

Chapter 9

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*Insufficient evidence means that we were not able to determine whether or not the intervention works.

The Task Force approved the recommendations in this chapter in 2001–2002. The research on which the findings are based was conducted prior to December 2001. Findings on home visitation and firearms laws have been published in the MMWR Recommendations and Reports series [2003:52(RR-14):1–20] and findings on therapeutic foster care have also been published [2004:53(RR- 10):1–8]. Expanded reports on the findings summarized in this chapter are being submitted to the American Journal of Preventive Medicine for publication in a special supplement.

Reducing violence-related injury and death is a major goal of public health. Violence-related injuries and deaths can result from both interpersonal violence and suicidal behavior. The consequences of violence also make it an important public health concern. Among people of all ages, 20,308 deaths from homicide and 30,622 deaths from suicide were reported in 2001.¹ Although interpersonal violence has declined substantially since the mid-1990s, in 2002 there were 2.3 incidents of violent crime (assault, robbery, and rape, but not murder²) for every 100 people in the United States 12 years of age and older.

Violent crimes by and against juveniles (people under 18 years of age) are a major focus of our systematic reviews of violence prevention. Over the past 25 years, juveniles have been involved as offenders in at least 25% of serious violent victimizations.³ Rates of arrest for violent crimes peak in the late teen years.³ In a survey, victims estimated that more than one-third of the perpetrators of violent crime were 20 years of age or younger.² In 1994, 33% of juvenile homicide victims were killed by a juvenile offender.³

In 2000, 16- to 19-year-olds in the United States were also more likely to be victims of violent crime than any other age group.² Since at least 1976, people between the ages of 18 and 24 years have experienced the highest rates of homicide.³ Youth under the age of 15 years in the United States are five times as likely to be murdered as are their counterparts in 25 other industrialized nations combined.⁴ In 1999, 4.2% of juveniles were reported to be victims of maltreatment (abuse or neglect).⁵ Violent victimization of women, including threats of rape and sexual assault, is highest among women 16–19 years of age.²

Rates of suicide also rise substantially during adolescence, reaching a plateau among people aged 35 to 44 years and rising substantially again only after age 74.⁶ The rate of suicide among children under the age of 15 in the United States is twice that of the combination of 25 industrialized nations noted above.⁴

OBJECTIVES AND RECOMMENDATIONS FROM OTHER ADVISORY GROUPS

Home Visitation

In 1991, the U.S. Advisory Board on Child Abuse and Neglect recommended universal home visitation,⁷ but its recommendation was not accepted by the Department of Health and Human Services or implemented by Congress. In contrast to the findings of the Task Force review reported here, some government reviews have found home visitation effective for preventing youth violence. The recent report on *Youth Violence* by the Surgeon General⁸ concludes

that nurse home visitation “has shown significant long-term effects on violence, delinquency, and related risk factors in a number of studies.” The Office of Justice Programs’ review, *Preventing Crime. What Works, What Doesn’t, What’s Promising*,⁹ also gives a high rating to early home visitation by nurses, other professionals, and trained paraprofessionals for preventing crime and its risk factors. The Centers for Disease Control and Prevention (CDC) cites the home visitation approach among the best practices for preventing youth violence.¹⁰ Violence-specific objectives in *Healthy People 2010*¹¹ that might be related to home visitation are included in Table 9–1. (It should be noted that home visitation may also affect health-related outcomes other than violence. As noted, these outcomes are not systematically reviewed here, and corresponding goals and objectives are not included in Table 9–1.)

Other governments have also reviewed home visitation programs. The Canadian Task Force on Preventive Health Care recommends early childhood home visitation programs for preventing child maltreatment in disadvantaged families.¹² It notes that the strongest evidence exists for the nurse-delivered programs (as used in the program by Olds et al.¹³), which start prenatally and continue for two years after the child is born.

Finally, nonprofit organizations have assessed the benefits of home visitation. The Center for the Study and Prevention of Violence recommends nurse home visitation for preventing child abuse and neglect and child violence, among other benefits. It cites the program designed by Olds et al.¹³ as a model “Blueprint” program that meets its highest standards of evidence in terms of experimental design, substantial effect, replication, and sustainability. Similarly, Developmental Research and Programs, Inc., cites several early home visitation programs¹⁴ (including the nurse home visitation program by Olds et al.¹⁵ and the Syracuse Family Development Research Program¹⁶) among its recommended preventive strategies.

Therapeutic Foster Care

The Surgeon General’s 2001 report on *Youth Violence*⁸ recommended therapeutic foster care as a model program for preventing further violence among violent or seriously delinquent adolescents. In contrast to the findings of the Task Force review reported here, the Surgeon General’s 1999 report on *Mental Health*¹⁷ endorsed therapeutic foster care for children with emotional problems without clearly specifying age limits; this report also noted the standards of the Foster Family-Based Treatment Association (www.ffa.org/products.html).

Similarly, the Center for the Study and Prevention of Violence recommends therapeutic foster care as a cost-effective alternative to group or residential treatment, incarceration, or hospitalization for adolescents who have prob-

Table 9-1. Selected *Healthy People 2010*¹¹ Objectives Related to Violence Prevention

<i>Objective</i>	<i>Population</i>	<i>Baseline</i>	<i>2010 Objective</i>
<i>Injury Prevention</i>			
Reduce hospitalization for nonfatal head injuries per 100,000 population (Objective 15-1)	All	60.6 (1998 ^a)	45.0
Reduce hospitalization for nonfatal spinal cord injuries per 100,000 population (15-2)	All	4.5 (1998 ^a)	2.4
Reduce firearm-related deaths per 100,000 population (15-3)	All	11.3 (1998 ^a)	4.1
Reduce the proportion of persons living in homes with firearms that are loaded and unlocked (15-4)	All	19% (1998 ^a)	16%
Reduce nonfatal firearm-related injuries per 100,000 population (15-5)	All	24.0 (1997 ^a)	8.6
Reduce nonfatal poisonings per 100,000 population (15-7)	All	348.4 (1997 ^a)	292
Reduce deaths caused by poisoning per 100,000 population (15-8)	All	6.8 (1998 ^a)	1.5
Reduce deaths caused by suffocation per 100,000 population (15-9)	All	4.1 (1998 ^a)	3.0
Reduce hospital emergency department visits per 1,000 population (15-12)	All	131 (1997 ^a)	126
<i>Unintentional Injury Prevention</i>			
Reduce deaths caused by unintentional injuries per 100,000 population (15-13)	All	35.0 (1998 ^a)	17.5
Reduce nonfatal unintentional injuries (15-14)	All	Developmental	
<i>Violence and Abuse Prevention</i>			
Reduce homicides per 100,000 population (15-32)	All	6.5 (1998 ^a)	3.0
Reduce maltreatment of children per 1000 children aged <18 years (15-33a)	Children	12.9 ^b (1998)	10.3
Reduce child maltreatment fatalities per 100,000 children aged <18 years (15-33b)	Children	1.6 ^b (1998)	1.4
Reduce the rate of physical assault by current or former intimate partners per 1000 persons aged ≥12 years (15-34)	Adolescents/ adults	4.4 (1998)	3.3
Reduce the annual rate of rape or attempted rape per 1000 persons aged ≥12 years (15-35)	Adolescents/ adults	0.8 (1998)	0.7
Reduce sexual assault other than rape per 1000 persons aged ≥12 years (15-36)	Adolescents/ adults	0.6 (1998)	0.4

Table 9–1. *Continued*

Objective	Population	Baseline	2010 Objective
Reduce physical assaults per 1000 persons aged ≥ 12 years (15–37)	Adolescents/ adults	31.1 (1998)	13.6
Reduce physical fighting among adolescents (students in grades 9 through 12) fighting during the previous 12 months) (15–38)	Adolescents	36% (1999)	32%
Reduce weapon carrying by adolescents on school property (students in grades 9 through 12 carrying during the past 30 days) (15–39)	Adolescents	6.9% (1999)	4.9%
<i>Mental Health and Mental Disorders</i>			
Reduce the suicide rate per 100,000 population (18–1)	All	11.3 (1998 ^a)	5.0
Reduce the rate of suicide attempts by adolescents (12-month average) among adolescents in grades 9 through 12 (18–2)	Adolescents	2.6% (1999)	1.0%

^aAge adjusted to year 2000 standard population.

^bNote that objective 15–33a is per 1000 children under 18 years of age, whereas objective 15–33b is per 100,000 children under 18 years of age. Comparable objectives would be reduction of child maltreatment to 1290 per 100,000 children under 18 years of age and reduction of child maltreatment fatalities to 1.6 per 100,000.

lems with chronic antisocial behavior, emotional disturbance, and delinquency.¹⁸ The Center also cites evidence of the effectiveness of therapeutic foster care for younger children. The Center recommends the program designed by Chamberlain¹⁹ as a model “Blueprint” program that meets its highest standards of evaluation evidence.

