> met the well-established criteria of Chambless and Hollon.<sup>66</sup> Effect sizes for sexual abuse treatments ranged from 0.10 to 0.46 (0.46 was the effect size for post-traumatic stress symptoms). Although Silverman and colleagues<sup>45</sup> regarded

**Panel 9: Interventions for preventing exposure by reducing intimate-partner violence: Post-Shelter Advocacy Programme<sup>71,72</sup>****Programme model**

- Paraprofessional counselling and advocacy

**Programme goals**

- To reduce re-exposure to violence and improve quality of life
- To ensure the safety of women and advocates

**Programme description**

- Advocacy services provided by female undergraduate students in a community psychology course who attended two orientation sessions and one semester of intensive training
- Women recruited while in shelters for abused women
- The advocates focused on: devising safety plans with women; and using a five-stage process of assessment, implementation, monitoring, secondary implementation, and termination to access and mobilise community resources including housing, employment, transportation, child care, and legal assistance services provided after leaving shelter for 4–6 h per week through twice-weekly visits for 10 weeks

**Panel 10: Interventions for preventing impairment from exposure to intimate-partner violence: Child-Parent Psychotherapy (CPP)<sup>75,76</sup>****Programme model**

- Focus on the mother-child relationship
- Based on theories of attachment, parenting and traumatic stress, including social learning and cognitive-behavioural theories, and the intergenerational transmission of violence

**Programme goals**

- To reduce children's emotional and behavioural problems and post-traumatic stress symptoms
- To reduce maladaptive behaviours and support developmentally appropriate interactions
- To assist the mother and child in creating a narrative of the traumatic events while moving towards resolution

**Programme description**

- Clinicians had Masters and PhD-level training in clinical psychology and were trained using a CPP manual developed for this purpose
- CPP provided to mother-preschooler (aged 3–5 years) dyads where the mother was a victim of intimate-partner violence and the child had been exposed to intimate-partner violence
- The mother was actively involved in setting the treatment plan and received individual counselling as required
- Weekly 60-min CPP sessions for 50 weeks including child's free play with appropriate toys to elicit trauma play and social interaction

the evidence for trauma-focused cognitive-behavioural therapy to be more robust than previous authors,<sup>44,62,63</sup> they emphasise that the studies are limited in power, length of follow-up, and lack of intention-to-treat analyses. Treatment programme approaches for child molesters are reviewed in the webappendix.

**Psychological abuse**

No single approach has been used to address psychological abuse, possibly because it is such a wide-ranging topic and

potentially includes activities that do not promote the child's social adaptation alongside so-called missocialisation, in which children are exposed to harmful environments such as intimate-partner violence and drug misuse.<sup>37</sup> There is a paucity of high-quality studies evaluating the effectiveness of interventions specifically designed for parents or caregivers who psychologically abuse their children.<sup>37</sup> The available evidence includes a RCT comparing two group-based versions of cognitive-behavioural therapy (standard and enhanced versions of the Triple P programme) directed at psychologically abusive parents.<sup>67</sup> The standard programme aimed to teach parents child-management strategies designed to promote children's competence and development and to help parents manage misbehaviour; the enhanced programme included additional components to change parental misattributions and anger. Both treatment groups made substantial gains in a range of outcomes; however, this study did not include a control group, and many parents had self-referred. Parents who are severely abusive might be less inclined to self-refer or to recognise the effects of their own behaviour on children's externalising behaviours.<sup>68</sup>

One RCT, comparing a preschoolchild-parent psychotherapy programme with a psycho-educational home visiting programme and a community standard intervention group, seemed to favour a psychotherapeutic intervention in terms of children's negative representations of their mother and of themselves, and also children's expectations of the mother-child relationship. However, the measurement of this particular construct was more likely to favour the psychotherapy programme than psycho-educational home visiting, and no other outcomes were included.<sup>69</sup> These findings suggest several approaches to reducing psychological abuse, but further research is necessary.

**Exposure to intimate-partner violence**

Systematic reviews have highlighted the lack of evidence for the effectiveness of screening women to reduce subsequent exposure to intimate-partner violence.<sup>40,41,70</sup> The most promising intervention to date is a post-shelter counselling intervention tested with women in a RCT (n=284) by Sullivan and Bybee (panel 9).<sup>71,72</sup> This programme of advocacy services compared with no additional services significantly reduced repeat violence and improved women's quality of life at 2 years' follow-up.<sup>71</sup> However, the effect on violence reduction was lost by 3 years' follow-up.<sup>72</sup> The generalisability of these results to non-shelter samples is unknown.

