Firearms play a major role in childhood morbidity and mortality in the United States, especially among adolescents. The American Academy of Pediatrics is committed to reducing firearm death and injury of children and youth and has published policy statements on handgun control (1985),1 "toy" firearms (1987),2 and "Firearm Injuries Affecting the Pediatric Population" (1992).3 The purpose of this statement is to identify major firearm issues that specifically address adolescents.

Reducing injuries and deaths from firearms is an essential priority for adolescent health. Of all firearm deaths among children from birth to age 19 years, 80% occur in older youths aged 10 to 19 years. Firearms are involved in 70% of teen homicide and 63% of teen suicide. Firearms are the second leading cause of death (after motor vehicle accidents) among all teenagers aged 15 to 19 years.4,5 Risk factors for firearm death seem particularly related to age, as rates of firearm violence peak in late adolescence (ages 15 to 24 years) and decrease in young adulthood (ages 25 to 34 years).6 Therefore, special characteristics of adolescent development must be considered in designing effective countermeasures to prevent injury and death.

ADOLESCENT MORTALITY AND MORBIDITY

The statistics on firearm death and injury in adolescents emphasize the severity of the problem.

Mortality

Firearms account for 20% of deaths among all older youth, with almost 3200 US youths aged 15 to 19 years fatally shot each year.4 In the last 20 years, the rate of firearm deaths among teenagers has increased 75%, from 10.1/100 000 to 17.7/100 000.4 The rate for males is three to four times higher than that for females.7 Black male teenagers are disproportionately at risk, with 48% of their deaths now caused by firearms, compared with 18% among white male teenagers.4,7

The majority of adolescent firearm deaths are due to intentional or violent injury, specifically homicide and suicide. Among teenagers aged 15 to 19 years, homicide accounts for 50% of firearm deaths, suicide for 39%, and unintentional deaths (accidents) for only 8%.4 The United States has the highest teen homicide rate in the industrialized world, and youth homicide rates are peaking at progressively earlier ages.6

The lethal role of firearms cannot be overemphasized. Firearms are used in almost three quarters of teenage homicides, with knives accounting for most of the rest.7,8 Firearms are now used in the majority of all completed teenage suicides, including 65% of suicide deaths among teenage boys and 56% among teenage girls aged 15 to 19 years.9 Between 1970 and 1980, the suicide rate among teenagers in this age group increased by 44%. Almost all of this increase was due to firearm suicides.7,10

Although overshadowed by the sheer numbers of violent deaths, unintentional or accidental firearm deaths must not be ignored, because 80% of all accidental firearm deaths (approximately 400 per year) among children occur in older youths aged 10 to 19 years.7

Morbidity

For each firearm fatality, it is estimated there are at least five nonfatal injuries.11 Although there is a national database on nonfatal gunshot injuries, hospital-based studies show gunshot injuries are increasing among children and youth. Since 1986, the number of gunshot wounds reported in children by major urban trauma centers has increased 300%.12 In these centers, 20% to 25% of nonfatal gunshot injuries result in permanent, primarily neurologic, damage.12 In a large Detroit study of spinal cord injuries among teenagers, 16% were related to violence and 41% of those involved handguns.13

Types of Firearms Involved

Firearms include handguns (revolvers, pistols), long guns (rifles, shotguns), assault weapons, and air guns (BB, dart, and pellet guns).

Handguns account for the majority of firearm death and injury in the United States. Of teenage homicides due to firearms, 73% involved handguns, 21% long guns, and 6% other firearms.14 Of teenage suicide due to firearms, 70% involved handguns.15 Hunting rifle accidents account for less than 5% of total teen firearm death and injury, although rates vary by geography.16-18 Long guns are more of a risk in Southern and rural areas where ownership of such firearms is more common.16,17 Nonpowder firearms (air guns), which have become increasingly dangerous due to high-power design changes, account for 35 000 emergency department visits per year, and 25 deaths in the last decade.7,19 Peak injury rates are in young
Adolescents are at particular risk for firearm death and injury because of their easy access to firearms, their unique developmental issues, and the inherent difficulties in educating them to be "gun safe" (ie, to use guns in a safe manner).

**Adolescent Risk Factors**

Adolescents are at particular risk for firearm death and injury because of their easy access to firearms, their unique developmental issues, and the inherent difficulties in educating them to be “gun safe” (ie, to use guns in a safe manner).

**Accessibility of Firearms**

Approximately 200 million firearms, including 60 million handguns, are privately owned in the United States. As of 2017, half of all US homes contain firearms, and 25 million households have handguns. As a result, 9 million adolescents have access to handguns in their own homes. But even if there are no guns in their own homes, teenagers are likely to encounter them when visiting the homes of friends or relatives. In a 10-state survey of 11,000 adolescents, 41% of boys and 21% of girls said they could obtain a handgun if they wanted. In that survey, 64% of boys and 19% of girls reported having used a gun in the last year.

The prevalence of gun ownership among US teens, especially among boys, is striking. In a suburban and rural survey, 48% of adolescent boys reported owning a gun, with 9% owning a handgun. The average age of acquisition was 12.5 years, with most receiving their guns as gifts from older male relatives.

The risks posed by guns in the home are often unrecognized. Parents state they own handguns for “peace of mind and personal protection,” yet the most credible published studies confirm that guns endanger rather than protect the household. In a 6-year study in King County, Washington, a gun in the home was 43 times more likely to kill a family member or friend than to be used to kill an intruder. Among children and youth younger than age 19, 84% of firearm deaths occurred in the home. When a youth fatally fires a gun at home, the victim will most often be the youth (35%), a friend (34%), a sibling (25%), or a parent or other relative (6%).

