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Introduction

Accidents are the leading cause of death for children outside of the neonatal period, which means that pediatricians have long advocated for programs and interventions to protect children from accidental injury. Promoting appropriate usage of car seats and seat belts has been a public health intervention successfully promoted by large numbers of pediatricians. Remarkably, childhood death and injury from gun violence rivaled the morbidity and mortality due to motor vehicle crashes in the United States in 2014. To help you better understand the public health impact of firearms on children, the American Academy of Pediatrics (AAP) are now bringing together published articles in one custom collection, giving you quick access to a compendium of studies on this important topic.

The AAP’s top priorities in federal gun violence prevention advocacy are:

1. Stronger gun laws, including stronger background checks, banning assault weapons, addressing firearm trafficking, and encouraging safe firearm storage
2. Violence prevention programs addressing the needs of at-risk children and children exposed to violence
3. Funding for gun violence prevention research and public health surveillance
4. Protecting the crucial role of physicians in providing anticipatory guidance to patients about the health hazards of firearms
5. Ensuring children and their families have access to appropriate mental health services to address the effects of exposure to violence

This custom collection on protecting children from gun violence will be continually updated online as more articles are published, so please check the online collection frequently for new studies about this important topic.

—Shawn L. Ralston, MD, MA, MS
Editor-in-Chief, Hospital Pediatrics
Prevent Youth Assault by Assaulting Firearm Violence

Judy Schaechter, MD, MBA*, Elliot W. Nelson, MD†

For decades, firearm injuries have been a leading cause of death, acquired disability, emotional anguish, and fear for our children and their families. Counting is easy: >32,000 deaths and 84,000 nonfatal shootings occurred in the United States in 2013. Among the average of 320 shootings per day were 48 children aged <19 years or 130 youth aged <25 years. What is harder to enumerate is the impact on affected siblings, cousins, neighbors, and classmates, as well as the classmates—children who may have witnessed the event or experience it in the retelling. Too many feel scared and alone. A portion will arm themselves, for “protection.” Thus, our children will be terribly harmed or will do terrible harm, or both, largely as a result of easy access to firearms.

In a 2-year longitudinal study reported in this issue of Pediatrics, Carter et al2 examined the risk of subsequent gun violence among 2 groups of young drug-using subjects who presented to an urban emergency department. Although the authors found that those presenting initially with assault injury were at higher risk of gun violence compared with nonassault-injured youth, the most striking finding was that all of these youth had a very high risk. Even nonassault-injured patients reported >40% incidence of gun violence during follow-up. Other important risk factors for gun violence were identified, such as an earlier diagnosis of posttraumatic stress disorder and negative retaliatory attitudes, but arguably none of those is as surprising as the sheer magnitude of the risk itself.

The authors2 suggest that the first assault injury provides a teachable moment to intervene, with secondary prevention initiatives targeting the youth identified. Instead, we believe that the high risk demonstrated for all these patients alerts us to begin earlier and further upstream, aiming for the adults responsible for access to firearms and the social norms that contribute to violence.

The United States ranks first internationally in personal firearm supply.3 Gun availability has been associated with increased rates of pediatric gun carrying, weapon use, and serious injury rates.4–6 Our children are not inherently more violent than youth from other countries,7 but the high prevalence of gun carriage8 and ownership by our youth is associated with an increased risk of violent gun deaths.9 Carter et al2 have illuminated the problem in Flint, Michigan. Although the authors acknowledge that their population is singularly urban and uniquely located, firearm possession, carriage, usage, and injury are problems that affect youth across the country, including rural youth10–14; almost all pediatricians, therefore, must deal with gun violence in some form. Youth such as those in the Flint study state that it is easy to obtain a gun,12,15 but there is evidence that young people wish guns were less prevalent or even “impossible to get.”16 Children cannot make that happen alone.

We believe physicians can help to address the proliferation, nonchalant carriage, and excessive injurious use of guns in our communities.17 When a child is shot or shoots, we need to...
1.0 to 1.6 (APC = 6.3, \( P < .05 \)) to the highest rate seen over the period examined. Unintentional firearm deaths exhibited a significant overall decrease between 2002 and 2014 (APC = −2.7, \( P < .05 \)).

**Circumstances and Other Incident Characteristics**

National data on the circumstances surrounding child firearm deaths are not available. Although limited to the 17 states participating in NVDRS during the period of the study, data from NVDRS provide the only detailed and systematically collected circumstance information available regarding the factors surrounding these deaths. These data indicate that during the study period (2003–2013), approximately half of all incidents involving firearm homicides of younger children (aged 0–12 years) had multiple victims versus 13% of incidents with victims aged 13 to 17 years (Table 2). The perpetrator died by suicide in 42% of firearm homicides of younger children versus 6% of cases with older children. Information about the perpetrator’s age was known in 78% of the deaths for younger children and in 54% for older children. Over two-thirds of perpetrators in cases involving younger children were 25 years of age or older. Older children were primarily killed by someone of the same age (13–17 years) or close in age (18–24 years). The vast majority of younger children (85%) were killed in a home, whereas older victims were equally likely to be killed in a home (39%) or on the streets (38%). The majority of younger and older children were killed with a handgun (75% and 85%, respectively).

Firearm homicides of younger children were significantly more likely to be intimate partner violence–related (ie, related to conflict between intimate partners, such as violence between parents), to be incidents in which the victim
Firearm Possession Among Adolescents Presenting to an Urban Emergency Department for Assault

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**Keywords:** firearms, adolescents, violence, emergency department

**Abbreviations:**
- CTS—Conflict Tactics Scale
- ED—emergency department
- RA—research assistant

Dr Carter carried out the analyses, drafted the manuscript, and reviewed and revised the manuscript; Drs Walton and Zimmerman were responsible for the initial conceptualization and design of the study, design of data collection elements, and reviewed the manuscript; Drs Newton and Whiteside assisted with the analysis, drafting of the manuscript, and critical review of the manuscript; Mr Clery assisted with the drafting of the manuscript and critical review of the manuscript; Dr Cunningham was responsible for the initial conceptualization and design of the study, design of data collection elements, aided in the analysis, and reviewed and revised the manuscript; and all authors approved the final manuscript as submitted.

