

## Periodic health examination, 1993 update: 1. Primary prevention of child maltreatment

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Child maltreatment includes physical abuse, neglect, sexual abuse and emotional abuse.<sup>1</sup> It is a common and pervasive problem associated with a high burden of suffering.<sup>2,3</sup> The effects on its victims may include physical disability as well as cognitive, social and emotional impairment and may extend into adulthood. Child death has also been linked with abuse and neglect. Child maltreatment is a complex and multicausal problem resulting from interactions between individual characteristics of the caretaker and familial, environmental and cultural factors.<sup>4</sup>

In 1979 the Canadian Task Force on the Periodic Health Examination reported that there was fair justification for considering parenting problems, including child abuse and neglect, among those conditions dealt with in a periodic health examination.<sup>5,6</sup> This report is focused on the primary prevention of child abuse and neglect in a periodic health examination. It examines the scientific evidence on the use of screening questionnaires, checklists and interviews

to identify people at risk of maltreating children. The report also deals with programs for primary prevention of child maltreatment, such as perinatal and early childhood support programs (e.g., home visitation) and educational programs designed to teach children to recognize and respond to potentially abusive situations. Since the focus is on primary prevention a review of early detection or diagnosis of child maltreatment is not included in this report.

### Burden of suffering

No national data are available in Canada regarding reports of child maltreatment. However, in the United States an estimated 2 178 000 reports of suspected child abuse or neglect were received in 1987, for a US rate of 34.0 cases per 1000 children.<sup>7</sup> If the rate in Canada is similar, there would be 249 000 cases per year here. Many episodes of child maltreatment go unreported because of failure to detect, recognize or officially report the abuse.<sup>8</sup>

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Dr. Harriet L. MacMillan was a visiting fellow in the Department of Social Medicine, Harvard Medical School, Boston, Mass., and was supported by a travelling fellowship from the Ontario Mental Health Foundation during the preparation of this article.

Copies of this and the other task force reports are available from the Health Services Directorate, Health Services and Promotion Branch, Department of National Health and Welfare, Tunney's Pasture, Ottawa, ON K1A 1B4.

Estimates of both incidence and prevalence rates of child maltreatment have been derived from survey data. Researchers have focused on subcategories of maltreatment, generally either physical or sexual abuse. There is evidence of important epidemiologic differences between physical and sexual abuse.<sup>9</sup>

A US national survey conducted in 1985 estimated the rate of physical violence against children among households with two caretakers and at least one child aged 3 through 17 years;<sup>10</sup> 10.7% of the parents admitted to having carried out "a severe violent act" against their child in the previous year.

Rates of sexual abuse have been estimated from surveys of nonclinical groups.<sup>11-13</sup> In a US telephone survey sexual abuse during childhood was reported by 27% of women and 16% of men.<sup>13</sup> This survey suffered from a high refusal rate (24%), as have others. The validity and reliability of data based on recall of childhood experiences have also been questioned.<sup>14</sup>

The National Population Survey was undertaken in Canada in 1983 to examine the incidence and prevalence of sexual abuse of children and youths.<sup>15</sup> A written questionnaire was administered to a community sample of Canadian adults. An estimated 15% of women and 8% of men reported that they had been victims of attempted or actual sexual intercourse before the age of 18 years.

Feldman and associates<sup>16</sup> systematically analysed studies of prevalence rates of childhood sexual abuse in the general population. Using the "best evidence method," they concluded that the rate among girls 13 years or less varied from 10% to 12%. They did not evaluate the prevalence rate among boys.

Although information linking abuse and neglect with child death has not been reliable<sup>17,18</sup> an estimated 2000 to 5000 children die in the United States each year as a result of maltreatment.<sup>19</sup> There are no Canadian data available to quantify the role of maltreatment in child death here.

Many of the data concerning consequences of child maltreatment come from descriptive studies, which lack control groups. Nevertheless, there is evidence that maltreated children are adversely affected in many ways.<sup>20,21</sup> They may suffer from cognitive, emotional and social impairment in addition to physical disabilities.<sup>3,21,22</sup> Children who are maltreated are often disadvantaged in other ways; it is difficult to separate the effects of abuse and neglect from other factors such as low socioeconomic status.<sup>23</sup> A recent prospective study involving 309 children showed that the experience of physical abuse increased the likelihood of aggressive behaviour problems beyond those associated with factors such as poverty and deprivation.<sup>24</sup>

Reports of links between childhood maltreatment and adult psychologic problems have appeared frequently in the literature. Retrospective studies have pointed to an association between a history of childhood maltreatment and various psychiatric disorders,<sup>25-28</sup> such as borderline personality disorder,<sup>27,28</sup> multiple personality disorder,<sup>26</sup> drug and alcohol abuse<sup>29</sup> and criminal behaviour.<sup>30</sup> Bifulco, Brown and Adler<sup>31</sup> conducted semistructured interviews with 286 working-class mothers to determine risk markers for the onset of depression. They found that sexual abuse before the age of 17 years, parental neglect and physical abuse by a parent were all associated with an increased risk of depression. No conclusions about causation can be drawn from such data without the use of prospective designs.