Violence-specific objectives in *Healthy People 2010*¹¹ that might be related to therapeutic foster care are included in Table 9–1.

Firearms Laws

Firearms-specific objectives in *Healthy People 2010*¹¹ are included in Table 9–1.

METHODS

Methods used for the reviews are summarized in Chapter 10. Specific methods used in the systematic reviews of violence prevention have been described elsewhere^{20–22} and are available at www.thecommunityguide.org/violence.

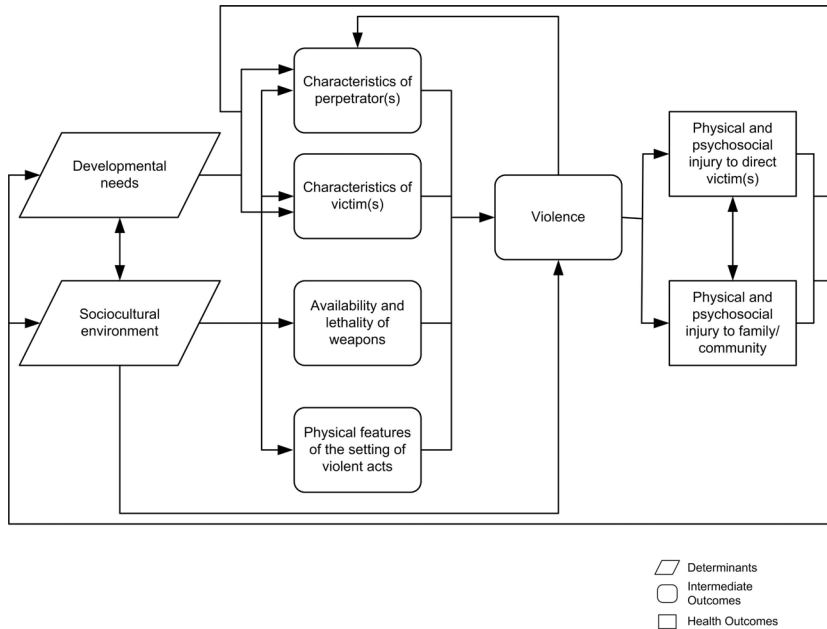


Figure 9–1. Logic framework illustrating the conceptual approach used in systematic reviews of violence prevention.

The logic framework depicting the conceptual approach used in these reviews is presented in Figure 9–1.

ECONOMIC EFFICIENCY

A systematic review of available economic evaluations was conducted for the recommended interventions, and a summary of each review is presented with the related intervention. The methods used to conduct these economics reviews are summarized in Chapter 11.

RECOMMENDATIONS AND FINDINGS

The three sections that follow present a summary of the findings of the systematic reviews conducted to determine the effectiveness of the selected interventions in preventing violence.

Early Childhood Home Visitation

In early childhood home visitation programs, parents and children are visited at home during the child’s first two years of life by trained personnel who

provide some combination of information, support, or training about child health, development, and care. Home visitation has been used to meet a wide range of objectives, including improvement of the home environment, family development, and the prevention of child behavior problems. Early childhood home visitation has been used to address a variety of public health goals for both visited children and their parents, including violence reduction, other health outcomes (e.g., rates of vaccination) and health-related outcomes such as educational achievement, problem-solving skills, and greater access to resources (e.g., social services, education, and employment opportunities).^{23,24}

Our systematic review of the effectiveness of early childhood home visitation for preventing violence focused on violence by and against juveniles. We defined home visitation as a program that includes visitation of parent(s) and child(ren) in their home by trained personnel who convey information about child health, development, and care; offer support; provide training; or deliver any combination of these services. Visitors can be nurses, social workers, other professionals, or paraprofessionals (people with no formal training, who are trained specifically by and for the home visitation program; they may be community peers). For purposes of this review, visits had to occur during at least part of the child's first two years of life, but could begin during pregnancy and continue after the child's second birthday. Although we were prepared to review programs in which participation in home visitation programs was either voluntary or mandated (e.g., by a court), we found no program in which participation was mandated.

In the United States, home visitation programs have generally been offered to specific groups, such as low-income; minority; young; less educated; first-time mothers; substance abusers; children at risk of abuse or neglect; and low-birthweight, premature, disabled, or developmentally compromised infants. (Home visitation programs are common in Europe and are most often universal [i.e., made available to all childbearing families, regardless of the estimated risk of child-related health or social problems].²⁵) Visitation programs are often *two-generational*,²⁶ addressing problems and introducing interventions of mutual benefit to parents and children. Programs may include (but are not limited to) one or more of the following components: training of parent(s) on prenatal and infant care; training on parenting to prevent child abuse and neglect; developmental interaction with infants and toddlers; family planning assistance; development of problem-solving and life skills; educational and work opportunities; and linkage with community services. Home visitation programs may be complemented by the provision of day care; parent group meetings for support, instruction, or both; advocacy; transportation; or other services. When such services are provided in addition to home visitation, we refer to the program as *multicomponent*.

We reviewed studies of home visitation that assessed any of four violent outcomes, whether or not violence was the primary target or outcome of the visitation.

1. Violence against the child, specifically maltreatment (which includes all forms of child abuse and neglect).
2. Intimate partner violence.
3. Violence by the visited parent, other than child maltreatment or intimate partner violence.
4. Violence by the visited child, against self or others, including violence in school, delinquency, crime, or other observed or reported violent behavior.

Early Childhood Home Visitation to Prevent Violence Against the Child (Maltreatment [Abuse or Neglect]): Recommended (Strong Evidence of Effectiveness)

In 1999, 4.2% of children under the age of 18 in the United States were reported to be victims of maltreatment. One-third of those reports were investigated by child protective services and were not confirmed. Further complicating this picture, national survey data indicate that cases of maltreatment are substantially underreported.²⁷⁻²⁹ Child maltreatment can include physical, sexual, or emotional abuse; physical, emotional, or educational neglect; or any combination. Not only is child maltreatment a form of violence in and of itself, but it is associated with adverse consequences among maltreated children, such as early pregnancy, drug abuse, school failure, mental illness, suicidal behavior, and chronic diseases.³⁰⁻³² Although the relationship is not well understood, children who have been physically abused are more likely to perpetrate aggressive behavior and violence later in their lives, even when other risk factors for violent behavior have been ruled out.³³ Abuse and neglect are both associated with poverty and single-parent households; for reasons such as this, many home visitation programs in the United States are directed to poorer, minority, and single-parent families.

Effectiveness

- Early childhood home visitation is effective in reducing child maltreatment by approximately 39%.
- Programs using nurses or mental health workers were more effective than those using paraprofessionals.
- Beneficial effects were found principally in programs lasting two years or longer.

Applicability

- These programs should be applicable to most families at risk, as defined above.

We reviewed evidence about the effects of home visitation on the subsequent maltreatment (abuse or neglect) of visited children. We included studies in the review only if they reported at least one of these outcome measures: reports from child protective services; abuse or neglect reported or observed by parents or others; emergency room visits or hospitalizations for injury or ingestion; reported injury; or out-of-home placement. We looked for but did not find any qualifying studies about other forms of child victimization, such as bullying.

The results of our systematic review are based on 21 studies (with 26 intervention arms, in 20 reports).³⁴⁻⁵³ One additional study (representing one intervention arm) had limitations in the quality of execution and was excluded from the review.⁵⁴

Intervention arms assessed the effects of home visitation on abuse or neglect (reported by child protective services or by home visitors); on rates of injury, trauma, or the ingestion of poison (from records of emergency room visits, other medical or hospital records, or mothers' reports); and on out-of-home placement. Most studies assessed maltreatment, injury, or trauma at the end of the intervention (follow-ups, 10 months to 3 years). One study⁵⁰ assessed abuse and neglect 15 years after the intervention began (i.e., when the children were 15 years of age). Overall, the intervention group had a lower rate of abuse or neglect, injury or trauma, or out-of-home placement than the comparison group (median change -38.9% ; interquartile range, -74.1% to $+24.0\%$), indicating that these programs are effective in reducing child maltreatment.

In investigating the hypothesis that home visitation can reduce or prevent maltreatment, a bias may be encountered. The presence of a home visitor who might observe maltreatment and is legally required to report it may actually increase the reported observations of maltreatment among home-visited children. Adjusting for the presence of this reporting bias tends to strengthen results showing that home visiting decreases child maltreatment.