**Adolescent Developmental Issues**

The social context surrounding firearm use is complex. The extent of firearm deaths among adolescents is a uniquely American problem, not found in adolescents anywhere else in the world. The overall violence in American society and the glorification of violence in the media are influences. Issues of race, poverty, urbanization, family disruption, and the erosion of basic law and order also are involved. Within this context, however, adolescents are especially vulnerable to firearm death and injury because of the following developmental issues inherent in the age group.

- **Identity and Rite of Passage.** Gun ownership or use, especially for males, may be seen as an American tradition associated with initiation into manhood. Carrying a gun may be seen as “macho” or brave, resulting in instant adult identity.
- **Belief in Invincibility.** In defense against emerging fears of inadequacy and fallibility, adolescents may react with reckless bravado, or daredevil, defiant behavior that results in unsafe gun practices.
- **Independence and Autonomy.** After puberty, teenagers have increasing amounts of freedom, privacy, and time unsupervised by adults, as well as a desire to challenge adult rules, which may also result in unsafe gun practices.
- **Curiosity.** Young teenagers in particular have an irresistible curiosity about firearms, seeking them out of “safe” places, handling them, and showing them off to friends.
- **Peer Group Influence.** Pressures exerted by friends struggling with their own insecurities may prompt teenagers to possess, carry, flaunt, or use a gun in ways they might otherwise resist.
- **Immaturity.** Safety often is learned from experience. A teenager’s lack of experience, and subsequent lack of judgment and self-control, often result in dangerous experimentation.
- **Impulsiveness.** Both homicidal and suicidal thoughts are related directly to impulsive, ambivalent behavior, during which access to a gun creates a potentially lethal situation for vulnerable youth.
- **Substance Abuse.** Experimentation with alcohol and drugs, which also occurs during adolescence, increases the likelihood of risk-taking behavior and long has been associated with increased risks of injury, including suicide and violence.
- **Perceived Need for Protection.** Adolescents increasingly view their environment as dangerous (perhaps reinforced by news, television, and media messages). Because they have limited coping skills for conflict resolution, they may respond by carrying or using weapons.

A common misperception is that teen homicides largely are related to crime, gang activity, or premeditated assault, when in fact the majority of shootings are committed by friends or relatives. The most common event precipitating a shooting is an argument, often over something later seen as trivial. Such shootings are usually impulsive, unplanned, and instantly regretted. As with suicide, the lethal factor in teenage homicide is the immediate availability of a firearm.

**Difficulty with Gun Safety Education**

Because of these inherent developmental and behavioral vulnerabilities, educational efforts aimed at teaching teenagers to use guns safely are not likely to be successful in preventing firearm death and injury. No published research confirms effectiveness of gun safety training for adolescents. Most preventive gun safety education is directed at hunters and marksmen, but hunting and target-shooting accidents are a small part of the adolescent firearm problem. Modifications in gun design are unlikely to reduce injury, because those at greatest risk are preteen and teenage boys, both of whom possess adult abilities to circumvent gun safety features.

**RECOMMENDATIONS**

The American Academy of Pediatrics recognizes firearms as a major cause of adolescent morbidity and mortality. Preventing firearm death and injury re-
quires an awareness of multiple psychosocial factors that influence adolescent behavior, and therefore it requires an equally multifaceted approach. The policy supported by the Academy is to eliminate handguns from the environment of children and adolescents, and to work toward changing society’s attitude toward guns so that it becomes socially unacceptable for children and youth to have access to deadly weapons. Within this philosophy, the Academy supports the following recommendations regarding firearms and adolescents.

1. The Academy supports legislative and regulatory measures that will provide passive protection by reducing the availability of guns in the adolescents’ environment. Objectives include reducing the number of handguns in private ownership, supporting restrictions to make handgun ownership more difficult, and banning certain categories of weapons such as handguns, deadly air guns, and assault weapons.

2. The Academy urges all adolescent health care providers to promote the responsibility of every family to create a gun-safe home environment.26 This includes asking about the presence of guns in the home; counseling patients, parents, and relatives (particularly male relatives) on the dangers of having a gun, especially a handgun, in the home; advising removal or reduction of guns in the household; providing office literature on the risks of guns; and emphasizing gun safety rules when patients visit friends’ homes. Asking about the presence of a gun in the home, and if present counseling on its removal or secured storage, may be the most effective action the pediatrician can take.

3. The Academy supports attempts to identify adolescents at highest risk to provide them with age-appropriate services. Victims of nonfatal firearm injury or other violence are one group at highest risk of becoming fatalities later. Active intervention by emergency department personnel or follow-up care providers should include psychosocial assessment, counseling families and teenagers about imminent risk, and evaluating for a social services home visit or referral to other support services. Other high-risk youth include those with a history of family or peer violence, substance abuse, depression, previous suicide attempt, or carrying of weapons.

4. The Academy supports development of community-based coalitions of professionals, parents, schools, police, media, and advocacy groups to address the broad issues of public education, legislation, protective interventions, and societal action necessary to reduce firearm injury and death.

5. School curriculums aimed at preventing violence, including firearm violence, through coping skills, conflict management, and risk awareness still are being evaluated, but show promise as there is mounting evidence that violence is a learned response to stress and conflict. Because gun safety education programs are also widely available and heavily promoted, the Academy cautions educators to choose educational programs and approaches carefully, avoiding those that might inadvertently encourage or promote the access of youth to firearms. Gun safety education programs directed at youth should be evaluated prior to widespread implementation.

6. The Academy encourages active research on the precursors and correlates of firearm injuries and on intervention and prevention strategies for children, adolescents, and their families.

Firearm morbidity and mortality, which is largely from homicide and suicide, must be recognized as a major adolescent health problem as well as a social issue. Although the scope of the problem involves all of American society, pediatricians and other adolescent health care providers can make a critical contribution to specific intervention and prevention strategies.

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