The need for controlled studies to examine the association between child abuse and subsequent adult psychologic problems has been emphasized. Widom,<sup>32</sup> using a matched cohort design, found that the subjects who had experienced physical abuse or neglect during their childhood had a higher likelihood of later violent criminal behaviour than the matched control subjects.

Despite the difficulties in measuring the frequency and effects of child maltreatment, the human and fiscal costs are clearly enormous. In the United States the estimated annual cost of caring for children seriously hurt by maltreatment approaches \$500 million.<sup>17,33</sup> No recent Canadian figures are available for comparison.

## Screening for risk of child maltreatment

### *Effectiveness of screening*

The concept of screening people for risk of maltreating children has received intensive investigation over the past two decades. Efforts have been directed toward identifying people at increased risk for committing physical child abuse or neglect.<sup>34</sup> Methods of screening include three main approaches: a staff-administered checklist, a self-administered questionnaire and a standardized interview.<sup>35</sup> The Family Stress Checklist<sup>36,37</sup> and the Dunedin Family Services Indicator<sup>38,39</sup> are examples of the first approach. Self-administered questionnaires include the Child Abuse Potential Inventory<sup>40-42</sup> and the Michigan Screening Profile of Parenting.<sup>43,44</sup> The Adult-Adolescent Parenting Inventory<sup>45,46</sup> and the Parent Opinion Questionnaire<sup>47</sup> are two self-administered questionnaires that have been assessed in terms of identifying current abusive parenting rather than as screening devices for future child abuse. A standardized interview format has been used by Altemeier and collaborators.<sup>48</sup> Gray and colleagues<sup>49</sup> assessed the risk status of newborn infants for child maltreat-

ment using interviews, questionnaire results and observations of parental behaviour. Leventhal, Garber and Brady<sup>50</sup> examined whether clinicians could correctly identify infants at high risk for abuse and neglect without the use of specific instruments.

The ability of these instruments and interviews to predict child maltreatment is best demonstrated by an examination of their sensitivity, specificity and misclassification rates.<sup>51</sup> The last item, which includes false-positive and false-negative rates, must be considered against the prevalence rate of child abuse.<sup>34,52</sup> Many different prevalence rates exist,<sup>52</sup> in part because of the lack of agreement on the definition and method of measuring maltreatment.<sup>1</sup> Daniel and coworkers<sup>51</sup> emphasized that even with a high prevalence rate of 20%, screening of 1000 children with an instrument whose sensitivity is 80% and specificity 90% would result in a 33% rate of false-positive predictions among all positive test results. With a lower prevalence rate of abuse, the number of false-positive results would be even higher. In addition, estimates of sensitivity and specificity and of accuracy of screening will always be suboptimal without an agreed-upon definition, or "gold standard," for child maltreatment (Dr. David L. Olds, University of Rochester Medical Center, Rochester, NY: personal communication, 1992).

The main problem with the available instruments is the high false-positive rate. A sizeable number of people and families identified by such techniques as being "at risk for child maltreatment" would never go on to commit abuse. Several authors have emphasized the potential harm associated with mislabelling people as child abusers.<sup>52-56</sup> The stigma of such a label may put people under increased stress and interfere with their ability to function as parents.<sup>55</sup> This may place children at greater risk than before the prediction of abuse.<sup>53</sup>

There are problems with all of these screening approaches. Either the validity has not been adequately evaluated or there is an unacceptable false-positive rate. Screening individuals or families for potential risk of child abuse does not provide a rational basis for narrowing service delivery.<sup>34</sup> This includes attempts by physicians, using clinical judgement alone, to predict who is at risk for committing child maltreatment.<sup>50</sup> Kaufman and Zigler<sup>52</sup> concluded that "accurate prediction of individual cases is not possible" and advocated that "efforts at predicting individual cases of child abuse be abandoned." It has been suggested that the use of such screening procedures be restricted to research studies<sup>35</sup> and that efforts be directed at identifying high-risk communities rather than high-risk individuals.

Overall, the use of screening instruments to identify individuals or families at increased risk of committing child abuse is not warranted and may do

more harm than good. Nevertheless, knowledge of risk indicators for child maltreatment can assist clinicians in making decisions regarding the provision of preventive interventions to individuals and families in high-risk populations. Although screening individuals is not recommended, interventions can be targeted at all members of high-risk communities.

### *Identification of risk indicators*

A risk indicator is a factor associated with an increased likelihood of child maltreatment. The linkage to child maltreatment is not necessarily causal. Researchers are now investigating similarities and differences among various subcategories of abuse. Research into risk indicators has been conducted primarily in the area of physical abuse.<sup>57</sup> More recently, risk indicators of sexual abuse have been investigated (personal observation). Limited information is available about neglect.

