

# Pediatric Firearm Safety: A Call to Action for Nurses

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September 30, 2023

DOI: 10.3912/OJIN.Vol28No03Man03

## Article

### Abstract

The number of pediatric deaths and injuries by firearms per year is at a record high, and firearms are now the leading cause of death in children and young adults in the United States (US). Legislation is slow to develop, partly because of the often contentious discussion of the rights to firearm ownership. Nurses are uniquely positioned to address this issue neutrally at the micro, meso, and macro levels. Nurses are called to action at the bedside, as Advanced Practice Registered Nurses (APRN), and through research, education, and policy initiatives to reduce pediatric injury and death by firearms.

**Key Words:** guns, gun safety, youth, nurses, APRNs, gun policy

The increasing number of mass shootings has startled Americans like few other events in the recent past. How best to regulate guns has become a long-standing argument that has unexpectedly divided the country. Gun owners and those who believe it is a fundamental right to own and use guns conflict with those who believe there are insufficient controls and too many available guns. While this is seemingly a never-ending conflict, the underlying concern is that people, and for the concern of this discussion, children, are not only being injured by guns but dying from gunshots, at near-record levels.

Approximately one-third of all homes in the US have guns, with an estimated 4.6 million kids living in these homes ([Schaechter, 2023](#)). No one on either side of this conversation wants to see children hurt or killed by guns. This discussion avoids the dichotomous argument of gun ownership rights vs. prohibition and investigates how gun safety for pediatric patients can be better achieved. While we as a country have not settled the argument of gun ownership, gun safety, and injury have become a public health issue and should be proactively addressed by health care providers. A neutral plan to better protect children can be developed, instituted, and promoted by disconnecting the emotionally laden debate of gun ownership rights.

**Nurses at all levels of practice are in unique positions to affect change to improve pediatric gun safety.**

Nurses at all levels of practice are in unique positions to affect change to improve pediatric gun safety. From bedside nurses to nurse policymakers, opportunities and professional obligations exist to improve pediatric health through various interventions and activities. On a micro level, nurses interact with pediatric patients in inpatient and outpatient settings and with their parents. On a meso level, nurses interact at the community, county, state, and national levels. Finally, on a macro level, nurse researchers and policymakers can impact the issue through data-based research, application, education, and policy regulations.

## Background

While even one pediatric shooting victim is unacceptable, the statistics provide a strongly sobering picture of pediatric deaths caused by guns, both accidental and intentional. Firearms have become the leading cause of death in children and young adults, with accidental death occurrences four times higher in homes with firearms ([Lee et al., 2022](#); [Schaechter, 2023](#)). Furthermore, between 2015 and 2022, over 1000 deaths and even more injuries by children ages 17 and younger resulted in 1083 deaths and 1815 nonfatal gun injuries ([Schaechter, 2023](#)). Even young children have been involved in shootings; studies found that children as young as three can physically pull a trigger ([McCarthy, 2019](#); [Naureckas, 1993](#)). Moreover, in a study examining children's abilities to differentiate between a toy gun and a real gun, only 40% could do so, despite much higher parental beliefs of their children's ability to distinguish the two ([Doh et al., 2019](#)).

The risk of suicide is also four times greater in homes with guns. Forty percent of suicides involving children and teens involved guns; in nine out of ten cases, the guns used were accessed at home ([Schaechter, 2023](#)). During the COVID-19 pandemic, there was an increase in the number of pediatric gun deaths ([Cohen et al., 2021](#)). Contributing risk factors of increased gun deaths include increased gun ownership, anxiety, decreased supervision, increased time at home, stress, and mental health issues related to the pandemic ([Donnelly et al., 2021](#); [Cohen et al., 2021](#)).

Using Winslow's definition, the Centers for Disease Control and Prevention identifies public health as the science and art of preventing disease, prolonging life, and promoting health through the organized efforts and informed choices of society, organizations, public and private communities, and individuals ([CDC, 2014](#)). This definition is easily applied to gun safety and provides an impetus for nurses well-suited to lead and participate in strategies to address this public health issue. Nurses must be actively involved at all levels of care and settings to improve firearm safety and reduce pediatric deaths.

### Precedence for Nurse Involvement in Population Safety Initiatives

Historically, nurses have been involved with regulations and laws that serve to improve overall public health. Due to an increase in pediatric deaths related to motor vehicle accidents, car seat usage was regulated within all states by 1985 ([Bae et al., 2014](#)) with nurses still involved in the implementation of the programs ([Angulo-Vazquez & DeSantis, 2005](#); [Righi & Krozy, 1983](#); [Murphy, 1999](#); [Lincoln, 2005](#); [Williams & Martin, 2003](#)). Even today, bedside nurses are involved with car seat laws through hospital discharge planning and instructions to parents of newborns and hospitalized children of car seat age and weight who must leave the setting with appropriate car seats ([Grey, 1998](#)). Outpatient nurses reinforce this regulation through prenatal appointments and routine well-child visits. Advance practice nurses include this education in their anticipatory guidance care as they discuss car seat and booster usage with their patients' families ([Grey, 1998](#)).