No other published studies that we know of provide high-quality evidence for interventions to reduce exposure to intimate-partner violence. Although there is some evidence that approaches such as restraining orders against abusive partners might prevent recurrent violence,<sup>73</sup> batterer treatment programmes have had mixed, but generally negative, results.<sup>74</sup>

RCTs of interventions for children exposed to intimate-partner violence have shown positive outcomes. Lieberman and colleagues<sup>75</sup> did a RCT (n=75) to assess the effectiveness of child–parent psychotherapy in mother–preschooler dyads where the mother was a victim of intimate-partner violence and had confirmed that the child (aged 3–5 years) had exposure (panel 10). The child–parent psychotherapy group showed a significant improvement over time compared with controls, including fewer children meeting the diagnostic criteria for traumatic stress disorder. These effects persisted at 6 months' follow-up.<sup>76</sup> Although this was a rigorous RCT, the sample was fairly small. However, these results, alongside other efficacy trials of child-only compared with child–mother therapy and with controls,<sup>77</sup> indicate that these forms of mother–child therapy in families where children are exposed to intimate-partner violence warrant further evaluation in larger and more diverse samples.

### Out-of-home care interventions

This section and the webappendix discuss outcomes associated with social services' placement of maltreated children in out-of-home care (including foster care, kinship care, residential treatment, group homes, and shelter care; panel 11). In the summary below, we use those terms that appear in the individual studies.

Assessing the relative merits of out-of-home care as an intervention is difficult because of the lack of randomised studies. Quasi-experimental studies have compared: abused and neglected children who are placed in out-of-home care to those who remain at home; and foster children who reunify with their biological families to children who remain in foster care. Two studies that compared maltreated children placed in care with those who remain at home reported that they did not differ on delinquency and adult criminal outcomes.<sup>78,79</sup> One study, with a very small sample, noted that children who were placed in foster care after kindergarten compared with those who remained at home had more behaviour problems as assessed by their teachers.<sup>80</sup> However, children placed in foster care are likely to have experienced more serious and chronic maltreatment and are more likely to have parents who are unable to handle child-rearing responsibilities than children who remain at home.<sup>79,81,82</sup>

Despite the potential increased risk for children removed from their homes, several other studies have reported that children placed in care actually fared better than maltreated children who remained at home did in the following domains: antisocial behaviour,<sup>83</sup> sexual activity,<sup>84</sup> school attendance and academic achievement,<sup>85</sup> social behaviour, and quality of life.<sup>86</sup> A few other studies suggest that foster care could provide a benefit for vulnerable youth. In an innovative study, abandoned, institutionalised Romanian children were randomly assigned to either stay in the institution or to live with a foster family.<sup>87</sup> Those who went to live in foster care, especially the young abandoned children, had improved

### Panel 11: Definitions for out-of-home care interventions\*

#### Foster care

Used to denote substitute parental care in a family household by non-relative adults who receive compensation to be caregivers for children who have been removed from their biological parents' care by social services

#### Kinship care

Used to denote substitute parental care of children by relatives or any adult who has a kinship bond with a child; this could include family friends or godparents. In this review, we are referring to children placed with kin by social services because of child maltreatment, although there are many circumstances when children live with kin without social services' involvement. In some jurisdictions, kinship caregivers can become licensed or certified (sometimes referred to as kinship foster care) and then could be entitled to compensation

\*Definitions continued in webpanel.

cognitive outcomes relative to those who remained in the institution. A large US study noted that enhanced foster care (which included better trained caseworkers and greater access to services, and supports for youth and foster families) led to fewer mental and physical health problems for foster care alumni than did traditional foster care.<sup>88</sup> Other uncontrolled studies have reported that young children's adaptive behaviour improved after placement in foster care<sup>89</sup> and that placement in foster care reduced children's lead exposure.<sup>90</sup>

Family preservation programmes—intensive, short-term services to keep maltreated children at home—have been widely implemented in the USA. Most experimental studies have not shown a reduction in placements for the treatment group.<sup>91–95</sup> Design weaknesses include: few RCTs, poorly developed evaluation plans, small samples and differential attrition, inconsistent programme goals, diverse services provided, failure to identify families who could benefit, and lack of fidelity in implementation.<sup>93–95</sup>

Once children have been placed in out-of-home care, there is often an assumption that reunification is the optimum outcome.<sup>96–99</sup> Although 50–75% of children placed in out-of-home care eventually reunify, between 20–40% of those reunified subsequently re-enter foster care.<sup>100–108</sup> Studies have recorded better outcomes for children who were not reunified with their families of origin than those who were, including gains in intelligence scores,<sup>109</sup> greater overall wellbeing,<sup>110</sup> and less criminal recidivism.<sup>111</sup> These studies, however, did not control for behavioural functioning at entry to foster care.

