

**The Costs of Child Abuse vs. Child Abuse Prevention:  
A Multi-year Follow-up in Michigan**

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### **Abstract**

A follow-up of a 1992 state-level analysis comparing the costs associated with child maltreatment and its consequences with the cost of providing child maltreatment prevention services was undertaken. Although the costs of child abuse and its prevention have increased in the last decade, the conclusion that prevention is cost-effective remains as true today as it was when the original study was conducted. In 1992 the costs of child abuse in Michigan were estimated at 823 million dollars annually. The costs of prevention programming vary depending on the intensity of the services offered. However in all of the prevention models tested, costs were significantly less than the costs of treating the consequences. **In the re-analysis using 2002 data, costs of child abuse in Michigan were estimated at \$1,827,694,855. The costs of prevention programming vary depending on the intensity of the services offered but are still just a fraction of the child abuse treatment costs.** Cost savings ranged from 96% to 98% depending on the prevention model tested.

## **The Costs of Child Abuse vs. Child Abuse Prevention: A Multi-year Follow-up in Michigan**

In 2005, the economy of the United States seems to be emerging from a recession. However, the impact of this rising economy is uneven across the states. The economic recovery hasn't yet reached Michigan where we still have record-high unemployment rates and large state budget deficits. The economic stresses on families and the reduction in resources that characterize an economic recession continue to put Michigan's children at risk for maltreatment. These stressful times are reminiscent of the late 1980s and early 1990s when economic stresses also put children at risk in Michigan and elsewhere. During the 90's, we were hopeful that the risk level for children might be diminished by the proliferation of groups and agencies that embraced the mission of child abuse prevention. For example, by 1992 all but one of the 50 US states had created agencies specifically for preventing child abuse (National Committee for Prevention of Child Abuse, 1990). These agencies and their umbrella organization, the National Alliance of Children's Trust and Prevention Funds, have an explicit child abuse and neglect prevention mission. In the 20 years since the beginning of Children' Trust Funds (CTF) their mission remains unchanged but their potential has been hampered by significant under-funding.

Despite the lack of adequate funds, Children's Trust and Prevention Funds (CTF) and other prevention-oriented groups still represent a potentially powerful force for the protection of children. With a few notable exceptions, the last 20 years have proven that both state and federal governments are unable or unwilling to fund major new initiatives in social services generally and child abuse prevention specifically. As the contemporary zeitgeist stresses self-help, empowerment, and private sector programs rather than dependence on government to provide prevention services, programs like the Children's Trust Funds continue to face a constant funding struggle. Over the last decade, several of the state CTFs have gone out of business, been folded into treatment agencies, or struggled just to ensure their survival.

This survival struggle prompts an important question. Why is it so difficult to convince policy makers, private funding sources, and politicians that prevention of child abuse should be their highest priority? The original idea behind CTFs, as conceived by Ray Helfer, M.D., was that they would be organizations dedicated to the prevention of child abuse rather than the treatment of its victims or perpetrators. Treatment is critically important, but agencies already exist (public and private) who see treatment as their mission. CTFs see prevention as their exclusive, or at least major, mission.

Of all the possible focuses of prevention, child maltreatment is one of the most compelling. The promise of child maltreatment prevention is that it effects savings in several important areas. The most obvious savings are, of course, in the lives of the children who will not suffer the devastating effects of physical, emotional, and sexual abuse. Beyond their benefit, we accrue both tangible and intangible dividends as a society. We benefit when children grow into their potential as full contributors to the life and fabric of society. Finally, by preventing child abuse we save the staggering amounts of money spent annually dealing with its consequences.

In 1992 the Michigan CTF supported research into the cost effectiveness of prevention compared to the treatment costs associated with child abuse. The purpose of that paper was to detail some of the costs of child maltreatment and some of the benefits of its prevention. It was intended to support and encourage the advocates of prevention and to provide some guidance to policy makers in the area of child abuse prevention. The paper was very well received. It was never published in any professional journal, but it was freely distributed, frequently copied, and widely read. Recently, the Michigan CTF decided to update the information in the original paper. This document is the report of that effort.