Certain risk indicators of physical and sexual abuse are easily identified, whereas others require more careful assessment. The rates of physical abuse and neglect are about the same among boys and girls.<sup>58-60</sup> In contrast, many more girls than boys are reported as victims of sexual abuse.<sup>60</sup> The mean male:female ratio for sexual abuse derived from Finkelhor and Baron's review of eight community surveys was 1:2.5.<sup>61</sup> Although children of all ages are at significant risk for physical abuse, those less than 5 years old and youths between 15 and 17 years old are most likely to "have parents use dangerous forms of violence against them."<sup>62</sup> Children of preschool age are overrepresented in reports of serious physical injury and deaths from abuse.<sup>58,60,62-64</sup> Among girls, those between 10 and 12 years old are at increased risk for sexual abuse.<sup>61</sup>

Risk indicators for committing physical abuse that are easily identified include low socioeconomic status,<sup>58,60,65-69</sup> low maternal age,<sup>2,64,70-72</sup> large family<sup>8,58,64,72</sup> and single-parent family.<sup>58,60,73,74</sup> Markers that are not as easily identified include parents' childhood experience of physical maltreatment,<sup>52,62,75-80</sup> spousal violence,<sup>2,24,62,80,81</sup> social isolation or lack of social support<sup>76,78,82-84</sup> and unplanned pregnancy or negative parental attitude toward pregnancy (including unwanted pregnancy).<sup>48,82,85</sup>

Most risk indicators of sexual abuse are not easily identified without detailed questions.<sup>61</sup> Indicators include living in a family without a natural parent,<sup>13,61,86-89</sup> growing up in a family with poor marital relations between the parents,<sup>61,86,89</sup> presence of a stepfather<sup>61,86-90</sup> and poor child-parent relationship or unhappy family life.<sup>13,61,87-89</sup> This information was based on retrospective accounts from adults who had experienced sexual abuse during childhood. The validity of the data on risk indicators of sexual abuse

has not been as rigorously evaluated as that of the data on risk markers of physical abuse.

Although alcohol abuse and illicit drug use have often been considered risk markers of child maltreatment, the evidence is not clear. Bays<sup>91</sup> reviewed the evidence and emphasized the methodologic problems that exist in this area, including lack of adequate control groups and prospective designs. The evidence points to a possible association between alcoholism and physical abuse; even less is known about the relation between drug use and child abuse. It is tempting to speculate that substance abuse plays a causal role; however, this issue has not yet been adequately investigated.

### *Conclusion*

The use of screening devices for identifying parents or families at risk for child maltreatment is not recommended, because of the high false-positive rates and the harm associated with labelling parents as potential child abusers. Certain risk indicators of physical abuse are easily identified (e.g., low maternal age), whereas others require physicians to ask detailed questions. Most risk indicators of sexual abuse are not easily identified and have been derived from adults looking back on their own childhood.<sup>61</sup> Knowledge of the risk indicators of physical abuse can assist physicians in recommending interventions for the prevention of such abuse in high-risk populations.

### *Recommendation (Table 1)*

There is insufficient evidence to justify the use of questionnaires or other surveys to predict child maltreatment in the general population. However, physicians should know the risk indicators that characterize populations at increased risk for child maltreatment so that effective interventions for such groups can be recommended.

### *Research priorities*

1. Measuring the prevalence rates and distribution of child maltreatment and its subcategories in the general population.

2. Further identifying populations at high risk for physical abuse, neglect, sexual abuse and emotional abuse.

3. Investigating second-stage screening that would do more good than harm in high-risk populations.

## **PREVENTIVE INTERVENTIONS**

Interventions for the prevention of child mal-

treatment can be considered in two categories: (a) perinatal and early childhood hospital support, home visitation and parent training programs and (b) education programs for children, parents and teachers. The perinatal and early childhood programs have generally focused on the prevention of physical abuse and neglect, whereas the education programs have primarily centred on the prevention of sexual abuse or abduction. Two education programs targeted the prevention of both physical and sexual abuse.<sup>99,100</sup> Both types of program often use multiple outcome measures to evaluate their effectiveness. The perinatal and early childhood programs frequently use a spectrum of measures, from those of parenting competence to verified reports of abuse. This update evaluates the perinatal and early childhood programs that used official reports of verified or suspected abuse and neglect, in addition to the following proxy measures of maltreatment: rates of admission to hospital, those of visitation to emergency departments and those of injury (often referred to as accidents in the individual studies). The focus of this article is on reports of abuse and events most closely related to child maltreatment rather than on more remote indices such as parenting attitudes or skills. The effectiveness of education programs is frequently evaluated with the use of measures of knowledge among children, parents or teachers. Less often proxy measures of behaviour or behavioural responses under simulated conditions are used.

The studies reviewed here include only the most methodologically sound for a given intervention (e.g., home visitation). Thus, if a randomized controlled trial and a prospective nonrandomized controlled trial existed for a given intervention, only the randomized trial was considered in Table 1.