Longitudinal studies that examined the effect of reunification, controlling for functioning assessed pre-reunification, have reported that reunified youth showed worse outcomes in internalising and externalising problems, risky behaviours, competencies, grades, school dropout, involvement in the criminal justice system, adverse life events, and witnessing physical violence.<sup>112–115</sup> One of these studies also reported that reunified youth were more likely to experience physical and psychological

## Panel 12: Evidence gaps

**Prevention of exposure to child maltreatment**

- Physical abuse—need further clinical and population-based trials of parent training to establish effectiveness of existing programmes. Studies evaluating interventions to prevent abusive head trauma (shaken impact syndrome) require replication; important to consider whether large-scale RCT could be done, in view of low base rate of abusive head trauma
- Neglect—need to determine essential features of effective home-visiting programmes for prevention of physical abuse and neglect. Additional strategies needed to prevent neglect; home visitation will not be the only answer
- Sexual abuse—where such programmes do not yet exist, there is the opportunity to do a RCT that includes outcomes of incidence of sexual abuse as well as proxy outcomes of knowledge and behaviour; adverse outcomes need to be measured
- Psychological abuse—interventions are required and studies need to include well validated measures of psychological abuse
- Exposure to intimate-partner violence—interventions assisting women to prevent intimate-partner violence need to consider prevention of intimate-partner violence exposure in children

Trials are underway to establish if community-level interventions prevent one or more of the five types of child maltreatment\*

**Prevention of recurrent abuse or adverse outcomes associated with child maltreatment**

- Physical abuse—further studies of parent-child interaction therapy required; other parent-training studies should include direct measures of physical abuse
- Neglect—Project Safecare trials currently underway should establish if this programme is effective in reducing recurrence of neglect
- Sexual abuse—trials of cognitive-behavioural therapy need better methods with longer follow-ups and consistency of outcome assessment across trials
- Psychological abuse—larger-scale studies of treatment for parents of emotionally abused children plus development of treatments for children, with both assessed using direct outcomes of such abuse
- Exposure to intimate-partner violence—further evaluation, in larger and more diverse samples, of mother-child therapy in families where children are exposed to intimate-partner violence
- Out-of-home care—replication of high-quality observational studies determining effectiveness of foster care in improving outcomes for children; further evaluation of multidimensional treatment, foster care treatment, and adaptations of this programme

\*All programmes above need to be evaluated with randomised trials where possible, and use objective outcome measures, clear specification of primary and secondary outcomes, without sole reliance on self-report measures.

violence when disciplined and were less likely to receive mental-health treatment even after controlling for baseline levels of internalising symptoms.<sup>113</sup> Although a smaller effect, one study reported that reunified children had lower perceived social isolation than non-reunified youth.<sup>112</sup> Finally, in another study, children who were formerly in foster care were 1.5-times more likely to die from a violent death than were children who remained in foster care, and three times more likely to die from violent causes than were children in the general population.<sup>116</sup>

Placement of children in kinship care is a common child welfare practice in developed countries. Research has shown that salient risk and protective factors differ

between kinship and foster caregivers. On average, kinship caregivers are older, less well educated, less likely to be married, report more problematic parenting attitudes, receive fewer non-child welfare services, and have less caseworker oversight.<sup>117–122</sup> However, research has shown that children in kinship care are less likely to be maltreated and have fewer placement changes (relative to children in foster care), both of which are associated with better behavioural outcomes.<sup>103,123–126</sup>

Studies comparing kinship to non-relative foster care have shown mixed results, with some studies indicating few or no differences on indices of behavioural, cognitive, educational, medical, and interpersonal functioning.<sup>117,127–131</sup> Other studies have found that children in kinship care seem to fare better in terms of behavioural, educational, mental health, and social functioning.<sup>117,130,132–134</sup> Finally, two studies have shown more negative outcomes for children in kinship care, in terms of delinquent behaviour<sup>135</sup> and IQ.<sup>136</sup> A major issue that affects the interpretability of these findings is the lack of control for baseline functioning, since there has been some suggestion that children who are placed in kinship care come from less dysfunctional families than do those in foster care.<sup>137</sup> Others have suggested that children with fewer behavioural or emotional problems are more likely to be placed in kinship care homes.<sup>127,132,138</sup> Those few interventions shown to be efficacious with out-of-home care samples are discussed in the webappendix.