The rationale for prevention continues to be compelling. It is common wisdom among prevention advocates that no disease or social problem has ever been brought under control by providing after-the-fact treatment to the victims of the disease or problem. Preventive, proactive,

before-the-fact interventions have, historically, been the only effective way to control or eliminate important diseases. Public health prevention programs to control smallpox and polio are prime examples. In addition to the impressive effectiveness of such preventive interventions, they have been remarkably cost effective--often costing only a small fraction of the expense of treatment. This cost effectiveness is captured in the folk saying, "An ounce of prevention is worth a pound of cure." In the 1992 analysis, the cost advantage for prevention came very close to the ounce/pound ration claimed in this adage.

### **Cost-Effectiveness Analyses**

Before beginning this analysis, it is important to define our terms. There are several related and potentially confusing labels for the family of analyses in this area. Here is a brief primer quoted from Albert Woodward (1998).

- "Cost-effectiveness: Cost-effectiveness measures outcome against cost—usually the prevention effect of a program versus no program or, in a more sophisticated context, the prevention effects of two programs against one another, with the dollar costs of the programs being held constant. In other words, a prevention program is cost-effective if it yields more health benefits (or outcomes) than do alternative uses of healthcare resources....
- "Cost-benefit: Costs and benefits, unlike cost-effectiveness, are expressed in terms of dollars. They are expressed as a ratio with both the benefits (the numerator) and the costs (the denominator) in monetary terms. The benefits often have to be assigned or imputed in quantitative money amounts; they are hard to define and hard to measure....
- "Cost-offset: Cost-offset has not been used in prevention research literature. It has been used in a context of treatment costs reduced following treatment intervention." (p. 131)

In 1992, we did some combination of cost-effectiveness and cost-benefit analyses. We tried to convert many of the outcomes into dollar amounts, often by making a number of arguable assumptions. Even at the time it was clear that other assumptions could have been made and defended. Subsequent critiques of the paper have emphasized this fact. However, all the assumptions that undergirded the analyses were presented so that the reader could judge the adequacy of these assumptions for themselves. The choice of pushing the analyses toward the cost-benefit pole of the spectrum was made to increase the usefulness of the document for prevention advocates. It was thought that having a definite figure to refer to, even if it was built upon assumptions, would be appealing and useful to advocates as they tried to persuade potential funders of the financial soundness of their investment.

It was impossible to arrive at a single estimate of each variable necessary for the cost-benefit analyses conducted in 1992 and that remains true today. For example, it is even impossible to determine the true scope of the child abuse problem. There is wide variability in estimates of the incidence of child abuse. For the 1992 paper, the official reports of substantiated child abuse cases, as reported by Michigan's Department of Social Services, were used to measure the child abuse incidence. Having made this choice, we offered the caveat that many factors in addition to the abusive interaction between child and parent influenced the process which results in a substantiated case being declared.

We also struggled with converting the effects of child abuse into costs. Some costs seemed straightforward and directly related to abuse (e.g., hospital costs), while other costs were much less directly tied to abuse (e.g., troubles in school, involvement with the juvenile justice system, increased mental health problems). We recognized that not all abused children evidence such problems and some who do may do so for reasons unrelated to their abusive history. Ignoring these costs was deemed a serious omission from the analysis of the cost of child abuse, yet care was taken not to overestimate the costs involved.

Even the costs of child abuse prevention are difficult to estimate. Prevention programs vary in scope, intensity, and length. Do we compare the costs of abuse to the costs of a typical prevention program or an ideal one? Do we use programs that might be realistically available today or estimate the costs of the prevention program we would offer if we had more money available for prevention? Beyond that, the analysis requires an estimate of prevention effectiveness. Most current preventive interventions are not evaluated in a way that would allow a definitive statement about how many instances of child maltreatment were actually prevented.

In revisiting the original analysis, we were in a position to re-examine some of the original assumptions and methods of the 1992 effort. We decided that the follow-up needed to maintain the same assumptions and methods for two important reasons. First, these assumptions turned out to be as valid now as they were in 1992. That is not to say that one couldn't propose and defend other assumptions – we readily admit that there are a range of equally valid assumptions for most of the areas we examined. Secondly, we wanted the new effort to be comparable to the first, so we could make a statement about how things have changed (or not) in the intervening years.

What follows in the rest of this report is a presentation of (a) the assumptions that guided the data collection, (b) the data from the 1992 report, and (c) the updated, most recent figures available.

### **Costs and Consequences of Child Maltreatment**

*Number of victims:* In Michigan, state social service figures are collected for the fiscal year (October 1st to September 30th). The state social services agency (in Michigan it is called the Family Independence Agency) provided the data in Table 1 that bear on this issue.