## **Perinatal and early childhood programs**

### *Effectiveness*

A randomized controlled trial of intensive pediatric contact plus home visitation by public health nurses and lay health visitors was conducted in Denver by Gray and colleagues.<sup>49,92</sup> One hundred mothers identified as being at risk for abnormal parenting practices were assigned to either the intervention group or the control group. The number of verified reports of child maltreatment and the number of accidents did not differ significantly between the two groups; however, the children of women in the control group were significantly more likely than those of women in the intervention group to require inpatient treatment for serious injuries. The number of central registry reports was greater in the intervention group, although the difference was not signifi-

cant; one possible explanation for this result was increased surveillance among families in the intervention group.<sup>92</sup> This study suffered from inadequate follow-up: outcome was evaluated in only 50% of the

families.<sup>93</sup> Since this study examined a combined intervention of intensive pediatric contact plus home visitation, the lower number of seriously injured children in the intervention group cannot be attri-

Table 1: Summary of manoeuvres, effectiveness, levels of evidence and recommendations for primary prevention of child maltreatment

| Manoeuvre  | Effectiveness   | Level of evidence*                                    | Recommendation*   |
|--|---|---|---|
| Screening procedures (checklists, self-administered questionnaires, standardized interviews or clinical judgement) used to identify people at risk of maltreating children | High false-positive rates, resulting in high risk of mislabelling people as potential child abusers   | Cohort studies <sup>36,38,39,41,48-50,92</sup> (II-2) | Fair evidence to exclude from the periodic health examination (D)   |
| Home visitation during perinatal period through infancy for families of low socioeconomic status, single parenthood or teenaged parenthood                                 | Decreased number of reports of abuse and neglect, emergency department (ED) visits, accidents and hospital admissions   | Randomized controlled trials <sup>93,94</sup> (I)     | Good evidence to include referral for home visitation in periodic health examination (A)  |
| Intensive contact with pediatrician plus home visitation   | No significant reduction in number of reports of abuse and neglect or of accidents; children in intervention group were admitted to hospital because of serious injuries less often than those in control group | Randomized controlled trial <sup>49,92</sup> (I)      | Insufficient evidence to include in or exclude from periodic health examination; referral should be assessed on an individual basis (C) |
| Early or extended postpartum hospital contact or both  | No significant reduction in number of reports of child abuse and neglect, ED visits, accidents or hospital admissions in intervention group   | Randomized controlled trials <sup>95,96</sup> (I)     | Insufficient evidence to include in periodic health examination but may be beneficial for other conditions (C)                          |
| Drop-in centre   | Reduction in number of ED visits but not in number of reports of child abuse and neglect, hospital admissions or admissions because of trauma in intervention group   | Nonrandomized controlled trial <sup>97</sup> (II-1)   | Insufficient evidence to include referral in periodic health examination (C)  |
| Parent training program  | Reports of child abuse and neglect as well as measures of events associated with child maltreatment not examined  | Randomized controlled trial <sup>98</sup> (I)         | Insufficient evidence to include referral in periodic health examination but may be beneficial for other conditions (C)                 |
| Sexual abuse and abduction prevention programs for children  | Improved knowledge of sexual abuse and enhanced awareness of safety skills; no studies have determined effectiveness of programs in reducing incidence of sexual abuse or abduction                             | Randomized controlled trials <sup>99-111</sup> (I)    | Insufficient evidence to include referral in periodic health examination; referral must be made on other grounds (C)                    |

\*For descriptions of the other levels of evidence and classification of recommendations see Appendix 1 in part 1 of the 1992 update (*Can Med Assoc J* 1992; 147: 443).

buted to intensive pediatric contact alone.

Six randomized controlled trials evaluated home visitation as the primary preventive intervention.<sup>93-95,112-114</sup> The two most rigorous studies with respect to sample size, outcome assessment and length of follow-up demonstrated a reduction in the incidence of child maltreatment and outcomes related to abuse and neglect in the intervention groups.<sup>93,94</sup> The study by Olds and associates<sup>93</sup> evaluated home visits by public health nurses made to white primiparous women who were primarily young, single or of low socioeconomic status (85% of the 400 women met at least one of these criteria). The study participants were randomly assigned to one of four groups. Women in the control group received no services during pregnancy; their infants underwent developmental screening at 1 and 2 years of age. A second group received free transportation for prenatal and well-child care in addition to developmental screening. These two groups were combined to form the comparison group after it was determined that the use of well-child care did not differ between the two groups. Of the two treatment groups, one was visited by a nurse during pregnancy (pregnancy-visited group) and the second during pregnancy and after birth until the child's second birthday (infancy-visited group). The babies in the latter group were taken to the emergency department significantly less often in the first ( $p = 0.04$ ) and second ( $p = 0.01$ ) years of life and were seen less frequently for accidents and poisonings in the second year ( $p = 0.03$ ) than the babies in the comparison group. In a subgroup of mothers at highest risk for maltreatment (poor, unmarried teens) 19% of those in the comparison group and 4% of those in the infancy-visited group had instances of verified abuse and neglect ( $p = 0.07$ ). (Although there was a preintervention difference in maternal sense of control between unmarried women in the comparison group and those in the infancy-visited group, this difference was diminished by attrition. Women with a decreased sense of control over their lives in the former group were more likely to remain in the study than such women in the latter group.) The incidence of outcomes in the pregnancy-visited group generally fell between the rates in the infancy-visited group and the comparison group.