**Discussion**

Despite the lack of evidence for effective interventions in the area of child maltreatment compared with other paediatric public-health problems,<sup>139</sup> there have been some important gains over the past 30 years in approaches to prevention of maltreatment and its associated impairment. The programme with the best evidence for preventing child physical abuse and neglect is the Nurse-Family Partnership, which has shown reductions in objective measures of child maltreatment or associated outcomes when administered to high-risk families prenatally and in the first 2 years of a child's life; however, most home-visiting programmes have failed to show such benefits.<sup>15,25,140</sup> Similarly, the Early Start programme has shown positive effects in one trial but requires evaluation in other sites. Three common features of Nurse-Family Partnership and Early Start could explain their success: they were developed as research programmes rather than as service provision methods; both use workers with tertiary level qualifications; and they have made substantial investments in ensuring the fidelity of programme delivery. In theory, programmes that share common features with Nurse-Family Partnership and Early Start should be effective in preventing child maltreatment; however, the weight of evidence<sup>140,141</sup> suggests that most interventions of this type are ineffective. The effectiveness of other home-visitation programmes should be assessed in randomised trials before dissemination.

The Triple P—Positive Parenting Program showed positive effects on substantiated reports of child maltreatment and associated outcomes in one population-based trial; however, effects arise from a single study using an ecological design (allocation of intact units) with a small sample size and some details of the analysis are unclear.<sup>29</sup> Furthermore, replication of these findings in another setting is important. Preliminary findings suggest that some prevention programmes for abusive head trauma could be effective in reducing inflicted head injury,<sup>30</sup> and a programme of enhanced paediatric care for families might show benefits in reducing physical abuse and neglect in children, but further research is necessary.<sup>31</sup>

Much less is known about approaches for preventing sexual abuse, psychological abuse, and children's exposure to intimate-partner violence. Sexual abuse education programmes improve knowledge and protective behaviours under simulated conditions; their effect on preventing occurrences of sexual abuse remains unknown. The history of sexual abuse prevention programmes highlights the problem in disseminating an intervention before it has undergone adequate evaluation. When these programmes were first developed, there was the opportunity to undertake a trial with outcomes that included incidents of sexual abuse—both disclosures and reports from child-protection services—measured over a reasonable follow-up period. Such programmes are now widespread, so a RCT with an appropriate follow-up is unlikely to be undertaken, although comparison with a usual care group is still possible. In the prevention of psychological abuse, there is some preliminary evidence that attachment-based interventions can reduce maternal insensitivity, an early form of emotionally harmful parenting, but whether such programmes prevent the later occurrence of psychological abuse is unknown.

Preventing the recurrence of maltreatment is particularly important when a caregiver living with the child is the identified perpetrator; this occurs less often with sexual abuse compared with the other types of maltreatment. A broad range of parent-training programmes and in-home interventions are provided to families to prevent recurrence, but there is little evidence for their effectiveness.<sup>47</sup> PCIT has shown benefits as an intervention to reduce recidivism of physical abuse but not neglect.<sup>50</sup> Home visitation by a nurse<sup>52</sup> did not reduce recurrence of either neglect or physical abuse, although such programmes might be beneficial in reducing physical abuse but not neglect, in families newly involved with child-protection services. The negative results from these two RCTs<sup>50,52</sup> in reducing neglect underscore the substantial challenges in preventing its recurrence. Project SafeCare<sup>55</sup> is promoted as reducing recidivism of physical abuse and neglect; although ongoing RCTs might answer this question, current studies provide insufficient evidence of effectiveness.

Much more progress has been made in developing interventions to reduce impairment. The strongest evidence for reducing psychological symptoms in children who have experienced sexual abuse is for cognitive-behavioural therapy; outcomes are improved when the treatment is targeted to children with symptoms of post-traumatic stress and a non-offending parent is involved in treatment.<sup>62,63</sup>

For neglected children, there is some preliminary evidence for resilient peer treatment,<sup>57,58</sup> an imaginative play programme,<sup>59</sup> multisystemic therapy,<sup>60</sup> and a day treatment intervention.<sup>61</sup> Although recognition of exposure to intimate-partner violence as a specific type of child maltreatment has occurred only recently, child–parent psychotherapy shows positive outcomes as an intervention for children with such experiences.<sup>75,76</sup>

Out-of-home care is one of the most widely used interventions for maltreated children, yet there are few rigorous studies examining its effects. There is increasing evidence from observational studies that placement and remaining in foster care can lead to benefits for maltreated children compared with reunification; promising interventions include multidimensional treatment foster care and adaptations of this model. Studies of training programmes for foster parents show mixed results (webappendix).