**Table 1: Population and abuse data for the state of Michigan, 1992 - 2002**

<b>Variable</b>	<b>1992</b>	<b>2002</b>
State population	9,295,297 (1990 census)	9,938,444 (2000 census)

Total child population	2,458,765 (1990 census)	2,595,767 (2000 census)
Number of substantiated child abuse cases	15,940 (1991)	16,425 (2002)
Number of substantiated child victims of abuse	26,366 (1991)	29,805 (2002)
Number of children in families with open CPS cases	39,452 (1991)	44,598 (2002)

Each substantiated case of child abuse represents a family and often includes more than one child victim. Michigan statistics identify two types of child victims; children for whom abuse has been substantiated and the other children in the home. These children become involved in the PS system because of the abuse to their siblings and because of their own potential to be abused. During 1991 there were 39,452 children involved in the Protective Services (PS) system as a direct result of child maltreatment. In 2002 this number increased to 44,598. With the exception of calculating the medical costs of treating abusive injuries, the number of children in abusive families was used throughout the 1992 paper and that decision was carried forward to 2002. This choice is based on the conviction that the majority of consequences of abuse derive from living in an abusive home environment rather than from the abuse itself.

*Low birthweight babies.* Low birthweight babies are those who weigh less than 2500 grams or 5.5 pounds at birth (Children's Defense Fund, 1990a). In 1992, the cost of a low birthweight baby was between \$14,000 and \$30,000 above the cost of normal birthweight babies (U.S. Congress, Office of Technology Assessment, 1988a; Children's Defense Fund, 1990a). By 2002 that figure had increased to \$54,510 above the cost of a normally weighted child (Healthcare Cost and Utilization Project, 2000). These costs include newborn hospitalization, rehospitalization within the first year, and other health care costs associated with low birthweight (U.S. Congress, Office of Technology Assessment, 1988a). Data on low birthweight babies is given in Table 2.

**Table 2: Low birthweight babies in Michigan, incidence and costs 1992 - 2002**

<b>Variable</b>	<b>1992</b>	<b>2002</b>
Total number of births	153,080 (1990)	136,045 (2000)

Percent of low birthweight babies	7.6% (1989)	8.04% (2000)
Number of low birthweight babies	11,634	10,714
Cost estimates	\$255,949,760	\$584,020,140

*Death due to child abuse and preventable infant mortality.* The costs are hardest to calculate in the case of preventable infant mortality and death due to child abuse. How does one measure the worth of a human life? How does one measure the loss to society of contributions in the arts, sciences, politics, or business that will never be made? These contributions are impossible to quantify in financial terms. However, one way to approach this area is to recognize that people, whatever else they may be, are often wage earners and taxpayers during their lifetimes. Table 3 presents the data to calculate the loss of lifetime tax revenue due to preventable death of children.

**Table 3: Loss of tax revenue to Michigan due to preventable infant death 1992-2002**

<b>Variable</b>	<b>1992</b>	<b>2002</b>
Per capita income	\$17,745	\$27,654
Length of labor force participation	33 years	40 years
State income tax rate	4.6%	4.1%
Number of children dying due to CAN or other preventable causes	1,715 (Daro & McCurdy, 1991)	1,157
Loss of state tax income	\$46,201,865	\$68,081,514

It is clear that not all infant mortality is preventable or the result of poor prenatal care on the part of the mother. Yet there is a definite relationship between the adequacy of the mother's prenatal care and the health of her baby at birth. The high proportion of women who receive either no prenatal care or none until after the sixth month of pregnancy represents one of the most serious health problems facing the nation. Not only do the infants face a higher risk of death and disability, but the risk of maternal morbidity and disability, often from preventable causes, also increased substantially (Children's Defense Fund, 1990b, p. 14).

Although the figures reported in Table 3 represent the loss of tax revenue during a lifetime it can also be interpreted as the per year loss to the state if the rates of tax and infant mortality are fairly stable. That is, while the loss of taxes from a child who died this year will be spread out over the next 6 or 7 decades, this year the state is deprived of tax collections from all children who died during the last 6 or 7 decades. If the tax rate and infant mortality rate are reasonably stable (or change in compensating ways), the per-year loss will approximate the lifetime loss from an annual cohort.