We found that professional visitors (i.e., nurses and mental health workers) produced more beneficial results than paraprofessionals. We also found that programs that lasted two years or longer tended to show more beneficial results than shorter programs, regardless of the professional status of the visitor.

We looked for, but did not find, any substantial or consistent differences in effect based on randomized versus nonrandomized assignment to treatment group; whether programs were initiated prenatally or postnatally; or whether

program components were home visitation only or home visitation plus additional services such as child care, pediatric care, free transportation, or parent support groups.

These results should be applicable to at-risk families in a variety of settings. All studies were conducted in the United States, except for one in Canada. Most programs targeted people believed to benefit most from such program components as support in parenting and life skills, prenatal care, and case management. Home visitation programs were conducted with teenage parents; single mothers; families of low socioeconomic status (SES); families with very-low-birthweight infants; parents previously investigated for child maltreatment; and parents with alcohol, drug, or mental health problems. No reviewed study assessed the effectiveness of home visitation in preventing violence in the general population.

An analysis of the effects of one program on intimate partner violence⁵⁵ suggests that parental partner violence may hinder the beneficial effects of home visitation on child abuse; therefore, partner violence may need to be addressed before home visitation programs can be effective in reducing child maltreatment in the home.

Other potential benefits were identified in one study.⁵⁰ That study reported consistently beneficial, but statistically nonsignificant, effects for visited mothers, including decreases in the number of subsequent pregnancies (a risk factor for child abuse), in months receiving Aid to Families with Dependent Children (AFDC), in months receiving food stamps, and in problems related to illicit substance use. The study also found a small increase in time employed. Statistically significant results for these outcomes were, however, found only in a subsample (40% of the total sample) that included only single mothers of low SES.

Consequences for the visited children other than violent behavior or victimization were less clear at 15-year follow-up.¹⁵ For example, this study found decreases in the incidence of drug use, in the number of sexual partners, and in the number of long-term school suspensions, but also reported increases in the incidence of alcohol use and in the number of visited children who ever had sex. Among the children of low SES single mothers, home visitation was generally associated with desired results, including a significant reduction in the number of sex partners; nonsignificant reductions in the use of drugs, alcohol, and cigarettes; an increase in the number of short-term suspensions; and a (desirable) decrease in the number of long-term school suspensions.

Other possible beneficial effects of the home visitation programs mentioned in the literature include improved social, emotional, and physical development of visited children; higher rates of vaccination; better access to, and

use of, medical care; improved family planning; improved home environment; and a higher level of education and professional achievement attained by the parents.^{23,24}

We identified one economic evaluation of a home visitation intervention to reduce child abuse and neglect.⁵⁶ This study, carried out in a semi-rural county in upstate New York, evaluated the net benefits of a nurse home visitation program provided to first-time mothers. Of the mothers in the study, 61% were of low SES and 24% were either unmarried or under 19 years of age. Home visits by a registered nurse began before the child was born and lasted until the child reached two years of age. The visits began on a weekly basis; by 20 months after delivery, visits were made every six weeks. Program content included parent education, the strengthening of family support (by encouraging other family members and friends to become involved in the home visit and in child care), and the linking of families with other health and human services. Goals included improvement of the child's health, reduction of child abuse, and improvement of the mother's own life course.

The costs and benefits analyzed for this intervention were limited to government costs and benefits, not those of program participants, the healthcare system, or society at large. Program costs considered were through the child's second birthday and included nurse salaries and fringe benefits; nurse training; part-time secretary; part-time supervisor; taxicab; linked services such as the Women, Infants, and Children (WIC) nutritional supplementation program; supplies; and overhead. The benefits considered were through the child's fourth birthday and included reduced use of government services (i.e., AFDC, Child Protective Services, Food Stamps, and Medicaid) and newly generated tax revenues from mothers returning to work.

Authors reported results for a subsample of low-income mothers as well as for the whole sample. For the low-income subsample, governmental benefits more than offset program costs, for a net benefit to government of \$350.61 per low-income family (adjusted to 1997 dollars). Including benefits attributable only to reduced need for child maltreatment services (3% of total benefits) was not enough to offset program costs in the low-income subsample (i.e., costs exceeded benefits). For the whole sample, governmental costs exceeded benefits, which resulted in a net benefit of -\$3,081 per family (adjusted to 1997 dollars). Benefits attributable to reduced child maltreatment were not specified for the whole sample. Including benefits beyond those of the government, such as averted healthcare costs, productivity losses, and other possible benefits associated with reduced child maltreatment would likely result in greater net benefits.

For the above program, adjusted nurse visitation direct costs—including salaries, fringe benefits, part-time supervisor and secretary, overhead, travel,

and supplies—were estimated to be \$6286 per family in 1997 dollars over the two-year intervention period. In a 1998 follow-up investigation,¹³ program costs were reestimated to be \$7000 per family (in 1997 dollars). This estimate was based on the original study design but was calculated to serve 100 families with four full-time nurse specialists, each taking on no more than 25 cases. In addition to the full-time nurses, the new estimate includes a part-time secretary and nurse supervisor; comprehensive office and program materials, including cell phones; liability insurance; medical supplies; general staff development; and mileage. In most cases, training and technical assistance, including a computer and network fees, were also necessary at program outset (but were not included in the base case analysis). Such start-up costs were estimated to increase program costs to \$8000 per family during the first three years of the program.

Another study with a less intensive intervention (i.e., five visits over 18 months) was conducted at the Hospital of the University of Pennsylvania in Philadelphia.³⁶ Early discharge and home visitation were carried out only if the infant's physical condition and environment met specified criteria (e.g., clinically well, stable maintenance of body temperature, and adequate home care facilities) and if parental consent was given. Program costs of nurse home visitation for very-low-birthweight infants who had been discharged early were estimated and included pre- and post-discharge nurse time, telephone, and travel expenses. Average program costs (adjusted to 1997 dollars) were estimated to be \$958 per family. Infants included in the study were born between October 1982 and December 1984 and received post-discharge follow-up care by either a full-time or part-time specialist with a master's degree in nursing. Pre-discharge visits established a relationship between the nurse and parents to facilitate training and information exchange to prevent abuse and neglect. Post-discharge visits provided further instruction and assessment of both infant and parent well-being. Nurses also contacted the parents by telephone during the first eight weeks after discharge and were on call to address immediate concerns. The large difference between this program cost estimate and that provided by Olds et al.¹³ is most likely due to program duration and frequency of visits as well as additional program costs included in the estimate.

Barriers to implementing home visitation interventions include difficulties in the retention of study participants and program staff.²³ Because home interventions have generally been targeted to families of low SES, in challenging life circumstances with few resources, it is understandable that such families might be overwhelmed with other problems and might lack sustained interest in or ability to commit to regular home visitation; they might also be hard to reach and retain in the program because of frequent life transitions.⁵⁷

Home visiting personnel (especially when paraprofessional lay visitors are used) may be hard to recruit, train, and retain due to low pay and difficult work conditions. It has also been noted that paraprofessional visitors may require more training and supervision than professionals (e.g., nurses).

In conclusion, the Task Force found strong evidence that early childhood home visitation programs are effective in preventing child maltreatment, reducing reported maltreatment by approximately 39%. In addition, programs delivered by professional visitors (nurses or mental health workers) seemed to produce greater effects than those delivered by paraprofessionals. Beneficial results were seen in programs lasting two years or longer, whether delivered by paraprofessionals or by professionals.

***Early Childhood Home Visitation to Prevent Intimate Partner Violence:
Insufficient Evidence to Determine Effectiveness***

Although intimate partner violence victimizes men as well as women in the United States, women are three times more likely than men to be victims.⁵⁸ One out of four women in the United States will be the victim of partner violence: 7.7% will be victims of rape and 22.1% will be victims of other physical assaults.⁵⁸ Home visitation programs have the potential to reduce violence between visited parents by improving parental life skills, strengthening family social support, and facilitating links to community services.

Effectiveness

- We found insufficient evidence to determine the effectiveness of home visitation in reducing intimate partner violence.
- Evidence was insufficient because the only study included in the review did not report a statistically significant effect of the intervention on intimate partner violence.
- Insufficient evidence means that we were not able to determine whether or not the intervention works.

In our systematic review of the evidence of the effect of home visitation on violence between the parents of visited children, we included only studies that measured reported and observed partner victimization or arrests and convictions for partner assault. The results of our review are based on one study,⁵⁹ a 15-year follow-up to the study by Olds et al.¹³ Among the wide range of outcomes examined was the incidence of domestic violence in the families of visited children over the 15-year follow-up period. No significant difference in the incidence of domestic violence between the intervention and control groups was found. This single study provided insufficient evidence to de-

termine whether or not home visitation programs are effective in reducing violence between the parents of visited children.

