


This Is Our Lane: The Urgent Need to Train Residents to Talk About Firearm Injury Prevention for Children

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The Impact of Firearm-Related Injuries

Firearm injuries are currently the leading cause of death of 1-to-19-year-olds in the United States, surpassing motor vehicle injuries as the leading cause of death in 2020.^{1,2} The United States is the only country among its peer nations where children die more often from firearms than motor vehicle-related injuries and cancer.³ Many firearm-related injuries or deaths are impulsive in older children or unintentional in younger children, meaning a significant proportion may be preventable with safe firearm storage.⁴ Safe storage is a national priority and strongly encouraged by major health organizations.⁵ Since 1992, the American Academy of Pediatrics (AAP) has recommended that pediatricians counsel families on firearm injury prevention (FIP).⁶ In 2022, the AAP advocated for a multipronged harm reduction approach to FIP, anticipatory guidance being a key component.¹ The AAP further recommends education for clinicians, including trainees, in injury epidemiology and techniques for providing guidance to prevent firearm injury and death, including safe storage.¹ Organizations such as the American College of Emergency Physicians, the American College of Osteopathic Family Physicians, American College of Physicians, the American College of Obstetrics and Gynecology, the American College of Surgeons, the American Academy of Family Physicians, the American College of Osteopathic Pediatricians, the American Osteopathic Association, and others advocate for measures to reduce this public health crisis.⁷

Physicians should counsel patients and families on FIP, but their ability to do so requires training. Residency represents a critical time of competency training to acquire appropriate counseling skills. In 1997, Price et al published a study of pediatric residency program directors (PDs) assessing the proportion of

residency programs with formal training in FIP counseling.⁸ To our knowledge, there have not been any assessments of firearm injury prevention training in residency programs since this study. Several studies since demonstrate that while residents agree physicians have a duty to counsel families about FIP, they rarely feel confident enough and rarely do.⁹⁻¹¹ However, pediatric residents with formal training, (web-based, workshop-based, or in-person/in-clinic training) report more confidence and ability to provide FIP counseling.¹²⁻¹⁴

How Are We Doing With Educating the Next Generation?

In the spring of 2021, we emailed a modified version of the 1997 Price et al survey⁸ (online supplementary data, via LimeSurvey) to the Association of Pediatric Program Directors listserv members and de-identified the responses (response rate 20% [39 of 196]). Eighty-seven percent (34 of 39) of PDs reported their patient population has an “average” or “high” risk of firearm injury or death. For responding program characteristics, see online supplementary data TABLE 1.

Eleven programs offered some form of training in FIP for residents, including lectures, rotations in advocacy or community health, formal advocacy opportunities (ie, meeting with legislators), and discussions with outpatient attending physicians (online supplementary data TABLE 2). Despite 100% PD agreement (37 of 37 respondents) that “Easy access to firearms in the United States is a public health crisis,” 97% agreement (36 of 37 respondents) that “Pediatricians have a responsibility to counsel patients/families about FIP,” and 89% agreement (33 of 37 respondents) that “FIP counseling should be incorporated into the pediatric residency training curriculum,” only 8 of the 39 programs (21%) offered formal training in FIP, 72% (28 of 39) of programs did not, and 8% (3 of 39) were unsure (online supplementary data TABLE 3). The most cited barriers to incorporating FIP counseling training into the

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Editor's Note: The online supplementary data contains the survey used in the study and further data from the study.

TABLE

Resources Available for Residency Programs Regarding Firearm Injury Prevention Educational Materials