*Medical treatment of injuries due to abuse.* Not all abused children require hospitalization or medical treatment. Michigan's social service records do not provide summary data on this variable. We were able to find national figures that helped us estimate the relevant numbers in Michigan. These data are given in Table 4.

**Table 4: Medical Treatment of Injuries Due to Abuse and Neglect in Michigan, 1992-2002**

<b>Variable</b>	<b>1992</b>	<b>2002</b>
% of abused children requiring hospitalization	3.2% (Daro, 1988)	2.89% (HCUP, CDC, 2000)
Number of children requiring hospitalization	844 X \$5,498 = \$4,640,312	861 X \$14,811 = \$12,752,271
Number of children requiring medical treatment short of hospitalization (5%)	1,973 (5% of children involved with CPS)	2,230 (5% of children involved with CPS)
	1,973 X \$172=\$339,356	2,230 X \$224=\$499,520
Cost of medical treatment	\$4,978,016	\$13,251,791

According to data from Blue Cross/Blue Shield of Michigan, in 1991 the average stay in hospital for Michigan children with injuries or poisonings was 4.5 days and the average cost per child was \$5,498 (Blue Cross/Blue Shield, personal communication, 1992). By 2002, that figure had risen to \$14,811. No statistics were found to estimate the extent of abuse related injuries requiring medical treatment short of hospitalization. It seems conservative to assume that an additional 5% of all children from abusive households would require either medical examinations to aid in the investigation of the abuse referral or outpatient treatment for injuries not serious enough to require hospitalization. Blue Cross/Blue Shield of Michigan paid an average of \$172 dollars for outpatient treatment of injuries and poisonings during 1991 (Blue Cross/Blue Shield, personal communication, 1992). We calculated that figure at \$224 in 2002.

*Special education costs.* Suffering abuse puts children at greater risk for many difficulties throughout their lives. The National Clinical Evaluation Study identified several of these difficulties.

- Approximately 30% of abused children have some type of language or cognitive impairment;
- Over 50% of abused children have socioemotional problems;
- Approximately 14% of abused children exhibit self-mutilative or other self-destructive behavior;

- Over 50% of abused children have difficulty in school, including poor attendance and misconduct;
- Over 22% of abused children have a learning disorder (Daro, 1988, p. 154)

With these figures in mind, it is estimated that one quarter of all children from abusive households will receive some special education services for at least one year between kindergarten and twelfth grade. In 1991 we estimated that school-based special education services cost approximately \$655 per child annually (Daro, 1988, p. 154). Based upon this figure and the rate of inflation in the last decade, we estimate that in 2000 these same services would cost \$830 per child annually. The data relevant to these costs are in Table 5.

**Table 5: Special Education costs due to Child Abuse and Neglect in Michigan: 1992 - 2002**

<b>Variable</b>	<b>1992</b>	<b>2002</b>
Number of children requiring Special Education Services	9,863	24,910  Center for the Study of Social Policy (Kids Count, 2002) reported a total of 172,984 children living in abusive households. Of which 14.4% have participated in special education services. Or a total of $172,984 \times .144 = 24,910$ children
Cost per child annually	\$655	\$830
Costs for Special Education	\$6,460,265	\$20,675,047

*Protective Service costs.* Each report of suspected child abuse needs to be investigated and substantiated cases need treatment. These tasks fall to the Protective Service division of the state department called (in 1992) the Michigan Department of Social Services or (in 2002) Michigan Family Independence Agency. By consulting the legislative appropriations bill we

determined that **the state expenditures for the Protective Services division were \$37,900,000 in 1991 and \$55,060,686 in 2000.**

**Table 6: Special Education costs due to Child Abuse and Neglect in Michigan: 1992 - 2002**

<b>Variable</b>	<b>1992</b>	<b>2002</b>
State expenditures for the Protective Services division	\$37,900,00	\$55,060,686

*Foster care costs.* Not all abused children are placed in foster care. Daro (1988) cites a figure from the American Association for Protecting Children that only 18% of abused children are actually removed, even temporarily, from their home. Herrenkohl and Herrenkohl (1981) report that in their research with 1,118 children from abusive homes 45 percent of the children spent time in foster placement. We do not have the figures for Michigan for either of our two time periods, so we chose to apply Daro's more conservative estimate of 18%. In 1992 we used Daro's 1988 data that the average stay within the foster care system for these children was 7.68 months. For 2002 we obtained more accurate figures on the actual length of stay in foster care in Michigan and used that. The abuse-related foster care costs come from the Michigan Department of Social Services (1991) and are presented in Table 7.