In a randomized controlled trial 290 black mothers of low socioeconomic status were assigned to receive either home visits from when the newborn was 7 to 10 days old until 24 months of age or no such intervention.<sup>94</sup> Of the women 78% were single and 23% primiparous. The home visitor was a community woman with support provided through a health care program for children and youths. Children in the intervention group had significantly fewer admissions to hospital ( $p < 0.01$ ) and episodes

of suspected abuse or neglect than those in the control group ( $p < 0.01$ ).<sup>\*</sup> They also had fewer episodes of definite physical abuse and neglect ( $p < 0.01$ ).<sup>\*</sup> The incidence of closed head trauma was lower in the intervention group than in the control group (6.1% v. 11.4%); however, the difference was not significant.

Siegel and colleagues<sup>95</sup> evaluated the effects of three types of intervention: (a) early and extended hospital contact after delivery between women and their newborns, (b) home visits by paraprofessionals during the first 3 months after birth and (c) both early and extended hospital contact and home visits. At follow-up 1 year later the three intervention groups did not differ from the control group in the number of reports of abuse and neglect, the number of hospital admissions or the number of visits to the emergency department. Home visitation did not show any benefit in the prevention of child abuse and neglect; however, the visits continued only during the first 3 months of the infant's life. Olds and Kitzman<sup>115</sup> outlined the optimal characteristics of home visitation programs. They highlighted the need for someone to "visit frequently and long enough to address the systems of factors that influence maternal and child outcomes."

O'Connor and coworkers<sup>96</sup> compared the effects of extended postpartum hospital contact (rooming-in) with routine care. Although the experimental group showed a reduction in parenting inadequacy, no significant differences were found in the number of hospital admissions, accidents, emergency department visits or reports of maltreatment to protective services. The outcome of parenting inadequacy was too broad to draw conclusions about prevention of child maltreatment. Also, the study was weakened because it was only quasi-randomized.

A controlled trial conducted in Bradford, England, involved 312 families considered at risk for child abuse that were not already receiving support from social agencies.<sup>97</sup> The preventive intervention included contact by the project social worker after the mother's discharge from hospital as well as access to a drop-in centre where mothers "could seek help from a health visitor." In addition, the families could contact the project secretary at any time. The proportion of children on the child abuse register did not differ significantly between the intervention and control groups. The authors concluded that there was no evidence that the intervention had prevented child abuse or neglect. Our statistical analysis (Fisher's exact test) of descriptive data provided by the authors revealed that the number of children seen in the emergency department was lower in the interven-

*\*We conducted additional analyses using Fisher's exact test.*

tion group than in the control group ( $p < 0.001$ ). The rate of hospital admissions and admissions because of trauma did not differ significantly between the two groups. This study was weakened because no statement was made about randomization or baseline comparison of groups. Given these problems, no conclusions can be drawn from this trial about prevention of child maltreatment or related outcomes.

One randomized controlled trial<sup>98</sup> and a nonrandomized prospective controlled study<sup>116</sup> evaluated the effectiveness of parent training programs for mothers at risk of committing child abuse. Neither study evaluated reports of abuse or events (e.g., hospital admissions) related to child maltreatment, and so no conclusions can be drawn about the prevention of child abuse and neglect.

The evaluation of perinatal and early childhood programs in this report focuses on specific measures of abuse, including official reports of child maltreatment and rates of hospital admissions, injury and emergency department visits. This focus, especially given the spectrum of outcome measures considered in the studies reviewed, may seem unjustly narrow. The above measures were selected as ones considered most relevant to the evaluation of child maltreatment prevention programs.

Several authors have emphasized the need to include parenting practices and child-rearing methods as outcome variables in the evaluation of such prevention programs.<sup>35,98,114</sup> Improvement in parenting is an important issue, but it is beyond the scope of this report. Although some authors view child maltreatment as one end of the continuum of parenting behaviour,<sup>59,117</sup> one must be cautious in concluding that improved competence in parenting directly results in a reduction in the incidence of child maltreatment. In addition, improvements observed in parent-child interactions under experimental conditions may not accurately reflect events in daily life. As Fink and McCloskey emphasized,<sup>118</sup> programs using such outcome variables as child-rearing measures must demonstrate two things to prove prevention of child maltreatment: improvement in the outcome variable (e.g., dysfunctional parenting) due to the intervention and a reduction in the incidence of child maltreatment due to the improvement. Helfer<sup>119</sup> urged that outcome variables include positive outcomes such as enhanced parent-child interactions, rather than the absence of a negative behaviour. Although these are important outcomes, effectiveness in preventing child maltreatment cannot be ignored in the evaluation of a program whose main goal is to prevent abuse and neglect.