Because we could not establish the effectiveness of this intervention on partner violence, we did not examine situations where it would be applicable, information about economic efficiency, or possible barriers to implementation.

In conclusion, we found insufficient evidence to determine the effectiveness of home visitation in reducing violence between the parents of visited children, because only a single study qualified for the review and this study failed to find any significant changes.

Early Childhood Home Visitation to Prevent Violence by Visited Parents (Other Than Child Maltreatment or Intimate Partner Violence): Insufficient Evidence to Determine Effectiveness

Some home visitation programs try to reduce violence by visited parents by facilitating the development of parental life skills, strengthening family social support, and facilitating links to community services. We looked at what effects the visits had on the violent behavior of parents of visited children.

Effectiveness

- We found insufficient evidence to determine the effectiveness of home visitation in reducing violence by visited parents.
- Evidence was insufficient because, in the single qualifying study, statistically significant changes were found only in a subsample of the studied population.
- Insufficient evidence means that we were not able to determine whether or not the intervention works.

In our systematic review of the effect of home visitation on parental violence in the visited home (other than child maltreatment and intimate partner violence, addressed separately in this chapter), we included only studies that measured reported and observed violence, arrests or convictions for violent crime (from self-reports or official reports), or general arrests and convictions.

The results of our review are based on one study,⁵⁰ a 15-year follow-up to the Elmira study by Olds et al.⁶⁰ Nearly half of the mothers in the study had been teenagers when home visitation began. The study reported statistically nonsignificant reductions in arrests and convictions for mothers in the intervention group compared with mothers in the control group. However, in a subsample of mothers who were single and of low SES at the time of visitation, the study reported statistically significant reductions in maternal arrests and convictions. Although the findings from this subsample are encouraging,

the single study provides insufficient evidence to determine whether or not home visitation programs are effective in reducing violence by visited parents.

Because we could not establish the effectiveness of this intervention, we did not examine situations where it would be applicable, information about economic efficiency, or possible barriers to implementation.

In conclusion, the Task Force found insufficient evidence to determine the effectiveness of home visitation interventions in preventing parental violence. Although statistically significant changes were found in a subsample of the population in the only study in the review, the findings for the total sample were not statistically significant.

***Early Childhood Home Visitation to Prevent Violence by Visited Children:
Insufficient Evidence to Determine Effectiveness***

Juveniles commit violence at a higher rate than any other age group in the United States.³ Risk factors for chronic violence include low socioeconomic status (SES), abusive parents, and poor parent-child relations, including harsh, lax, or inconsistent discipline. Early childhood home visitation might lead to the reduction of later violence by the visited child by addressing several of these risk factors, including parenting skills and opportunities for parents to improve the conditions of their families.

Effectiveness

- We found insufficient evidence to determine the effectiveness of home visitation in reducing violence by visited children.
- Evidence was insufficient because findings from the small number of available studies were inconsistent.
- Insufficient evidence means that we were not able to determine whether or not the intervention works.

In our systematic review of the effect of home visitation on the later violent behavior of children who were home-visited early in their lives, we included only studies that measured reported and observed violence or violent crime; official records of arrests, convictions, or delinquency; externalizing behavior (in which psychological problems are acted out); and conduct disorder (in which young people violate the basic rights of others or societal norms). Prevention of youth suicide was not included because we found no studies that assessed this outcome.

The findings of our systematic review are based on four studies that reported the effects of home visitation programs on violence by the visited chil-

dren.^{15,16,61,62} One study¹⁵ examined criminal and delinquency outcomes in 15-year-olds whose nurse home visitation began prenatally and continued through the first two years of their lives. Self-reported delinquency (i.e., committing acts that are explicitly violent or have violent connotations [threat of violence or the violation of property and its owners]) was the principal outcome in this study because it referred to self-reported behavior, unaffected by the social processes of arrest or conviction. In the total sample, statistically nonsignificant changes were found in self-reported major delinquent acts and in arrests of subjects as reported by subjects' mothers; a statistically significant decrease was found in self-reported arrests and convictions. Among the children of single mothers of low SES, home visitation was associated with a nonsignificant decrease in major delinquent acts and with significant decreases in self-reported arrests and convictions, as well as arrests reported by the child's mother.

Another study¹⁶ of a multicomponent home visitation program assessed delinquent and violent outcomes when visited children had reached 13–16 years of age. Using probation processing as an indicator of serious crime, the study found a significant reduction in this measure among the intervention group. Further, it appears that the offenses committed by comparison subjects were more serious than those committed by home-visited subjects and that 2 (out of 54) subjects in the comparison group committed violent crimes, whereas none of 65 subjects in the intervention group committed such crimes.

The other two studies reported only externalizing behavior (from the Externalizing subscale of the Child Behavior Checklist⁶³) when the children were five years old⁶² and nine years old.⁶¹ Both studies reported no significant differences between intervention and comparison groups.

Although the number of studies is sufficient to draw a conclusion about the effectiveness of home visitation in preventing later violence by visited children, the inconsistent findings provide insufficient evidence on which to base a recommendation.

Because we could not establish the effectiveness of this intervention, we did not examine situations where it would be applicable, information about economic efficiency, or possible barriers to implementation.

In conclusion, although the number of studies in the review would be sufficient to determine the effectiveness of home visitation in preventing later violence by visited children, the study findings are inconsistent. Two studies found no significant differences in outcomes between intervention and control populations, one study found a beneficial effect, and one had mixed results. Because of these mixed findings, the evidence is insufficient to deter-

mine the effectiveness of home visitation interventions in preventing child violence.

Therapeutic Foster Care

In therapeutic foster care programs, children and adolescents who cannot live at home are placed in homes with foster parents trained to provide a structured environment that teaches social and emotional skills. Program personnel work closely with foster parents and may also collaborate with teachers, probation officers, employers, and others in the youth's environment to ensure pro-social learning and behavior. Program youth are monitored at home, in school, and during leisure activities. Although *therapeutic foster care* is known by many names, 10 common components are:⁶⁴

1. Treating only one or two children in homes of carefully selected substitute (*foster*) families;
2. Low caseloads for each program staff member: responsible for only 5–15 youth and their foster families;
3. Close, treatment-oriented supervision of the foster parents to promote a therapeutic relationship with each child;
4. Providing thorough documentation of treatment services for each child;
5. Recognizing the professional nature of the work of treatment parents through intensive training before and during the child's stay, good pay, and regular performance evaluations;
6. Providing strong support services for treatment parents;
7. Making crisis intervention services readily available;
8. Providing a liaison to the child's school, teachers, and counselors;
9. Providing medical services, including health screening for the foster child; and
10. Coordinating the various aspects of care for each child.

We reviewed studies of the effects of therapeutic foster care on the violent behavior of (1) adolescents with chronic delinquency and (2) children with severe emotional disturbance.

Therapeutic Foster Care for the Reduction of Violence by Chronically Delinquent Adolescents: Recommended (Sufficient Evidence of Effectiveness)

In the programs in our review, older juveniles (12–18 years of age) with a history of chronic delinquency, who had been mandated to out-of-home care but were sufficiently safe to be treated in the community, were placed in ther-

apeutic foster care. Program personnel collaborated closely and daily with foster families throughout the program (average length, six to seven months).

Effectiveness

- Programs that involve special training of foster parents, monitoring of the young people under their care, and close involvement of case workers were effective in reducing the violent behavior of these adolescents.

Applicability

- Applicability of these programs to settings and groups other than those studied cannot be assumed.

The findings of our systematic review are based on three studies by the same team of researchers, which assessed the effects of therapeutic foster care on incarcerations one year after the intervention, arrests for violent crimes one and two years after the intervention, and self-reported felony assaults one year after the intervention, respectively.^{65–67} Two other studies by the same team did not evaluate violent outcomes and were therefore excluded from the review.^{68,69}

In the first study, measuring rates of incarceration for all crimes of male and female adolescents (12–18 years old), those in therapeutic foster care showed significantly greater reductions than did matched controls in the two years following treatment. Additionally, more than twice the proportion of young people in therapeutic foster care completed the program than did controls. The second study compared the number of arrests for violent crimes one year before and one year after treatment among boys and girls 12–18 years old. Although the aggressive behavior of the girls increased significantly during the program and that of the boys diminished, one year after the program both girls and boys showed large and significant reductions in arrests for violent crimes. The third study, of boys 12–17 years old, showed that, although both the boys in therapeutic foster care and those in regular group homes had high rates of referral to court for delinquency after the intervention, after controlling for demographics and criminal backgrounds those in the treatment group had significantly fewer felony assaults than did the controls. Researchers also demonstrated that the family management practices of therapeutic foster care (including discipline, supervision, and positive relationships between adults and children), as well as the separation of juveniles from their delinquent peers, had a clear effect on the subsequent reduction in the boys' violent behavior.