**Table 7: Foster care costs due to child abuse and neglect in Michigan: 1992 - 2002**

<b>Variable</b>	<b>1992</b>	<b>2002</b>
Cost per child per month	\$1,347	\$1,758
Number of abused children requiring foster care (18%)	7,101	8,028
Average length of stay in foster care (months)	7.68	33 months (based on AFCAR Reports #8, March 2003 for 2001 data)
Abuse related foster care costs	\$73,459,561	Total= \$465,736,392

*Juvenile justice system.* The relationship between child abuse and later criminal activity has been well publicized. In some studies, nearly 80% of all incarcerated juvenile offenders

report a history of child abuse or neglect. However, that does not mean that 80% of all maltreated children will go on to be involved with the legal system. Indeed, the majority of abused children will never be involved in criminal activity. McCord (1983) studied the long term consequences of child abuse and neglect and found that approximately 20% of abused children were convicted for serious juvenile crime such as theft, auto theft, breaking and entering, burglary, or assault. Lewis et al. (1989) also concluded that 20% was a reasonable figure to use after a review of the relevant literature.

It is difficult to calculate the cost of this involvement. There are at least three different systems that are involved with juvenile crime: the police, the courts, and corrections. We were unable to obtain abuse related cost estimates for either the police or the courts. However, we were able to determine that in 1992 it costs \$172.51 per day to incarcerate a youth in Michigan's corrections system (Department of Social Services, 1992). Since similar figures were not available for 2002, we adjusted the 1992 figures for the rate of inflation over the past decade. During 1991, the average length of incarceration in juvenile residential facilities was 15 months. Since we could not update this figure for 2002, we assumed that the average length of incarceration in 2002 remained unchanged. Given that changes in the law in the past decade typically had the effect of increasing the length of prison sentences, we feel that this is a conservative estimate. The abuse related costs of juvenile incarceration are presented in Table 8.

**Table 8: Costs of abuse related juvenile incarceration in Michigan, 1992 - 2002**

<b>Variable</b>	<b>1992</b>	<b>2002</b>
Number of children involved with juvenile justice system (20%)	39,452 X .20 = 7,890	44,598 X .20 = 8,920
Number of children incarcerated (33% of involved children)	7,890 X .33 = 2,630	8,920 X .33 = 2,973
Costs per day	\$172.51	\$225
Cost Per Year	\$62,966	\$82,156
Average length of stay	15 months	15 months
Average Cost per Length of stay	\$78,707.69	\$102,695
Abuse related costs per year	\$207,011,712	\$305,333,028

*Adult criminality.* It gets more difficult to trace a direct causal path between child abuse and its consequences as the time since abuse increases. Yet we know that child abuse can--and does--have life-long effects. One of those effects is a higher risk for adult criminality. During the 1970's several studies were conducted examining the relationship between juvenile delinquency and later adult incarceration (summarized by Loeber & Stouthamer-Loeber, 1987, Table 12.9). Each study found a slightly different rate, but on average 25.3% of juvenile offenders are later incarcerated as adults. Table 9 gives the costs associated with adult criminality. Note that these costs do not include any incarcerated perpetrators of abuse.

**Table 9: Abuse related costs of adult criminality in Michigan, 1992 - 2002**

<b>Variable</b>	<b>1992</b>	<b>2002</b>
Number of abuse victims likely to be incarcerated for adult criminality	1,996	2,257
Annual cost of adult incarceration	\$25,000	\$32,619
Average length of sentence	3.5 years	3.5 years
Abuse relate adult incarceration costs	\$174,650,000	\$257,673,791

*Psychological problems.* The psychological effects of child abuse can be severe and long lasting. In her forty year follow-up of abused boys, McCord (1983) found that, "Among the 97 neglected or abused children, 44 had become criminal, alcoholic, mentally ill, or had died before reaching age 35" (p. 269). Maltreated children are routinely found to have poorer psychosocial adjustment than children from non-maltreating homes (Lamphear, 1986). Although there is ample documentation that child maltreatment is associated with higher levels of psychological maladjustment, there are very few studies that examine formal help seeking from the mental health system among maltreatment victims. For example, a study by Scott (1992) found that victims of childhood sexual abuse were nearly four times as likely to develop an adult psychiatric disorder than were children who had not been sexually abused, but there were no data regarding the formal treatment of these disorders.