Overall, the evidence regarding intensive pediatric contact,<sup>49,92</sup> home visitation over the short term (3 months or less),<sup>95</sup> early or extended postpartum

hospital contact or both,<sup>95,96</sup> use of a drop-in centre<sup>97</sup> and parent training programs<sup>98,116</sup> remains inconclusive. Several of the studies lacked sufficient statistical power to detect a difference between the groups in the outcomes evaluated in this report.<sup>95-97</sup> The trials by Olds and associates<sup>93</sup> and Hardy and Streett<sup>94</sup> provide evidence that home visitation can prevent child maltreatment or outcomes associated with maltreatment (e.g., injury and emergency room visits) among disadvantaged families characterized by one or more of single parenthood,<sup>93,94</sup> teenaged parenthood<sup>93</sup> and poverty.<sup>93,94</sup> Both studies focused on mothers who were predominantly of low socioeconomic status and single; Olds and associates<sup>93</sup> concentrated on teenaged mothers as well.

### *Manoeuvre*

Home visitation programs vary in the duration of the intervention, the frequency of visitation, the duration of the visit, the time at which the intervention starts, the type of support offered and the qualifications of the interveners. From the studies reviewed, we cannot make specific recommendations along these dimensions for a home visitation program. However, we can offer some general guidelines on the basis of the two most methodologically rigorous trials of home visitation as the main intervention.<sup>93,94</sup> In the first study<sup>93</sup> the home visits, which lasted 1 hour and 15 minutes, were performed by public health nurses, who focused on three main activities: (a) parental support and involvement of family members and friends in child care, (b) parent education regarding child development issues and (c) establishment of links between family members and community services. The group in which home visitation occurred during pregnancy and lasted until the child was 2 years of age resulted in the greatest reduction in the incidence of negative outcomes. The other treatment group, in which home visitation occurred during pregnancy only, had an incidence rate of maltreatment and of other undesirable outcomes that fell between the rates of the comparison group and the infancy-visited group. In the latter group the visits occurred approximately once every 2 weeks during pregnancy, weekly during the 6 weeks after delivery, every 2 weeks until the infants were 4 months old, every 3 weeks until they were 14 months, every 4 weeks until they were 20 months and every 6 weeks until they were 2 years old.

Olds and associates<sup>93</sup> stressed a number of key elements in the home visitation intervention: "The content of the curriculum was structured and yet flexible, and it called for nurses to summon both formal and informal community support." In a review of randomized trials of prenatal and infancy home visitation, Olds and Kitzman<sup>115</sup> emphasized

three characteristics for successful home visitation: (a) the program should be based on an ecologic framework and take into account multiple rather than single factors, (b) the visitor should visit often enough to develop an alliance with the families and (c) the program should be directed toward families at greatest psychosocial disadvantage. The authors also advocated that home visitation services be targeted at primiparas rather than multiparas, with an emphasis on primary prevention.

In the second trial<sup>94</sup> home visitation was provided by a college-educated community woman with supervision from the program's educator and social worker. The sample included mothers of low socioeconomic status aged 18 years or more who were living in the inner city. The first visit took place when the infant was 7 to 10 days old; subsequent visits were scheduled a few weeks before well-child visits at 2, 4, 6, 9, 12, 15, 18, 21 and 24 months. Each visit lasted from 40 to 60 minutes. The curriculum used by the home visitor focused on parent education to develop child care skills. Other activities included parental support, reinforcement of regular clinic attendance and teaching of preventive health care.

The authors stressed three aspects of the program as essential to its success. First, the home visitor had to be flexible in responding to family problems that required immediate attention. Mothers needed assistance in resolving crises (e.g., no heat) before parenting issues could be handled. Second, the home visitor needed to establish a supportive relationship with the family before educating the parents about child care skills. Third, there had to be adequate medical and social service support for the home visitor so that she could function optimally.

No study to date has systematically addressed the issue of qualifications of the intervener.<sup>115</sup> Olds and Kitzman<sup>115</sup> have written convincingly about the benefits of public health nurses as home visitors. In the Baltimore study<sup>94</sup> the community visitor worked effectively with professional backup.

Although the two most rigorous trials of home visitation<sup>93,94</sup> were carried out in the United States, Canadian physicians do have the opportunity to refer families for home visitation by public health nurses. Specific recommendations about the manoeuvre, including length and frequency of the visit and duration of involvement with the family, cannot be made at this time; however, in both studies the authors emphasized the importance of building a supportive relationship between the visitor and the mother over time. Both programs extended until the newborn child reached 2 years of age.

The second report of the US Advisory Board on Child Abuse and Neglect, released in September

1991, called upon the US government to implement a universal voluntary neonatal home visitation system.<sup>120</sup> The evidence reviewed in this Canadian task force report indicates that the effectiveness of home visitation programs in preventing child maltreatment has been shown only in high-risk populations. Although we do not know enough about how to target specific families in need of these services, we should focus on "communities with high rates of poverty, and single and adolescent parenthood."<sup>115</sup>

The issue of labelling a parent as a potential child abuser was addressed earlier in this article. An emphasis on the positive aspects of the services when families are referred for home visitation may alleviate some of the problems associated with mislabelling. Obviously, use of the services must be voluntary.