Resource	Target Type of Trainee	Type of Resource	Description
Locked and (Un)-Loaded Discussions: A Pediatric Resident Safe Firearm Storage Counseling Curriculum ¹⁶	Pediatrics, but applicable to FM, EM	Interactive curriculum published on MedEdPortal	Adaptable interactive safe firearm storage counseling curriculum.
“Safer: Storing Firearms Prevents Harm,” from the American Academy of Pediatrics ¹⁷	Pediatrics, but applicable to FM, EM	Online educational module	Describes universal firearm injury prevention guidance for pediatric professionals in clinic settings, offers pragmatic video counseling examples based on existing evidence, and provides resources.
Be SMART for Kids ¹⁸	Pediatrics, but applicable to FM, EM	Videos, handouts	Videos and handouts/informational material created for parents/families but can be informative and useful for trainees to learn from as well.
University of Michigan Institute for Firearm Injury Prevention ²¹	Any	Massive Open Online Courses, online videos, seminars	
The BulletPoints Project ²⁴	Any	Many resources, videos, modules, and includes an Educators Toolkit	Educators Toolkit: designed to be used by educators with some basic background knowledge of FIP as a public health problem—for learners of varying backgrounds in mind, including medical, nursing, social work, and psychology students and can be incorporated into a wide range of settings, from large lectures to small group discussions.
“Clinicians and Firearms” by Stanford Medicine and Scrubs Addressing the Firearm Epidemic (SAFE) ¹⁹	Any	Self-paced course consisting of 3 modules	Three modules: Epidemiology, Firearm Basics, and Providers and Firearms. This course is intended primarily for medical students, physicians, and other health care professionals to understand the current state of gun violence in the United States, basic firearm terminology, and what we can do in the health care setting to prevent firearm injury for our patients.
Gun Violence Prevention Training Program for First-Year Residents ²⁹	Psychiatry, EM, Surgery, Pediatrics, IM, OB/GYN	Two-part training curriculum for first-year residents	(1) A didactic presentation outlining a framework to understand types of firearm-related violence, resources, and reviewing strategies for approaching discussions about firearms, and (2) interactive case scenarios.
Pediatric Resident-Led Firearm Curriculum on Safe Storage Counseling ³⁰	Pediatrics	Series of 3 workshops	A firearm safety workshop series developed by and led by pediatrics residents over the course of one academic year.

Abbreviations: FM, family medicine; EM, emergency medicine; IM, internal medicine; OB/GYN, obstetrics/gynecology; FIP, firearm injury prevention.

curriculum were lack of time, knowledgeable faculty, funding, and educational resources.

These findings are concerning given that firearm injuries, the number one cause of death in US children,

are still increasing. Based on our findings, most pediatric residency PDs agree about the importance of FIP counseling education and are interested in incorporating it into their curricula. Compared to prior results,⁸

our findings represent a shift in attitude; however, few PDs incorporate formal FIP into their curricula due to perceived implementation barriers. What strategies may be useful to conquer these obstacles and implement FIP teaching in relevant residency programs?

Potential Strategies to Overcome Barriers and Add Training in FIP

Time constraints, one of the main perceived barriers, are difficult to fix; however, residency programs devote time to safety counseling education on other topics. Given that firearm injuries are the primary cause of death among children, injury prevention in this domain should be prioritized.

Reported barriers of lack of knowledge, lack of trained personnel to provide education, and lack of funding for this type of education highlight the need for FIP training curricula that can be shared by programs. For example, an advisory group has published a data- and consensus-driven report on priorities for firearm injury education in different domains, regardless of specialty training type.¹⁵

A first step for PDs is to consider the amount of time within an already full curriculum that might be allotted to this important topic. While having dedicated time for FIP counseling training is important, one consideration could be to start with looking at other areas of existing injury prevention curriculum to assess how FIP can be emphasized. For example, when emergency medicine residents learn about other aspects of counseling on preventing motor vehicle injuries by discussing car seats or head injuries on bicycles by talking about helmet usage, they can also learn ways to give guidance about safe gun storage for firearm injury prevention. A second step could be to review the existing resources (see below and TABLE) and determine what is feasible to implement. The next step, depending on the method chosen, would be to gauge interest among faculty and/or residents, or other health professionals to facilitate sessions on this topic, and to schedule when this education will take place.

Many resources are readily accessible (TABLE), obviating the need for programs to “start from scratch.” A pilot study in pediatric residents showed improvement in knowledge about safe storage, increased self-efficacy in behavioral counseling, and decreased perceived barriers to counseling by using resources from the University of Michigan Institute for Firearm Injury Prevention.^{20,21} Additionally, videos and handouts about safe storage practices from the Be SMART campaign have been well-received by families.²² Resources that address a specialty such as pediatrics can be adapted to other specialties, and vice versa.²³⁻²⁸ A novel case-based

curriculum administered to first-year residents across multiple disciplines, including pediatrics, emergency medicine, obstetrics and gynecology, psychiatry, and general surgery, as well as a resident-led workshop-based curriculum in pediatrics, improved both resident knowledge of and comfort in discussing firearms with patients and families.^{29,30} Interested PDs can choose from aspects of these available tools that are appropriate for their resident and patient population.

In recent years, great strides have been made to increase FIP efforts at many levels; however, FIP must remain a national public health priority and become a key priority in trainee education. While not currently an Accreditation Council for Graduate Medical Education requirement for pediatric residency programs, FIP education should be a training requirement for pediatrics as well as other specialties that treat children and their families, given that firearm injuries are the leading cause of death in children, a cause that is largely preventable.

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