Clearly, the field of maltreatment needs rigorous designs applied to the assessment of programmes across the range of interventions. Although the reluctance to use RCTs seems to be decreasing, there are still few controlled trials of programmes to reduce the recurrence of maltreatment.<sup>7,142</sup> In those areas where controlled trials have been done, such as reduction of impairment associated with child sexual abuse, there are several common limitations:<sup>7,42,44,62,63</sup> poor reporting of methods including sample size determination, randomisation procedure, and loss to follow-up; inadequate attention to reasons for attrition; short-term follow-ups; inappropriate analyses, including lack of intention-to-treat approaches; insufficient replication studies in determining external validity; and problems with outcome assessment. In planning future studies (panel 12), many of these issues can be addressed by careful adherence to the CONSORT recommendations.<sup>12,44</sup>

The selection of outcomes across the range of interventions is of prime importance. We agree with Skowron and Reinemann,<sup>42</sup> who recommend a so-called multimethod and multisource approach to the assessment of maltreatment, but would also add that there needs to be clear a-priori identification of primary and secondary outcomes. The potential for bias in selection of any outcomes needs to be addressed; there has been over-reliance on use of parental self-reports and reports of child behaviours<sup>44,143</sup> in interventions aimed at reducing abusive or neglectful behaviours in parents. Use of child-protection services reports is often not possible, particularly in assessment of programmes aimed at

preventing maltreatment, because of low base rates and system challenges in accessing such reports.<sup>12</sup> Some argue that surveillance bias precludes the use of child-protection records in assessing outcome<sup>144</sup> but at least one study refutes this concern.<sup>145</sup> Furthermore, systematic approaches to reviewing child-protection services records taking into account source of report and use of sensitivity analyses<sup>52</sup> can address this issue, especially in assessment of programmes for families involved with child-protection services. Also, trials need to include objective measures of child health, such as injuries and encounters with the health-care system, in addition to direct observations of parenting. Measuring only the risk factors thought to lead to abuse and neglect is not sufficient—programmes must assess actual outcomes of maltreatment and related health outcomes.<sup>3</sup>

This review is limited by its focus on interventions aimed at the individual (child or caregiver) or family, because of the emphasis on describing those programmes that have undergone the most rigorous evaluation, although one population-based programme was reviewed.<sup>29</sup> Increasingly, interventions at the community level are being considered in the prevention of child maltreatment. For example, some communities are implementing preventive systems of care—strategies to bring together community agencies into a coordinated system with the goal of reducing child maltreatment.<sup>146</sup> Dodge and colleagues<sup>146</sup> suggest that lack of coordination among social-service agencies could prevent some families from receiving the financial support or health services that could lead to better parenting skills. In Durham, NC, USA, a preventive system has been implemented based on principles of a system of care, defined as a comprehensive range of mental-health resources and other support services organised into a network to meet the needs of children and families. Researchers are proposing to use official rates of child maltreatment, with other indices, including visits to hospital emergency departments, injuries, and anonymous surveys of parents about parenting practices. A second example of a community-based intervention, Strong Communities for Children, is being assessed by Melton and colleagues in two South Carolina counties.<sup>147</sup> This approach involves a comprehensive strategy of engaging all sectors of everyday life; it relies on volunteers and organisations to increase the support for families of young children. Community-based initiatives are attractive as a public-health approach to reducing child maltreatment, but such programmes must be evaluated. Whether such approaches reduce maltreatment is unclear, despite their promising theoretical foundation.

In addition to improved assessment of existing services, additional approaches to reducing maltreatment should be considered. Bugental<sup>148</sup> recommends, for example, that greater attention should be given to programmes aimed at preventing men from physically abusing children. Increasingly, there is recognition of the overlap

of different types of maltreatment exposure, and the need to take this into consideration in developing prevention programmes. Other studies underscore the high rates of comorbidity between exposure to intimate-partner violence and other types of child maltreatment, and associated impairment.<sup>149,150</sup> In reducing impairment, Cohen and colleagues<sup>151</sup> recommend that treatment models should target symptom clusters, rather than focusing on abuse and neglect exposures.

Important advances have been made over the past 30 years in developing interventions to reduce child maltreatment; a broad range of disciplines are now involved, such as public health, social work, psychology, nursing, paediatrics, and psychiatry. A commitment across disciplines to apply evidence-based principles and link science with policy is essential.

#### Conflict of interest statement

We declare that we have no conflict of interest. The corresponding author had full access to all the papers used in the study and had final responsibility for the decision to submit for publication.

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