Knowledge of the curriculum content is important for training. The two most rigorous studies of home visitation mentioned that the visitor was free to tailor the curriculum to suit best the needs of the parents.<sup>93,94</sup> For example, in certain situations a parent may need practical help more than education. Estimates of the time a visitor devotes to each area of the curriculum would be useful input in the design of a home visitation program. A visitor may work with disadvantaged parents in various ways and still maintain the effectiveness of the intervention.

### *Recommendations (Table 1)*

There is good evidence to include in the periodic health examination a referral for home visitation during the perinatal period through infancy to prevent child abuse and neglect for families of low socioeconomic status, single parenthood or teenaged parenthood. There is no good evidence to include or exclude a referral for intensive contact with a pediatrician, early or extended postpartum hospital contact or both, use of a drop-in centre or parent training programs in the prevention of child maltreatment. These interventions may be beneficial for other reasons and should be assessed on an individual basis; whether they reduce the incidence of abuse and neglect remains to be established.

### *Research priorities*

1. Determining for different populations which elements in a home visitation program are most effective in reducing the incidence of child maltreatment or which elements in a flexible curriculum the home visitor should spend most time on.

2. Determining the most effective pretraining qualifications for the staff of a home visitation program.



3. Determining the most effective duration and frequency of visits.

## Education programs

### *Effectiveness*

The second group of interventions comprises primarily school-based programs aimed at preventing sexual abuse or abduction.<sup>101-111,121-124</sup> (Two programs were aimed at preventing physical and sexual abuse.<sup>99,100</sup>) Although the prevention of sexual abuse addresses a condition with a high burden of suffering, physicians do not control access to school-based programs. Nevertheless, parents may consult physicians during the periodic health examination for information about the effectiveness of school-based programs in preventing sexual abuse. Therefore, the effectiveness of such programs has been reviewed here.

In general, programs for the prevention of sexual abuse have been aimed at identifying potentially abusive situations and teaching strategies to prevent sexual abuse or abduction.<sup>125</sup> The target group for most education programs has been children.<sup>99-111,122-124</sup> One study included an education program for parents,<sup>122</sup> and four trials evaluated the effectiveness of preventive education for teachers.<sup>111,121-123</sup> We decided to focus on the studies of programs for children.

The participants ranged in age from preschoolers (3 years) to children in the fifth and sixth grades (11 to 12 years). Several studies included more than one age group, and some were of more than one intervention. Interventions included film or videotape with instruction,<sup>102,103,110</sup> skits with instruction,<sup>99</sup> film with instruction and printed material (e.g., a colouring book),<sup>122,123</sup> behavioural rehearsal and instruction<sup>100,101,103,105-109</sup> and instruction, film or videotape together with behavioural rehearsal.<sup>103,104,110,111,124</sup>

The studies varied in terms of methods. Several were randomized controlled trials, but the quality of randomization varied. In some the randomization was within a classroom,<sup>101-109</sup> whereas in others it was by classrooms within a school.<sup>99,100,110</sup> Still other evaluators randomly assigned entire schools to either the experimental or the control group.<sup>111</sup> Three trials used a nonrandomized controlled design.<sup>122-124</sup>

For outcome assessment, most of the programs used responses to questionnaires. More recently there has been an emphasis on the evaluation of children's responses to hypothetical situations presented in vignettes. In a few studies the simulation of an abduction was used to test the effectiveness of the program.<sup>107-110</sup> Two groups of investigators examined the impact of an education program on disclosures

of sexual abuse during and following the intervention; disclosures in a control group were compared.<sup>111,122,123</sup>

The education programs are aimed at the primary prevention of sexual abuse. All of the outcome measures, however, are proxy ones. As noted by Wurtele,<sup>125</sup> the ultimate goal of the programs is to decrease the rate of occurrence of sexual abuse. Evaluation of reports of sexual abuse in a controlled trial would require a longitudinal study, with many associated methodologic challenges.

Numerous randomized controlled trials have demonstrated that education programs significantly increase knowledge about sexual abuse and enhance awareness of safety skills.<sup>99-111</sup> Studies involving preschool children and those in elementary school generally showed greater gains in knowledge among the older children.<sup>101-103</sup> Others demonstrated learning among preschool children to be equal to or greater than that among children in grades 1 through 3.<sup>124</sup> In two studies<sup>107,108,110</sup> education programs were effective in modifying children's behaviour in response to a simulated abduction by a stranger. In both studies the children were unaware that they were being tested during the simulation. Follow-up studies involving children participating in education programs showed retention of correct behavioural responses under simulated conditions at 6 months<sup>108</sup> and retention of knowledge and skills at 1 year.<sup>111</sup>

Disclosures of sexual abuse by children were used as a measure of the effectiveness of a prevention program in two nonrandomized controlled trials<sup>122,123</sup> and one trial in which randomization was by school.<sup>111</sup> In one of the studies<sup>123</sup> when disclosures were measured before and shortly after training and at follow-up it was difficult to determine whether the reports reflected an impact of the program on the prevention of abuse (primary) or on the disclosure of abuse (secondary). Because of other methodologic problems (e.g., small control group) no conclusions could be drawn. In the study by Hazzard and associates<sup>111</sup> the difference in disclosure rate between schools in the treatment and control groups had not been evaluated.