In the absence of any statistics to estimate how many children from abusive homes will need psychological services as children or seek such services as adults, very conservative assumptions were made. It was assumed that one percent of these children will require inpatient psychiatric hospitalization during their lifetime as a direct result of growing up in an abusive environment, while five percent will receive outpatient therapy for these same reasons. The duration of outpatient treatment was assumed to be 20 sessions--a common limit of insurance coverage for mental health treatment. The average duration of inpatient treatment for patients in Michigan's public mental health hospitals was 110 days in 1992 (Michigan Department of Mental Health, 1992). This average included both child and adult inpatients and is therefore an underestimate for the length of hospitalization for children, since they tend to have longer hospitalizations than adults. We used these same assumptions for calculating the 2002 costs. These costs are given in Table 10.

**Table 10: Abuse related psychological treatment in Michigan, 1992 - 2002**

<b>Variable</b>	<b>1992</b>	<b>2002</b>
Number needing outpatient psychological treatment (5%)	1,973	2,230
Number needing inpatient psychological treatment (1%)	395	446
Average cost of outpatient treatment (20 sessions)	\$1,500 $\$1,500 * 1,973 = \$2,958,900$	\$1,960 $\$1,960 * 2,230 = \$4,370,589$
Average cost of inpatient treatment (110 days)	$\$330 * 110 = \$36,300$ $\$36,300 * 395 = \$14,321,076$	$\$431 * 110 = \$47,410$ $\$47,410 * 446 = \$21,143,840$
Abuse related costs for psychological treatment	$\$2,958,900 + \$14,321,076 =$ $\$17,279,976$	$\$21,143,840 + \$4,370,589 =$ $\$25,514,429$

*Total costs.* Table 11 provides a summary and total of the costs outlined above.

**Table 11: Total abuse related costs in Michigan, 1992 - 2002**

<b>Variable</b>	<b>1992</b>	<b>2002</b>
Low birthweight	\$255,949,760	\$584,020,140
Loss of state tax income	\$46,201,865	\$68,081,514
Cost of medical treatment	\$4,978,016	\$13,251,791

Costs for special education	\$6,460,265	\$20,675,047
Protective Services	\$37,900,000	\$55,060,686
Foster care costs	\$73,459,561	\$465,736,392
Juvenile justice	\$207,011,712	\$305,333,028
Adult criminality	\$174,650,000	\$257,673,791
Psychological treatment	\$17,279,976	\$25,514,429
<b>Total abuse-related costs</b>	<b>\$823,891,155</b>	<b>\$1,795,346,818</b>

This money comes from a variety of sources, including state coffers, private insurance companies, and personal funds. Regardless of where it comes from, this money could be saved or put to other uses if adequate prenatal care could be provided and child abuse could be prevented. We now turn to the prevention side of the cost-benefit equation.

### **Costs and Effectiveness of Prevention**

Preventive intervention programs in the area of child abuse and neglect vary in both content and delivery modes. However, this variety can be organized into four generic types of interventions: public awareness campaigns, family home visitor programs, parent education programs, and interventions designed to make children less vulnerable to abuse.

- **Public awareness campaigns** are designed to educate entire populations about child abuse and neglect. They include such things as: public service announcements over TV and radio, billboards, mass distribution of brochures or other educational material, and working with professional groups to change the way they think about and react to opportunities for prevention.
- **Family home visitor programs** bring a well-planned intervention to the families who need it. Such programs tend to emphasize outreach and seem particularly well-suited to families who might be unwilling or unable to participate in more formally organized services. These programs usually have some combination of educational, supportive, or

empowering goals for the families they serve. Home visitor programs may involve only a few visits or may last for multiple years.

- **Parent education programs** are often organized in an “academic” way, with planned “lessons” delivered to individuals or small groups. These programs have definite educational goals in areas such as pregnancy and delivery, child growth and development, or parenting skills. These programs range from one session to programs that go on for years with very elaborate curricula. Usually, the program recipient comes to a program site rather than the program being delivered in the family's home.
- **Child interventions** attempt to make children less vulnerable targets for abuse. Sexual abuse prevention programs that teach children self-protective skills are the most popular kind of program in this category.