This work was previously presented as Abstract 69, “Carter PM, Newton M, Clery M, Whiteside L, Walton MA, Zimmerman MA, Cunningham RM. Firearm Possession Among Adolescents and Young Adults Presenting to an Urban Emergency Department for Assault,” at the Society for Academic Emergency Medicine, May 10, 2012, Chicago, IL.

**Methods:** Youth (14 to 24 years old) presenting to a Level 1 ED with assault were administered a computerized screening survey. Validated instruments were administered, measuring demographics, firearm rates and characteristics, attitudes toward aggression, substance use, and previous violence history.

**Results:** Among 689 assault-injured youth, 23% reported firearm possession in the past 6 months. Only 17% of those reporting firearm possession obtained the gun from a legal source; 22% reported ownership of highly lethal automatic/semiautomatic weapons and 37.1% reported having a firearm for protection. Logistic regression analysis identified significant correlates of firearm possession, including male gender, higher socioeconomic status, illicit drug use, recent serious fight, and retaliatory attitudes.

**Conclusions:** ED assault-injured youth had high rates of firearm possession (23.1%), most of which were not obtained from legal sources. Youth with firearm possession were more likely to have been in a recent serious fight, and to endorse aggressive attitudes that increase their risk for retaliatory violence. Future prevention efforts should focus on minimizing illegal firearm access among high-risk youth, nonviolent alternatives to retaliatory violence, and substance use prevention. *Pediatrics* 2013;132:213–221
Mortality rates among delinquent Hispanics were more similar to those of African Americans than to non-Hispanic whites, unlike patterns in the general population, in which Hispanic and non-Hispanic whites have similar rates.\textsuperscript{37,38} Delinquent youth continue to have substantially higher mortality rates than the general population in adulthood, irrespective of gender or race/ethnicity. Homicide was the most prevalent cause of death among male (90%) and female (42%) participants; nearly all homicides involved firearms. African-American males had the highest mortality rates but among the lowest mortality ratios because death rates among African Americans in the general population are high.\textsuperscript{37} Our findings mirror racial/ethnic disparities in the general population. In 2010, African-American males comprised 14.6% of the general population aged 15 to 29 years\textsuperscript{11} but nearly 75% of deaths by homicide.\textsuperscript{37} It is difficult to compare our mortality rates with previous studies of delinquent youth because of the aforementioned methodologic differences and limitations. The most comparable longitudinal study found zero deaths among female subjects and much lower overall mortality rates.\textsuperscript{1} The mortality rates found in our study are most similar to those of adults in jail\textsuperscript{39} and prison,\textsuperscript{40–43} who have substantially higher mortality rates than the general population. None of our participants died while incarcerated. This finding highlights the relative safety of correctional institutions because incarceration limits exposure to firearms and automobile crashes.\textsuperscript{34} Re-entry to the community seems to be a time of particular risk, especially for drug overdose and homicide.\textsuperscript{39–41,43}

**Limitations**

It was not feasible to study multiple jurisdictions, and our findings may be generalizable only to detained youth in urban centers with similar demographic compositions. The actual mortality ratios may be even greater than those observed because our sample and the general population are not mutually exclusive; the general population also includes youth who have been detained. Moreover, we may have underestimated mortality ratios for younger males and racial/ethnic minorities because the US Census undercounts these groups.\textsuperscript{44} Because death was relatively uncommon, some 95% CIs were wide. Although retention rates were high, findings on risk factors measured at follow-up may have been affected by missing data.

**Implications**

Our study provides new evidence that modifiable risk factors (alcohol use disorder, gang membership, and drug dealing) are associated with mortality up to a decade after detention. Early prevention is key.\textsuperscript{45,46} Fortunately, promising innovations are available. For example, the Good Behavior Game, administered to school children ages 5 to 9 years, reduced alcohol abuse, violence, and other problem behaviors in young adulthood (ages 19–21 years).\textsuperscript{47,48}
Preventing Gun Injuries in Children

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Educational Gap

Pediatricians need to know evidence-based methods to discuss firearms and protect children from gun-related injuries and violence.

Objectives  After completing this article, the reader should be able to

1. Discuss the epidemiology of gun-related injuries to children.
2. Describe the differences between intentional and unintentional firearm injuries in terms of risk factors and potential interventions.
3. Discuss how to engage families in assessing risk for gun-related injuries.
4. Use evidence-based strategies in clinical and community settings to reduce the risk of gun-related injuries.

Abstract

Firearms are involved in the injury and death of a large number of children each year from both intentional and unintentional causes. Gun ownership in homes with children is common, and pediatricians should incorporate evidence-based means to discuss firearms and protect children from gun-related injuries and violence. Safe storage of guns, including unloaded guns locked and stored separately from ammunition, can decrease risks to children, and effective tools are available that pediatricians can use in clinical settings to help decrease children’s access to firearms. Furthermore, several community-based interventions led by pediatricians have effectively reduced firearm-related injury risks to children. Educational programs that focus on children’s behavior around guns have not proven effective.

REPORT OF CASES

Case 1

Mike is a 16-year-old boy who is brought to clinic by his father for a same day appointment. You have seen Mike for years and helped him find a counselor 9 months ago after diagnosing him as having depression. He and his father