ORIGINAL ARTICLE

PROMOTING GUN SAFETY FOR CHILDREN AND FAMILIES THROUGH THE PEDIATRIC EMERGENCY DEPARTMENT

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ABSTRACT

Background: Firearm injuries are the leading cause of death among children in the United States. Pediatric emergency departments (PEDs) offer an opportunity for injury prevention, though firearm safety interventions are not routinely implemented.

Objective: To evaluate the feasibility and impact of a PED-based firearm safety intervention using video education, gun lock distribution, and caregiver surveys.

Methods: We conducted an IRB-approved pilot study in a community PED in Newark, New Jersey (June 2025–February 2026). English-speaking caregivers of pediatric patients were recruited as a convenience sample. Participants viewed a 5-minute firearm safety video, were offered a gun lock, and completed a pre-survey assessing knowledge, beliefs, and behaviors. A follow-up survey was conducted at 6 months. Quantitative data were analyzed descriptively; qualitative responses were categorized into themes.

Results: Of 27 consented participants, 25 completed the pre-survey and 6 completed follow-up. Caregivers reported strong support for safe storage practices and clinician-led counseling, and most found the intervention acceptable and educational. At follow-up, 4 of 6 respondents reported increased inquiry about firearm storage in homes their children visit. Qualitative responses suggested increased awareness and behavior change.

Conclusions: A brief PED-based firearm safety intervention is feasible and well accepted, with preliminary evidence of improved caregiver awareness and behaviors.

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ABBREVIATIONS

Pediatric Emergency Department (PED).

Introduction

Firearms injuries are the leading cause of death among children and adolescents in the United States, with most fatal incidents involving younger children occurring at home. Rates of unintentional firearm-related suicides and injuries continue to rise, disproportionately affecting Black children, males, and adolescents.[1] Healthcare providers play a critical role in promoting child safety; each encounter with pediatric patients and their families, including visits to the pediatric emergency department (PED), represents a meaningful opportunity to discuss firearm safe storage.

Prior research demonstrates video-based education effectively influences health behaviors, including firearm safety practices in pediatric settings.[3] Guided by this evidence, we implemented a firearm safe storage educational intervention in the PED to aid families in adopting safer home practices.

Supported by an internal institutional pilot grant, this study aims to assess the impact of a pilot harm-reduction educational intervention consisting of: 1) firearm safety video, 2) distribution of gun locks, and 3) pre-survey and post-survey assessing parents' and guardians' knowledge, beliefs, and practices related to firearm safety within a community PED.

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Materials And Methods

Study design and setting: We conducted this IRB-approved pilot study in the PED at University Hospital (Newark, New Jersey) from June 2025 to February 2026 to evaluate the impact of our firearm safety educational intervention.

Recruitment and participants: Families were recruited as a convenience sample during times when trained research staff were present in the PED. Eligible participants were parents/guardians (≥18 years) accompanying children (<18 years) presenting to the PED for any chief complaint (i.e., not limited to firearm-related injury visits).

Inclusion criteria: (1) parent/guardian present with the pediatric patient, (2) English-speaking, and (3) able to provide informed consent.

Exclusion criteria: Families were not approached when urgent clinical care or workflow constraints precluded safe/feasible consent and participation (e.g., active resuscitation or immediate procedures). Non–English-speaking caregivers were excluded because study

materials were only available in English during this pilot.

Intervention Workflow: After informed consent, participants 1) viewed a 5-minute firearm safe-storage video created by Be SMART (Be Smart for Kids);[3] 2) were offered a firearm safety device (gun trigger lock) during the PED visit; and 3) completed a survey assessment of caregiver knowledge, beliefs, and reported practices.

Survey Instrument: Participants completed an anonymous electronic survey assessing demographics, baseline beliefs and attitudes regarding firearm injury prevention, household firearm access/ownership, caregiver-reported practices, including frequency of asking about firearms in homes their children visit, and perceived knowledge gain/acceptability of the video and the gun lock. The survey instrument was developed by the study team based on clinical experience and review of relevant literature and was not derived from a previously validated instrument.