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Poisoning is another example of a public health issue that is regulated due to previous unintentional deaths. Poisoning by ingesting medications and toxic household chemicals has long been an issue in the United States ([Gaither, 2023](#)). As such, medications and household chemical containers have been regulated since the 1970s, ([Budnitz & Malani, 2020](#)), requiring "child-proof" strategies to avoid accidental poisoning. Today, poisoning by accidental opioid ingestion is at the forefront of public health issues nationwide ([Gaither, 2023](#)). Nurses at all levels play a role by educating patients and families regarding the safe use and storage of chemicals and medications, particularly opioids, cough syrups, and other abuse substances ([Gaither, 2023](#)).

Lead paint poisoning continues to be a significant public health issue, with risk factors of poverty, housing built before 1978, and use of unregulated foods, medications, and pottery ([Mayans, 2019](#)). The CDC recommends screenings for lead poisoning for all children. But it is required screening at 12 and 24 months for Medicaid recipients ([CDC, 2023](#); [Ettinger et al., 2019](#)). Public health nurses, hospital and outpatient nurses, and APRNs screen patients as recommended by the CDC. If children are found to have high levels of lead, nurses and healthcare providers treat the child to prevent long-term effects on development ([Ettinger et al., 2019](#)).

Finally, another public health safety issue nurses address is sudden infant death syndrome (SIDS) through the Back to Sleep (BTS) campaign ([Price et al., 2007](#)). The recommendations for supine positioning by the American Academy of Pediatrics ([Moon et al., 2022](#)) have been universally incorporated in hospitals and other settings in the U.S. Moreover, this positioning has been regulated in publicly funded daycare centers since 2003 ([Moon et al., 2006](#)). Not only do nurses follow these protocols in hospitals, but they have also researched the effectiveness of the campaign ([Rowe et al., 2016](#); [Price et al., 2007](#); [Gelfer et al., 2013](#); [Newberry, 2019](#); [Patton et al., 2015](#)). Further, nurses in various other settings included it in education sessions ([Newberry, 2019](#)).

Various technologies exist for gun safety. Physical barriers, such as gun safes and gun boxes, require a key, fingerprint, or combination to open. Fingerprint locks might be best suited to families with children as they require the owner to access the gun or ammunition. Storing guns and ammunition separately is safest to prevent accidental firing. For some families, cost and access to safety mechanisms could be barriers to use. Assessing for these issues during patient and family encounters is essential to using these safety measures.

### **Nurses' Call to Action**

These examples provide substantial precedence for nurses at all levels to engage in education, research, policy development, and practice that advocates for firearm safety among the pediatric population in the United States. Nurses have widespread and unique opportunities to interact with the critical stakeholders of patients, families, communities, and local, state, and federal policies to create meaningful change in preventing firearms-related deaths. Nurses at all levels, from direct care registered nurses (RN) to APRNs, to nurse educators, researchers, and policymakers, are called to champion gun safety initiatives. For example, nurses at the bedside can undoubtedly make an impact toward improving gun safety through parent and patient education. Beyond this micro level, nurses and APRN providers can impact the meso level by assisting in creating and implementing programs at the local community and statewide levels, and on the macro level as educators, researchers, and policymakers.

At the micro level, nurses caring for pediatric patients at the inpatient bedside, regardless of the reason for admission, can start or continue a neutral conversation about gun safety. As part of discharge planning, the conversation should include safe storage of both the gun and the ammunition, discussions with friends' parents regarding their gun safety while children are visiting, and ways to discuss gun safety with their children ([Doh et al., 2019](#)). Program initiatives, similar to safe sleep and car seat campaigns, could provide resources for firearm safety for patients and families. For example, hospitalized pediatric families with guns could leave the hospital with a lock box if they cannot access one, similar to how car seats are donated within some communities. The outpatient nurse can address gun safety at both well-child and sick visits. Normalizing conversations on gun safety at pediatric visits may allow for education, discussion and questions about keeping children safe from guns across settings. Approached as part of holistic care, gun safety discussions can become as routine as car seat or poisoning safety education.

Advanced practice nurses can further address gun safety with their patients. Regardless of their practice setting, the APRN's role in diagnosing and treating health issues suggests the responsibility to ascertain gun safety. One specific screening that supports gun safety is that of risk for suicide. Beyond this screening, specific discussions of methods of gun safety should be included, including the use of separate lock boxes for both the gun and ammunition, trigger locks, and new methods of gun safety as they are developed. Parents should be encouraged to discuss openly with their children about what to do if and when they see a gun. Further, using an educational handout, similar to a vaccine information statement required to be given with immunizations, can normalize gun safety discussions across all areas of care. Additionally, it would be helpful to have examples of gun safety mechanisms within the office to teach about their use specifically and request return demonstrations by patients or families.