The applicability of these findings to other settings should be viewed with caution. All three studies were conducted by the same research team in the same geographic area. The programs were intensive, including training for

the foster parents, weekly parent group meetings, case workers on call at all times, and monitoring of juveniles' school, work, and leisure activities. Additionally, the young people in these programs were predominantly white; no study has evaluated the effects, if any, of differences in ethnic or racial backgrounds. In the studies reviewed, two characteristics of the young people's backgrounds did appear to limit the effectiveness of therapeutic foster care: being victims of sexual abuse and coming from homes where parents had a history of crime or chronic drug abuse.

Potential benefits, beyond the measured reductions in criminal behavior, may result from therapeutic foster care. Young people who went through these programs were taught responsible family behavior and improved their school attendance and homework performance, as well as their relations with teachers and peers. Additionally, program participants, after returning home, lived there nearly twice as long as controls.

A potential harm should be noted in the fact that the problem behaviors of girls in one study increased during the first six months of therapeutic foster care.

The findings of our systematic review of economic evaluations of therapeutic foster care programs for chronically delinquent juveniles are based on two studies.^{18,70} One study¹⁸ assessed program costs for therapeutic foster care, analyzing only those program costs incurred by the government (state and local), and included the costs of personnel (i.e., case manager, program director, therapists, recruiter, and foster parent trainer) and foster parent stipends, as well as additional health services (e.g., mental health care). Average program costs were \$18,837 per youth (in 1997 dollars). This study, however, lacked sufficient detail on program costs and sensitivity analyses of important study parameters.

The second study was an incremental cost-benefit analysis⁷⁰ of a therapeutic foster care program compared with standard group care. Incremental program costs were \$1912 (in 1997 dollars) per youth. Total net benefits (benefits minus costs) ranged from \$20,351 to \$81,664 per youth. This estimated range does not include benefits to program youth, such as increased earnings and improved life course outcomes. Although the study included many details on program benefits, insufficient details on program costs were provided.

For foster parents, the rigors of therapeutic foster care, in contrast to regular group home care, can present barriers to the implementation of these programs. Recruiting, training, and retaining foster families willing to work with the demands of the program present the major obstacles. Young people must be monitored at all times, and parents are expected to adhere closely to the relatively strict program guidelines. Providing training and support to the par-

ents, along with an increased monthly stipend, did increase retention rates of families in the programs.⁷¹

In conclusion, the Task Force found sufficient evidence to recommend therapeutic foster care for adolescents (12–18 years of age) with chronic delinquency as a means of reducing violent behavior. These results, based on carefully structured programs conducted by the same research team, in the same geographic area, may not be applicable to other groups or settings if programs fail to maintain the key elements of the reviewed programs.

Therapeutic Foster Care for the Reduction of Violence by Children with Severe Emotional Disturbance: Insufficient Evidence to Determine Effectiveness

In these programs, clusters of five foster parent families cooperated in the care of five children (5–13 years old) with severe emotional disturbance (SED). Programs were conducted for an average length of 18 months.

Effectiveness

- We found insufficient evidence to determine the effectiveness of therapeutic foster care in reducing the violent behavior of children with SED.
- Evidence was insufficient because too few studies were available and those studies showed inconsistent, largely undesirable, findings.
- Insufficient evidence means that we were not able to determine whether or not the intervention works.

The findings of our systematic review are based on two studies of children with SED.^{72,73} One study,⁷² of boys and girls 6–12 years old, assessed the effects of cluster therapeutic foster care on *conduct disorder* (a measure of defiant behavior and physical aggression, not equivalent to the psychiatric diagnosis of conduct disorder). The other study,⁷³ of boys and girls 6–13 years old, focused on *externalizing behavior* as assessed in the Externalizing subscale of the Child Behavior Checklist.⁶³ The first study reported an increase in conduct disorders associated with cluster therapeutic foster care compared with the control program for girls and a negligible effect for boys; neither effect was statistically significant. The second study reported a small, statistically nonsignificant increase in externalizing behavior among children following the intervention. These results, therefore, provide insufficient evidence to determine whether or not therapeutic foster care is effective in reducing the violent behavior of children with SED.

Because we could not establish the effectiveness of this intervention, we did not examine situations where it would be applicable, information about economic efficiency, or possible barriers to implementation.

In conclusion, the Task Force found insufficient evidence to determine the effectiveness of therapeutic foster care in reducing the violent behavior of children with SED. Too few studies were available, and study findings were inconsistent and mostly in the undesirable direction.

Firearms Laws

Although rates of firearm-related injuries in the United States have declined since 1993, they remained the second leading cause of injury mortality in 2001.¹ In that year, an average of 81 firearm-related deaths occurred each day, including those resulting from suicide, homicide, legal intervention, and unintentional injury. From 1993 to 2000, fatal assaultive violence was highest among people 20–24 years of age; for all age groups, rates among males were approximately five times rates among females.⁷⁴ It is estimated that one-fourth of violent crimes—murder, aggravated assault, rape, and robbery—committed in 1999 (a total of 1,430,693) were committed with a firearm.² In 1998, for each firearm-related death, two nonfatal firearm-related injuries were treated in hospital emergency departments.⁷⁴ Rates of firearm-related homicide, suicide, and unintentional death in the United States exceed those of 25 other high-income nations (i.e., 1996 GNP \geq \$US9636 per capita) for which data are available.⁷⁵ In 1994, the cost of firearm-related violence in the United States was estimated to be approximately \$100 billion annually, of which at least \$15 billion was attributable to violence against youth.⁷⁶

Approximately 4.5 million new firearms are sold each year in the United States, including 2 million handguns. In addition, estimates of annual second-hand firearms transactions range from 2 to 4.5 million.^{77,78} Further, it is estimated that approximately a half million firearms are stolen annually.⁷⁸ Thus, the total number of firearms transactions approaches 9.5 million per year.

Our systematic review examined firearms laws as one of many approaches to the reduction of firearm-related violence.^{79,80} The manufacture, distribution, sale, acquisition, storage, transportation, carrying, and use of firearms in the United States are regulated by a complex array of federal, state, and local laws and regulations. We focused on assessing the effects of selected federal and state laws on violence-related public health outcomes, including violent crimes, suicide, and unintentional injuries; we also noted related effects on other outcomes, such as property crime, the apprehension of criminals, and school expulsion. We were unable to find sufficient evidence to determine the effectiveness of any of the eight firearms laws or aspects of firearms laws reviewed: bans on specified firearms or ammunition; acquisition restrictions; waiting periods for firearm acquisition; firearm registration and licensing of firearm owners; *shall issue* concealed weapons carry laws;

child access prevention (CAP) laws; zero gun tolerance in school laws; and combinations of firearms laws.

Bans on Specified Firearms or Ammunition: Insufficient Evidence to Determine Effectiveness

Bans on firearms and ammunition prohibit the acquisition and possession of certain categories of firearms (e.g., machine guns or assault weapons) or ammunition. They can also include prohibitions on the importation or manufacture of specified firearms. Bans may be federal, state, or local and can be combined with additional firearm regulations, such as requirements for safe storage, age restrictions on acquisition, or restrictive licensing requirements for firearms dealers. Bans are intended to decrease the availability of certain types of firearms to potential offenders and thus reduce the capacity of such offenders to perpetrate crime.⁸¹

Bans are usually imposed on the types of firearms or ammunition thought either to be particularly dangerous and not well suited for hunting or self-defense (e.g., semi-automatic and fully automatic assault weapons) or disproportionately involved in crime (such as cheap, low-quality, small-caliber handguns often referred to as *Saturday night specials*). Sometimes, especially in high-crime urban settings, bans may include a broad spectrum of firearms (e.g., the ban enacted in Washington, DC, in 1976 on the purchase, sale, transfer, and possession of handguns by civilians unless the handguns were previously owned and registered⁸²).

Bans commonly exempt firearms owned prior to implementation of the ban (i.e., the weapons are *grandfathered*), although such bans may require the registration of grandfathered firearms. Grandfathering is a critical element in bans insofar as it can allow stocks of the banned items to remain available after the ban goes into effect.

Effectiveness

- We found insufficient evidence to determine the effectiveness of bans on specified firearms and ammunition in preventing violence.
- Evidence was insufficient because of the small number of studies, limitations in study design and execution, and inconsistent results.
- Insufficient evidence means that we were not able to determine whether or not the intervention works.