Within each category of program there may be significant variation in both style and content. However, for the purposes of this paper this categorization will make a cost accounting possible. Data from programs funded by Michigan's Children's Trust Fund (MCTF) during the years 1991 and 2004 were used to determine the cost of prevention. During these years MCTF funded programs in two of the four categories--family home visitor and parent education interventions.

The absence of public awareness campaigns in this analysis is not entirely unfortunate. Public awareness campaigns need to be treated differently from other preventive interventions because they paradoxically raise the rate of child abuse and neglect reports. To the degree that these programs are effective in making child maltreatment salient to the general population and publicize appropriate reporting behavior, the numbers of child maltreatment reports will

increase. We understand this to be a change in the likelihood of reporting an abusive situation, not a true increase in the actual incidence of abuse. However, if our outcome measure is a change in the official rate of reporting, public awareness campaigns often work in the opposite way expected.

As you might expect, there was overlap in the "per unit" cost of the other two types of programs. On average, however, the family home visitor programs were more expensive (\$324 per family, 1990-1991 MCTF costs) than parent education programs (\$253 per family, 1990-1991 MCTF costs). These figures represent only part of the cost of delivering these services. MCTF requires grant recipients match the MCTF grant with local funds and in-kind donations. Thus in 1991, the total (per participant) costs for these programs were; \$950 for home visitor programs and \$473 for parent education programs. In 2002 the costs were; \$1,238 for home visitor programs and \$617 for parent education programs.

The evaluation of program effectiveness in the area of child maltreatment prevention often involves the measurement of some short-term changes in program participants rather than the direct measurement of changes in child abuse incidence. These short-term changes are in areas that mediate the occurrence of child maltreatment. For example, since some cohorts of abusive parents are socially isolated (Oates et al., 1979), programs often aim to increase parental involvement in their social networks. Increased involvement is believed to reduce the likelihood of future child maltreatment. Similarly, since some abusive parents have been shown to be deficient in their knowledge of child development (Dubowitz, 1986), many prevention programs aim to increase such knowledge in the hope of reducing abusive risk.

Evaluations such as these are critically important. They inform program staff and help them design effective programs to reach their short-term goals. They also help in the quest to

understand the causes of child abuse. In their meta-analysis of intervention programs, Macleod and Nelson (2000) found that programs are more effective (i.e., larger effect sizes) when the outcomes are “family wellness” measures and less effective when the outcomes are “verified or proxy measures of child maltreatment.” (p. 1141). However, as helpful as these evaluations are, they are not a substitute for evaluations that actually demonstrate the impact a program has on the incidence of child maltreatment. To complete the cost-benefit analysis of prevention programs it is necessary to judge a program's effectiveness in this way.

Unfortunately, very few experimental evaluations of MCTF-funded prevention programs have been carried out. One Michigan program that has been evaluated in this way was the Healthy Families program of Oakland County. In 1999, an evaluation of the program looked at the impact on the incidence of child abuse and neglect. The study (Schellenbach & Pernice, 1999) found that the incidence rate of abuse and neglect over a five-year period was less than 2% for program participants and 14% for control families; a reduction of 85%.

Similar studies have been conducted on Healthy Families programs in other states. The most recent such study to be published evaluated the Hawaii Healthy Start Program (Duggan et al., 2004) and found that the program was modestly successful in reducing self-reported neglect, but was not able to demonstrate any reduction in child abuse rates. In 2003, the Centers for Disease Control and Prevention (Hahn et al., 2003) reviewed 22 studies that “evaluated the effects of early childhood home visitation on child maltreatment.” In order to be included in this review, studies had to meet several criteria, including “compare outcomes in groups of persons exposed to the intervention with outcomes in groups of persons not exposed or less exposed to the intervention (whether the comparison was concurrent between groups or before-and-after

within the same group).” (Hahn et al., 2003, p. 4). These authors found that the average program achieved a 40% reduction in the amount of child abuse and neglect.

A variety of other studies have also evaluated the effectiveness of child abuse and neglect prevention programs and found very positive results. MacLeod and Nelson (2000) listed 13 programs in their meta-analysis of prevention programs that used a measure of child maltreatment as an outcome variable. The effect sizes for these programs ranged from .518 to -.030, with an average weighted effect size of .256. David Olds and his colleagues (Olds et al., 1986; 1997) evaluated the long-term effects of a home visiting program using nurses in Elmira, NY. They found that by the time the child was age 15, child abuse or neglect in the intervention group was only 54% of the rate in the control group – a reduction of 46%. Reynolds and Robertson (2003) evaluated the Child-Parent Center in Chicago and found that only 5% of the children enrolled in the program were victims of child maltreatment compared to 10.5% of the children in the control group a reduction of 52%. DePanfilis (2002) reports on the Family Connections program and notes that indicated reports of child abuse and neglect were made for 38.3% of program participants before the program started, but only 3.6% in the six months after the program finished. This represents a decrease of 90% from before to after program participation.