In addition to measuring change in knowledge and behaviour, several programs have investigated potential negative effects of prevention programs.<sup>107-109,111</sup> In a recent evaluation of a curriculum for sexual abuse prevention, children's emotional and behavioural responses were assessed.<sup>111</sup> The number of parental reports of potential side effects (e.g., increased fear and disobedience) did not differ between the treatment and control groups.

In summary, the interpretation of outcome assessments remains a major dilemma in the prevention programs outlined. Researchers have predominantly used a battery of measures to evaluate

changes in knowledge assuming that increased knowledge leads to changes in behaviour.<sup>125</sup> Appropriate response of a child to a research situation does not guarantee that the child will avoid abduction in real life.<sup>125</sup> Also, the trials in which simulation encounters had been used to assess outcome focused on prevention of abuse by strangers. Although prevention of abduction and sexual abuse by strangers is a high priority, most sexual offences are committed by people known to the child.<sup>12</sup> Problems with disclosure of abuse as an outcome measure have already been discussed.

No study produced evidence that the education of children on abduction and sexual abuse actually reduces the occurrence of such offences. As Wurtele<sup>125</sup> pointed out, "using reporting rates [of sexual abuse] as a dependent measure requires that large numbers of children be followed for a long time period." Before deciding that such an approach is impossible, we should avoid drawing conclusions about program effectiveness based on proxy measures. As emphasized by Rosenberg and Reppucci,<sup>126</sup> when addressing the prevention of physical abuse, one must link "proximal" objectives such as changes in knowledge and behaviour with the more "distal" goal of reducing the incidence of child maltreatment (in this case sexual abuse and abduction). Thus, without actual measures of abuse as outcome indicators, one cannot make firm recommendations about educational interventions for the prevention of sexual abuse and abduction. Firm evidence of the effectiveness of these interventions awaits further study. Evaluation of current evidence depends on judgments about the association between proxy measures and the reduction in the incidence of sexual abuse and abduction.

### *Manoeuvre*

This section is intended only to familiarize the family physician or general practitioner with some of the similarities and differences of the sexual abuse and abduction prevention programs. We do not suggest or recommend any particular curriculum.

Identifying inappropriate touching or advances by an adult and saying "No" were common elements of the education curricula. Some programs, such as the one described by Poche, Yoder and Miltenberger<sup>110</sup> also taught children to report advances of an adult. Others also considered secondary prevention, specifically that a victim must report the abusive episode.<sup>111,122,123</sup>

The frequency and duration of the training sessions varied. A 50-minute presentation was used in one study,<sup>103</sup> whereas 20-minute sessions were used over 8 days in another.<sup>107</sup>

As discussed previously, numerous methods of

instruction were used. Kraizer, Witte and Fryer<sup>124</sup> highlighted the importance of teaching children skills rather than concepts. Wurtele and collaborators<sup>103</sup> found that teaching of behavioural skills with or without a film was more effective than the film alone in improving children's knowledge about sexual abuse.

The interveners serving as educators in the study were most often graduate students who had received in-service training. They ranged in qualification from a community volunteer<sup>123</sup> to a clinical psychologist.<sup>105</sup>

### *Recommendation (Table 1)*

Whether education programs for children reduce the incidence of sexual abuse and abduction remains to be established. Physicians making recommendations regarding such programs in the course of a periodic health examination must do so on other grounds. We can offer no guidelines for the physician except to support the need for empiric studies.

### *Research priorities*

1. Determining whether interventions aimed at the prevention of sexual abuse reduce the incidence of such episodes.
2. Determining the effectiveness of prevention programs in identifying children who have been sexually abused.
3. Further evaluating programs for any negative effects associated with the education programs.

We thank Drs. William R. Beardslee, Leon Eisenberg, Ken M. McConnochie and David L. Olds for their helpful criticisms of earlier drafts of this article.

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### So tough to remember

*He hated me I know  
 I remember sitting alone  
 Without food for a week  
 I'm seven  
 He hits me every day  
 He says it's okay  
 He makes me touch . . .  
 IT.  
 He chopped my hair  
 He killed my dog  
 He smokes  
 He breathes in my face  
 Makes me wear lace  
 He says I look sexy  
 I ask him what it means  
 He says to get into bed  
 Paints my lips red*

*I ask him what it is  
 Colour crayons he says  
 I ask to try  
 and I paint a stripe  
 around his nose  
 He laughs. I've never  
 seen him laugh before  
 He tells me to colour . . .  
 IT.  
 I don't want to. I cry  
 He takes off his belt  
 Lowers his pants  
 First one leg then the other  
 I wake up in cold sweat.*

— Yael