The findings of our systematic review are based on nine reports.^{81–89} Five studies that evaluated the 1976 Washington, DC, ban on handguns reached inconsistent conclusions about the effect of the law in reducing homicide. One study found a decrease in suicide, but this finding was inconsistent with

that of another study in the review. Findings of a study of the effect on homicide of the 1994 Federal Violent Crime Control Act (banning large assault weapons and large-capacity ammunition magazines) suggested that the ban had a beneficial effect. Other studies (including two that looked at Saturday night specials) found inconsistent effects or did not measure a health-related outcome. This small number of studies, with limitations in the quality of study design and execution as well as inconsistent results, provided insufficient evidence to determine whether or not these laws are effective in reducing violence.

Because we could not establish the effectiveness of the laws reviewed, we did not examine circumstances in which they would be applicable, information about economic efficiency, or possible barriers to implementation.

In conclusion, the Task Force found insufficient evidence to determine the effectiveness of bans on specified firearms and ammunition in preventing violence. The number of available studies was small, some studies had limitations in their design or execution, and results across studies were inconsistent.

Acquisition Restrictions: Insufficient Evidence to Determine Effectiveness

Acquisition restrictions attempt to deny the purchase of firearms by people with certain characteristics that indicate high risk for illegal or other harmful use of firearms. These characteristics may relate to criminal backgrounds, such as a felony conviction or indictment, a domestic violence restraining order, being a fugitive from justice, or having been convicted on drug charges; personal situations, such as being judged to be “mentally defective,” being an illegal immigrant, or having a dishonorable military discharge; and other factors, including being a minor.

Although restrictions on such factors as age are easy to confirm, conducting a background check is not always a successful process. Records are not always available, and laws limit the time allowed to research records that do exist.

Effectiveness

- We found insufficient evidence to determine the effectiveness of acquisition restrictions in preventing violence.
- Evidence was insufficient because of the small number of studies, limitations in study design and execution, and inconsistent results.
- Insufficient evidence means that we were not able to determine whether or not the intervention works.

The findings of our systematic review are based on four studies that assessed the effects of acquisition restrictions on violence.^{85,90-92} Studies examined the effects of restrictions based on felony convictions (on violent crime overall and on homicide and suicide); restrictions based on misdemeanor convictions on overall violent crime; and the effect of restrictions on people who were minors, were “mentally defective,” or abused drugs or alcohol on specific violent crimes, suicide, and unintentional injury. Overall, results showed inconsistent effects or were not statistically significant, thereby providing insufficient evidence to determine whether or not acquisition restrictions are effective in preventing violence.

Because we could not establish the effectiveness of the laws reviewed, we did not examine circumstances in which they would be applicable, information about economic efficiency, or possible barriers to implementation.

One potential benefit of acquisition restrictions can be the capture of people for whom warrants are outstanding. One potential harm can be denying purchase to an eligible applicant because of incorrect initial information about relevant restrictions.

In conclusion, the Task Force found insufficient evidence to determine the effectiveness of acquisition restrictions in preventing violence. The number of available studies was small, some studies had limitations in their design or execution, and results across studies were inconsistent.

Waiting Periods for Firearm Acquisition: Insufficient Evidence to Determine Effectiveness

Waiting periods for firearm acquisition require a specified delay between application for and acquisition of a firearm. This requirement is usually imposed to allow time to check the applicant’s background or to provide a *cooling-off* period for people at risk of committing an impulsive crime or suicide. Waiting periods can be combined with requirements in addition to background checks, such as a requirement for safety training.

The interim Brady Handgun Violence Prevention Act,⁹³ a federal law that went into effect in 1994, mandated a background check and a five-day waiting period for handgun purchasers. In 1998, this waiting period expired and was replaced by a mandatory computerized National Instant Criminal Background Check System (www.fbi.gov/hq/cjisd/nics/index.htm) required not only for handguns, but also for all firearm purchases, and allowing dealers to sell a firearm if the Federal Bureau of Investigation (FBI) reports no adverse evidence to the dealer within three days of application. However, some states have longer waiting periods for handgun or long firearm purchases.

Effectiveness

- We found insufficient evidence to determine the effectiveness of waiting periods for firearm acquisition in reducing suicide, homicide, aggravated assault, robbery, rape, or unintentional firearm-related injury death.
- Evidence was insufficient because of the small number of available studies, limitations in study design and execution, and inconsistent effects.
- Insufficient evidence means that we were not able to determine whether or not the intervention works.

The findings of our review are based on seven studies on the effects of waiting periods on violent outcomes.^{85,90,94–98} One study was conducted in Queensland, Australia; the rest of the studies were conducted in the United States.

Studies evaluating the effects of waiting periods on homicide had mixed results, some showing a reduction in homicide and others an increase; none of the results were statistically significant. Studies evaluating the effects of waiting periods on suicide (measuring long firearm purchase, handgun purchase [and the Brady Law five-day waiting period], and both long firearm and handgun purchases) also showed mixed results. Evidence of the law's effects on aggravated assault, robbery, rape, and unintentional firearm-related injury death were also inconsistent in direction, and none were statistically significant.

Several studies suggested the presence of a partial *substitution effect* for suicide, in which decreases in firearm-related suicide are accompanied by smaller increases in non-gun suicide. No such substitution effects were found for homicide, aggravated assault, or robbery.

Overall, these results provided insufficient evidence to determine whether or not waiting periods are effective in reducing suicide, homicide, aggravated assault, robbery, rape, or unintentional firearm-related injury deaths.

Because we could not establish the effectiveness of the laws reviewed, we did not examine circumstances in which they would be applicable, information about economic efficiency, or possible barriers to implementation.

Although concerns are sometimes voiced about the possibility that waiting periods may give criminals (who acquire firearms by illegal means and avoid the waiting period) an advantage over law-abiding citizens (who may lack means of self-defense during the waiting period), we found no evidence to support or dispute this.

In conclusion, the Task Force found insufficient evidence to determine the effectiveness of waiting periods in preventing suicide, homicide, aggravated assault, robbery, rape, or unintentional firearm-related injury death because of the small number of available studies, limitations in study design and ex-

ecution, and effects that were inconsistent in direction and lacked statistical significance.

***Firearm Registration and Licensing of Firearm Owners:
Insufficient Evidence to Determine Effectiveness***

Registration requires that a record of the owners of specified firearms be created and retained.⁹⁹ Licensing requires an individual to obtain a license or other form of authorization or certification that allows the purchase or possession of a firearm.⁹⁹ Licensing and registration requirements are often combined with other firearms regulations, such as safety training or safe storage requirements.

Effectiveness

- We found insufficient evidence to determine the effectiveness of firearm registration and licensing of firearm owners in preventing violence.
- Evidence was insufficient because the small number of available studies had limitations in design and execution as well as inconsistent results.
- Insufficient evidence means that we were not able to determine whether or not the intervention works.

The registration practices of states and the federal government vary widely.¹⁰⁰ The Firearm Owners Protection Act of 1986¹⁰¹ specifically precludes the federal government from establishing and maintaining a national registry of firearms and their owners. Likewise, no federal firearm licensing requirements or provisions for individual purchasers exist. However, several states have laws that require the licensing of firearm owners or registration of firearms, and recorded information is kept in centralized registries. Some states have laws requiring registration of handguns. Licensing and registration may serve as instruments for the control of illegal firearms ownership, transfer, and use^{102,103} and may also deter illegal acquisition and use.

The findings of our systematic review are based on five studies on the effects of licensing on violent outcomes,^{85,96–98,103} two^{85,103} of which also reported on the effects of registration. One study collected data in 1980 (and one year before and after), one in 1978, one in 1969–1970, and one in 1960 and 1970; one assessed firearms retrieved from crimes during a one-year period (1997–1998). Evidence of the effects of licensing and registration on diverse outcomes was inconsistent, with half of the studies showing decreases in violence and half showing increases. These findings provided insufficient evidence to determine whether or not firearm registration or licensing of firearm owners is effective in preventing violence.

Because we could not establish the effectiveness of the laws reviewed, we did not examine circumstances in which they would be applicable, information about economic efficiency, or possible barriers to implementation.

Several benefits have been associated with the licensing of firearms owners and the registration of firearms, including enhanced law enforcement and the tracing of illegal firearms to their source.^{102,104} A harm associated with licensing and registration is the threat to the privacy and perceived rights of owners.¹⁰⁵

In conclusion, the Task Force found insufficient evidence to determine the effectiveness of firearm registration and licensing of owners in preventing violence. Only a small number of studies was available, with limitations in their design and execution and inconsistent results.