Other evaluations of preventive interventions have not been as positive as these. In reviewing this literature, Daro and Donnelly (2002) conclude that, “It is not clear, however, that programs are achieving sustained change with the majority of families they serve.” (p. 737). After a similar review, Richard Gelles concluded in 2000 that “the one commonality of the 78 evaluations of child abuse and neglect prevention and treatment programs was, in scientific terms, a failure to reject the null hypothesis.” (p. 15). Finkelhor, Asdigian, and Dziuba-

Leatherman (1995) investigated the efficacy of programs that teach children to protect themselves and avoid victimization. They concluded that these school-based programs had “mixed, small but overall positive effects.” (p. 141) However, these programs had the unfortunate side effect of increasing the seriousness of the injuries sustained during sexual assaults. Mark Chaffin (2004) surveys the literature on Healthy Families evaluations and thinks that the data are “discouraging” and that it might be time to “rethink” this program.

What are we to make of this mixed picture of evaluations? Certainly it would be safe to conclude that child abuse prevention programs are very variable in their effects. Some programs seem to be very powerful; others seem to have very little effect. It may be of small comfort to note that very few seem harmful to their participants. In conducting a cost analysis of prevention programs we must come up with some estimate of their effectiveness or at least a range of effectiveness. Based on the brief review above, it is clear there is no definitive answer to the effectiveness question yet. However, let’s assume that, with adequate funding, we could take one of the programs that has some indication of effectiveness and go to scale with it. Let’s also assume that the replication would not be quite as effective as the original demonstration. Although we could justify using a figure of 40 – 50% reduction in abuse rates, let’s decide to be conservative and assume that we could reduce child abuse and neglect rates by only 20%. Would such a program still be cost effective?

The Michigan Department of Public Health (1992) reported there were 60,626 live births to first time mothers in Michigan during 1990. In 2002 that number had dropped to 52,647. This group is an ideal target for a comprehensive child abuse prevention program for two reasons. First, these parents are usually very receptive to parenting interventions at this time (Helfer, Bristor, Cullen, & Wilson, 1987) and, second, by serving all new parents, one eventually

reaches the entire population of families with children. To offer a comprehensive parent education program to every family having its first baby in the state of Michigan would have cost \$28.67 million in 1992 and \$32.49 million in 2002. To offer a home visitor program to these same families would have cost \$57.59 million in 1992 and \$65.26 million in 2002.

### **The Cost-Benefit Analysis**

The 1992 and 2002 costs of child maltreatment and some of its consequences have been presented, as have the costs of prevention programs. In 1992, the costs of the two types of prevention efforts, home visitor and parent education programs were, respectively, 3.5% and 7.0% of the 823 million dollars estimated earlier as the cost of child abuse. In 2002, those programs would have cost just 1.8% and 3.6% of the cost of treating the consequences of child abuse and neglect. In 1992 we calculated that it would cost approximately \$43.13 million (i.e., 5.24% of the cost of abuse) to deliver a hybrid prevention program, where every Michigan family having their first child received one of these two services for a cost intermediate between the two individual programs. In 2002 this hybrid program would cost \$48.87 million dollars annually (i.e., 2.7% of the cost of abuse).

It's clear from 20 years of evaluation data that even the most effective prevention program will not reduce the incidence of child abuse to zero. However, if current programs can reduce child maltreatment by 20% on average, figures presented in this paper show that prevention is extremely cost effective.

The cost benefit analysis presented above represents Michigan's experience. Other states may spend more (or less) on these types of prevention programs. Yet even more expensive programs could still be very cost effective compared to the costs of treating the consequences of child maltreatment.

The case for prevention is persuasive. Not only is it the humane approach, it is the financially responsible approach. Programs designed to prevent child maltreatment serve society in several ways: they build stronger, healthier children; they reduce the burdens on state services such as education, law enforcement, corrections, and mental health; and they free money for more life-enhancing projects. An ounce of prevention truly is worth a pound of cure.

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