At the meso level, school and public health nurses interacting with children and families in various ways and across multiple settings must also prioritize gun safety education. This can be done individually through interactions with children and their parents, or in various settings such as school programs and community information sessions. These sessions can be geared toward the general population and communities with health disparities related to gun violence. Social media platforms could also provide a platform for nurses to create content regarding gun safety that may reach wider audiences.

At the macro level, collaborations with producers of guns and safety mechanisms may impact gun safety. Partnerships between APRNs and community members, such as the police or school systems, can provide opportunities for educational programs. These programs could have a designated focus on gun safety without engaging in discussions of gun ownership rights, which is a deterrent for many conversations around gun safety.

### **Table 1. Nurse Involvement in Gun Safety Initiatives**

**Registered Nurse**

- Inpatient
  - Screening
  - Education at Discharge
- Outpatient/Community
  - Screenings
  - Education
  - School programs

**APRN**

- Individual
  - Anticipatory Guidance
  - Screening
  - Education about specific safety measures
  - Application of research findings
- Group
  - Community presentations/education
  - Education about specific safety measures
  - Application of research findings

**Research/Education**

- Funding Acquisition
- Partnerships with safety item manufacturers
- Interprofessional collaboration in research on risk reduction
- Development of applications for gun safety

**Policy**

- Translate research findings into policy to create best practices
- Collaborate with professional organizations
- Collaborate with regulating organizations

**Future Areas of Research and Policy Initiatives**

Nurse researchers, educators, and policymakers have the opportunity to design and participate in research to determine the products that are best used to keep patients safe. A disproportionate amount of funding is spent on researching gun safety and gun deaths compared to other pediatric deaths ([Lee et al., 2023](#)). Pediatric death by firearm research funding trails dramatically behind research funding for motor vehicle and cancer deaths. In the years between 2008 and 2017, only \$597 was spent on researching pediatric firearm deaths, while \$26,136 and \$195,508 were spent on motor vehicle and cancer-related pediatric deaths, respectively ([Lee et al., 2023](#)). With firearm death as a leading public health issue, more funding needs to be developed and used for research into the design of firearm safety strategies. Research in areas contributing to high firearm deaths could help understand the specific safety needs of the population ([Gramlich, 2019](#)). O'Keefe and White ([2019](#)) examined how the perception of firearm safety methods and feelings of safety correlated with firearm injuries and deaths but found mixed results pointing to the need for further study. Research on how people view gun safety tools and their effectiveness should also be addressed to create meaningful safety programs ([O'keefe, & White, 2019](#)). Understanding why guns are kept at homes could help identify how best to keep those safe; guns used for occasional hunting trips could be kept more securely and further away from children, while owners keeping guns for protection would likely want closer and easier access. Additionally, further research into how children react around guns is necessary, as earlier research suggested that over 40% of children whose parents predicted were well-educated in safe gun behavior did not respond safely in the presence of a gun ([Connor & Wesolowski, 2003](#)). Finally, examining how healthcare provider screening and intervention impacts unintentional injury, suicide, and homicide would be ideal for developing meaningful programs, policy, and education.

Nurses at the policy-making level can contribute widely to improve gun safety. Nurses involved in policy can partner with professional organizations to spread the word about gun safety initiatives. Translating research evidence on gun safety can influence policymakers to work toward responsible regulation of gun use, similar to what was done regarding car seat regulation and usage mandated due to an increase in motor vehicle deaths involving children and child safety caps for medication and toxic chemicals addressing increased rates in poisoning.

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**The current public health issue of pediatric firearm injury and death must be addressed from various intervention points at the individual, community, state and national levels.**

Removing guns and regulating gun ownership is an argument that has no clear answer in the United States. Decreasing youth unintentional death, suicide, and homicide by firearm is a goal that can unite the debate on gun ownership in the United States. As policymakers, it is imperative to focus on *risk reduction* (Lee, 2023) rather than the *removal* of guns from homes. Risk reduction requires multiple interventions working together towards a common goal. Just as parents must have car seats for children of specific weights, and medications and toxins must have safety caps, so should gun safety be mandated to reduce injury and death by firearms.

## Conclusion

The current public health issue of pediatric firearm injury and death must be addressed from various intervention points at the individual, community, state and national levels. As with many public health issues, nurses have the opportunity and obligation to intervene and support pediatric firearm safety initiatives across practice levels. Through individual and community interventions, and research, education, and policy making activities, nurses have the ability to help keep our pediatric population safer from firearm injury and death.

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**Citation:** Schoenewald, C.S., (September 30, 2023) "Pediatric Firearm Safety: A Call to Action for Nurses" *OJIN: The Online Journal of Issues in Nursing* Vol. 28, No. 3, Manuscript 3.

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