Shall Issue Concealed Weapons Carry Laws: Insufficient Evidence to Determine Effectiveness

Shall issue concealed weapons carry laws (shall issue laws) require authorities to issue permits to carry concealed weapons to any qualified applicant. Prior to 1977, only 8 states had shall issue laws; as of 2000, 31 states had them.¹⁰⁶ In contrast, some states have *may issue* laws—in which the issuing authority has the discretion to issue or deny a firearms permit based on such criteria as the perceived need or moral character of the applicant—and some states completely prohibit the carrying of concealed weapons. State laws vary as to who can receive a carry permit, but generally disqualify someone who has had a prior felony conviction or a conviction on a drug charge in the past three years, who has been committed to a mental hospital in the past five years, who is a fugitive from justice, or who is too young. State laws also differ substantially in terms of firearms safety training, permit fees, and places where firearms may not be carried.¹⁰⁷

Effectiveness

- We found insufficient evidence to determine the effectiveness of shall issue laws in preventing homicide, aggravated assault, robbery, rape, or homicide of police.
- Evidence was insufficient because too few qualifying studies were available for each outcome of interest.
- Insufficient evidence means that we were not able to determine whether or not the intervention works.

Two principal hypotheses, not mutually exclusive, have been proposed to predict the effects of shall issue laws. Because the laws allow for self-defense, some believe that potential criminals may be deterred by fear of an armed victim.¹⁰⁸ If so, publicity about the law and the fact that individuals could be

carrying concealed firearms is likely to be more important in reducing violence than the actual number of firearms carried. Others have reasoned that the presence of more firearms can both increase rates of unintended and intended injury in spontaneous confrontations and lead potential criminals to carry and use more lethal firearms more often.¹⁰⁹ If this is correct, the actual number of additional firearms carried is important. In a survey on the attitudes of imprisoned felons,^{110,111} felons claim to be deterred from committing a crime if they think victims might be armed, but they also carry firearms to deter violence by victims. Therefore, shall issue laws may have contrary effects on firearms behavior—both deterring and escalating firearms carrying among perpetrators.

The findings of our systematic review are based on four studies of the effects of shall issue laws on violent outcomes.^{85,112–114} An additional eight studies were identified but did not meet our quality criteria and were excluded from the review.^{108,115–121}

Analysis of available data was hampered by the methods used to collect data (at the county, state, and federal levels), the types of data (e.g., versus arrests), and the sources of data reporting. Because of concerns about the reliability of county-level crime data for research purposes,¹²² we did not consider any of the county-level studies in our assessment of the effects of shall issue laws on violence.

The four qualifying studies of shall issue laws included one study that examined national effects on homicide using Vital Statistics reports (from the National Center for Health Statistics [NCHS] of the CDC); one study that used both Vital Statistics and FBI Uniform Crime Report (UCR) data to examine the effects of shall issue and other firearms laws on multiple violent outcomes; one study that used Vital Statistics to assess the effects of shall issue laws in five selected counties; and one study that used state-level UCR data to assess the effects of shall issue laws on homicides in which police are the victims. Thus, three qualifying studies assessed homicide as an outcome, one assessed police as homicide victims, and one assessed multiple other violent outcomes.

The limited amount of available evidence showed no consistent trends and provided insufficient evidence to determine whether or not shall issue laws are effective in preventing violence. Two studies suggested a reduction in homicide associated with shall issue laws at the national level and a third suggested mixed effects, with an overall increase in homicide associated with the laws. The study of police as homicide victims showed a small, statistically nonsignificant decline in the homicide of police associated with shall issue laws. (Over the past three decades, a mean of 83 police have been the victims of homicide per year—0.6% of all U.S. homicides. We consider this separate from homicide in the general population.)

Because we could not establish the effectiveness of the laws reviewed, we did not examine circumstances in which they would be applicable, information about economic efficiency, or possible barriers to implementation.

In conclusion, the Task Force found insufficient evidence to determine the effects of shall issue laws on homicide, aggravated assault, robbery, rape, and homicide of police because too few qualifying studies were available for each outcome of interest.

Child Access Prevention Laws: Insufficient Evidence to Determine Effectiveness

Child access prevention (CAP) laws are designed to limit children's access to and use of firearms. The laws require firearm owners to store their firearms locked, unloaded, or both. In some states, firearm owners are liable not simply when firearms are improperly stored, but also when a child uses the owner's improperly stored firearm to threaten or harm him- or herself or another person.

Child access prevention laws are relatively recent: Florida passed the first in 1989, and after the shootings at Columbine High School in April 1999, two more states adopted CAP laws and they were under consideration in six more states.¹²³ By 2000, 16 states had adopted CAP laws.¹⁰⁶ In three CAP law states (Florida, Connecticut, and California) violation of CAP laws is a felony; in the rest of CAP law states it is a misdemeanor.

Effectiveness

- We found insufficient evidence to determine the effectiveness of CAP laws in preventing violence.
- Evidence was insufficient because only a small number of studies, with limitations in the quality of execution, was available.
- Insufficient evidence means that we were not able to determine whether or not the intervention works.

The findings of our systematic review are based on three studies of the effect of CAP laws;^{95,124,125} all examined the outcome of unintentional firearm-related injury deaths, and one examined firearm-related and non-firearm-related suicides and homicides. On the untested assumption that locked and unloaded firearms may hinder rapid access to firearms for self-defense, one study examined multiple outcomes, including violent crimes (i.e., homicide, aggravated assault, robbery, and rape) committed with and without firearms, as well as firearm-related suicides. All studies assessed outcomes among juveniles; one study also examined effects on older age groups.

All the studies presented a common challenge for our analysis: the law is intended to reduce injuries *caused* by juveniles, but the studies all assess ju-

venile *victims*. As a result, the assessment of the effects of CAP laws on outcomes other than suicide may be biased. None of the studies assessed levels of publicity, awareness, or enforcement of CAP laws.

One study indicated that the reduction in unintentional firearm-related injury death among juveniles less than 15 years of age was statistically significant in states that prosecute CAP law violations as a felony, and was not significant in states in which the crime is a misdemeanor. However, another study, including data from three additional states that had passed CAP laws and three more years of follow-up, confirmed the earlier finding on states with misdemeanor prosecution but showed that the effect of the law on unintentional firearm-related injury death among juveniles less than 15 years of age is statistically significant in Florida (a state with a felony sanction) but not in the other two felony states.

One study indicated a reduction in firearm-related suicide among juveniles less than 15 years of age associated with CAP laws. Studies of homicide, assault, robbery, and rape indicate mixed results, with two showing reductions in firearm-related homicide among juveniles less than 15 years of age and in assault at all ages and three showing increases in total homicide, robbery, and rape at all ages. (Only the findings on robbery and rape are statistically significant.) Overall, too few studies examined each outcome to determine the effectiveness of CAP laws in preventing violence.

Because we could not establish the effectiveness of the laws reviewed, we did not examine circumstances in which they would be applicable, information about economic efficiency, or possible barriers to implementation.

In conclusion, the Task Force found insufficient evidence to determine the effectiveness of CAP laws in preventing violence or unintentional firearm-related injury and other violent outcomes because of the small number of available studies, all with limitations in the quality of execution.

Zero Tolerance of Firearms in Schools: Insufficient Evidence to Determine Effectiveness

The Gun-Free Schools Act, passed in 1994,¹²⁶ stipulates that each state receiving federal funds under the Act must have a law requiring local education agencies to expel a student from school for at least one year if the student is found in possession of a firearm at school. (This expulsion requirement can be modified on a case-by-case basis.) Expulsion may lead to alternative school placement or to *street* placement (full expulsion, with no formal education, for a specified length of time), after which students are generally allowed to return to their regular schools.

Effectiveness

- We found insufficient evidence to determine the effectiveness of zero tolerance of firearms in schools in preventing violence.
- Evidence was insufficient because we found no studies of these laws.
- Insufficient evidence means that we were not able to determine whether or not the intervention works.

The carrying of weapons in schools appears to have declined steadily during the 1990s, as did involvement in physical fights on school property.^{127,128} However, the proportion of high school students who reported being threatened or injured with a weapon on school property in the past year remained steady over this period, at 7% to 9%. The rate of serious violent crimes at or on the way to school peaked in 1994 and declined from then until at least 2000.¹²⁸ And, whether or not metal detectors are a viable approach to reducing the presence of guns in schools, few schools use them: in 1996–1997, 4% of public schools reported random, hand-held metal detector checks on students, and in 1% of schools students were required to pass through metal detectors every day.¹²⁹ By our estimate, it appears that less than 4.4% of firearms carried in schools were detected in association with the Gun-Free Schools Act.²⁰

In our systematic review, we found no study that attempted to evaluate the effects of zero tolerance of firearms in schools on violence, nor did we find a study measuring the specific effect of the Gun-Free Schools Act on firearm carrying in schools. Therefore, the evidence was insufficient to determine whether or not zero tolerance is effective in preventing violence or in reducing the carrying of firearms in schools. We did, however, find one study¹³⁰ of the effectiveness of metal detector programs in reducing the carrying of firearms in schools. (Although firearms detection is not explicitly required in the Gun-Free Schools Act, the effectiveness of the law may depend on the ability to detect firearms.) The rate of carrying firearms to, from, or in school was half as great in schools with metal detector programs as in schools without the programs, although the rate of weapon carrying elsewhere was the same.

Because we could not establish the effectiveness of the laws reviewed, we did not examine circumstances in which they would be applicable, information about economic efficiency, or possible barriers to implementation.

A major potential, albeit unintended, harm of the Gun-Free Schools Act of 1994, particularly if firearm detection becomes more effective, is the street expulsion of thousands of students with low school achievement and high risk of violence. Even though the specific effect of firearm-related expulsion is not known, expulsion can result in a life course with fewer opportunities for

(legal) employment, fewer resources, and a greater likelihood of criminal behavior and imprisonment.^{131,132} The resulting lower productivity and increased criminal activity may well have high societal costs.¹³¹ One review for the U.S. Department of Education¹³³ indicates that alternative schools for violent students may be effective and cost effective in reducing violent behavior and enhancing emotional development for youth suspended or expelled from school; however, the review also notes that alternative schools may stigmatize their students and increase discrimination against them.

In conclusion, the Task Force found insufficient evidence to determine the effectiveness of zero tolerance of firearms in schools in preventing violence because no studies of zero tolerance were identified. A single study measured the effect of a school metal detector program on firearm-carrying behavior but not specifically on violence.

Combinations of Firearms Laws: Insufficient Evidence to Determine Effectiveness

The process that makes firearms available includes manufacture or import, distribution, acquisition, storage, and carrying. Because of the complexity and diversity of the manufacture, distribution, and use of firearms in the United States, laws that attempt to reduce violence by targeting single aspects of the firearms process may be ineffective. We examined whether combinations of laws are more effective in reducing violence than individual laws.

Effectiveness

- We found insufficient evidence to determine the effectiveness of combinations of firearms laws in preventing violence.
- Evidence was insufficient because the available studies showed inconsistent findings.
- Insufficient evidence means that we were not able to determine whether or not the intervention works.

The findings of our systematic review are based on three kinds of evidence: studies of the effects of comprehensive national laws, cross-national studies of firearms laws, and *index studies* (in which law types within jurisdictions are categorized and counted, and the counts compared with rates of specific forms of violence within the same jurisdictions).

Our review of comprehensive national laws focused on two such laws: the Gun Control Act of 1968 (Public Law 90–618) in the United States (two studies^{96,134}) and the Criminal Law Amendment Act of 1977 in Canada (10 studies^{135–144}). A study of the Gun Control Act of 1968 showed results in opposite directions (an increase in homicide, adjusted for new firearms, and a decrease in homicide, adjusted for the total firearm stock). The best study of

the comprehensive Canadian firearms law indicated decreased rates of homicide but increased rates of firearm-related suicide.

In the cross-national studies of comprehensive laws, the effects of more and less comprehensive firearms regulations on violence were assessed by comparing regions within the United States and Canada (three studies¹⁴⁵⁻¹⁴⁷). One study found an association between the degree of firearms regulation and firearm-related aggravated assault and homicide, but not of other forms of interpersonal violence. The second study found that the degree of regulation was associated with lower rates of firearm-related suicide and higher rates of other forms of suicide. The third study indicated no association between national levels of firearms regulation and rates of homicide.

The index studies compared degrees of firearms regulation and violent outcomes among U.S. states and cities. Our findings are based on six index studies.^{85,96,97,148-150} Two additional studies were identified but did not meet our quality criteria and were excluded from the review.^{98,151} Index studies yielded heterogeneous results about homicide, rape, aggravated assault, robbery, and unintentional firearm-related injury death. Only for suicide did all index studies show a reduction associated with a greater amount of regulation: two of five results were statistically significant.

Overall, these results provided insufficient evidence to determine whether these combinations of laws are effective in preventing violence.

Because we could not establish the effectiveness of the combinations of laws reviewed, we did not examine circumstances in which they would be applicable, information about economic efficiency, or possible barriers to implementation.

In conclusion, based on national law assessments, international comparisons, and index studies, the Task Force found insufficient evidence to determine whether the degree or intensity of firearms regulation is associated with decreased (or increased) violence. Current evidence is inconsistent and, in general, methodologically inadequate to draw conclusions about causal effects.

REDUCING VIOLENCE THROUGH USE OF THESE RECOMMENDATIONS

Many environmental, community, family, and personal risk factors for the development of violent behaviors are recognized.^{152,153} The two interventions recommended by the Task Force in this review—early childhood home visitation for the prevention of child maltreatment and therapeutic foster care for the reduction of violence by chronically delinquent adolescents—offer opportunities to reduce the development of serious violent behavior by carry-

ing out family-level interventions at two critical developmental phases. Home visitation programs of two or more years' duration may prevent the initiation of a form of violence that is detrimental for all immediately involved and, in addition, has severe long-term personal and societal consequences and costs for direct victims and others. In turn, therapeutic foster care may serve to end or slow the development of chronically violent behaviors that have already been initiated and that have long-term consequences for adolescent perpetrators, for their families and communities, and for society more broadly.

The median effect of home visitation programs—a 39% reduction in rates of child maltreatment in comparison to programs with minimal services, but not including home visits—indicates the enormous potential of these programs. The population that might benefit is a large one. In 1999, 33% of the 3.6 million births in the United States were to single mothers, 12% were to teen mothers, and 22% were to mothers with less than a high school education;¹⁵⁴ 43% of births—approximately 1.7 million—were to mothers with at least one of these characteristics (B. Hamilton, National Center for Health Statistics, personal communication, Sept. 9, 2002). In addition, some home visitation programs are designed to address other populations at risk, such as poor single mothers.

The median effect of therapeutic foster care—on the order of a 70% reduction in rates of violence among chronically delinquent adolescent participants, compared with the usual care in group homes—also indicates the great potential of such programs. The population that might be served by these programs is also large, though difficult to estimate; it is likely to be on the order of tens or hundreds of thousands of adolescents. Countering the development of chronically violent behaviors by means of therapeutic foster care would clearly require both extensive societal commitment to support such programs and the commitment of individual families and communities to undertake the daily work of therapeutic foster care, which is undoubtedly both challenging and rewarding. Here again, the benefits are likely to substantially reward the societal investment.

Decisions about choosing programs to address the problem of violence clearly depend on the magnitude of the problem in the decision makers' communities, other problems they face and their priorities, and the resources they have or may call upon. For both programs recommended here, in addition to financial resources, personnel to implement the program and adapt it to local needs and personnel to deliver the program (i.e., trained home visitors and trained therapeutic foster care families) will be needed. In Europe, home visitation programs are common, well established, and financed by national and local governments; integrated with other health and social service programs; and most often universal (i.e., made available to all childbearing families, regardless of the estimated risk of child-related health or social prob-

lems).²⁵ Researchers have suggested that, in the United States, programs such as Medicaid might serve as a foundation for a national program of early childhood home visitors directed at needy populations.²⁵

CONCLUSION

This chapter summarizes Task Force conclusions and recommendations on interventions to reduce violent behavior, primarily among juveniles. To prevent violence directed at children (maltreatment [abuse or neglect]), the Task Force recommends home visitation during early childhood. Insufficient evidence exists at this time to determine the effectiveness of early childhood home visitation to prevent intimate partner violence, violence by visited parents (other than child maltreatment or intimate partner violence), or violence by visited children. The Task Force recommends therapeutic foster care for the reduction of violence by chronically delinquent adolescents, but evidence was insufficient to determine the effectiveness of therapeutic foster care for the reduction of violence by children with severe emotional disturbance.

The Task Force also reviewed possible ways to reduce the injury and premature death associated with improper use of firearms, but found insufficient evidence to determine the effectiveness of any of eight approaches: bans on specified firearms or ammunition; acquisition restrictions; waiting periods for firearm acquisition; firearm registration and licensing of firearm owners; shall issue concealed weapon carry laws; child access prevention laws; zero tolerance of firearms in schools; and combinations of firearms laws.

Insufficient evidence should not be interpreted as evidence of ineffectiveness, but rather as lack of current knowledge about whether an intervention is effective or not. Details of these reviews have been published^{20–22,155–157} and these articles, along with additional information about the reviews, are available at www.thecommunityguide.org/violence.

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