Follow-up: Approximately 6 months after the initial PED visit, participants with valid phone numbers were contacted for a follow-up survey using parallel items to assess disclosed practices and perceptions over time. Participants were contacted 1–5 times over 1 month, depending on whether they answered, requested a callback, or did not answer. Follow-up respondents were asked whether they were the same caregiver who completed the initial survey.

Analysis: The primary outcome was caregiver-reported firearm safety knowledge and behaviors. General qualitative themes were identified from free responses, and quantitative data were analyzed using descriptive statistics, including proportions and 95% confidence intervals (CIs).

Results

A total of 27 patient families presented to PED consented and met inclusion criteria; 25 completed the pre-surveys and accepted the gun lock and were included in the analysis (25/27 = 92.6%).

At 6 months follow-up, 24 of the 25 initial participants were contacted, and the 1 remaining participant had not left a phone number. Of these, 6 completed the post-survey. Five phone numbers were no longer in service, and 13 participants either declined participation or did not answer.

Among the pre-survey cohort, pediatric patients ranged in age from 3 months to 17 years (mean age: 8.3 years); 62.5% were male, and 37.5% were female. Caregivers' ages ranged from 24 to 61 years (mean 37 years), and 66% of caregivers were female. In the post-survey cohort, pediatric ages ranged from 6 months to 13 years (mean age: 5 years and 7 months); all children were male. Caregivers' ages ranged from 27 to 45 (mean 36 years), and 66% were female. All caregivers who completed the post-survey reported that they had also personally completed the pre-survey.

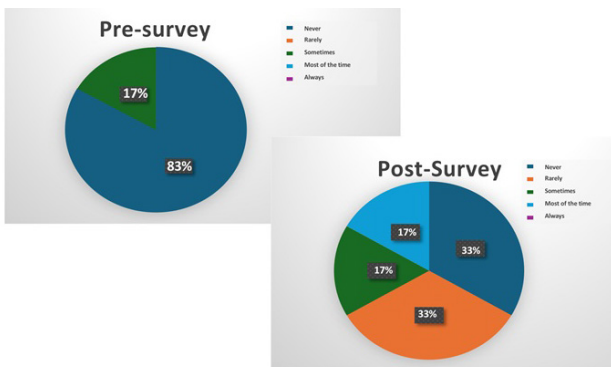
Most pre-survey caregivers endorsed the importance of gun safety devices, supported clinician-led firearm safety discussions, favored stricter firearm laws and background checks, and reported the video improved their knowledge. Specifically, 84% agreed/strongly agreed that gun owners should use firearm locking devices; 72% agreed/strongly agreed that healthcare providers should discuss firearm safety during medical encounters including ED visits; 68% agreed/strongly agreed that stricter gun laws decrease gun-related violence; 84% agreed/strongly agreed that background checks should be stricter; and 68% agreed/strongly agreed that the Be SMART video improved their learning/knowledge (Table 1). Opinions regarding the right to carry firearms remained mixed across survey responses (Figure 1).

In the post-survey cohort, respondents reported continued endorsement of gun safety devices as helpful anticipatory guidance (Table 1). Although post-survey respondents reported not personally owning firearms,

Table 1. Percentage of Pre-survey and Post-survey Families in Support of Fire Safety Initiatives

Statement	% Pre-survey agreed/ strongly agreed	% Post-survey agreed/ strongly agreed
There should be stricter laws for background checks on guns/firearms	84% (95% CI: 0.65 - 0.94)	100% (95% CI: 0.61 - 1.00)
The video improved my learning about gun/firearm violence and injury prevention	68% (95% CI: 0.48 - 0.83)	83% (95% CI: 0.44 - 0.97)
Stricter gun laws will decrease gun-related violence and injuries	68% (95% CI: 0.48 - 0.83)	50% (95% CI: 0.19 - 0.81)
People should have the right to carry guns/firearms for protection	36% (95% CI: 0.20 - 0.55)	50% (95% CI: 0.19 - 0.81)
Healthcare providers should discuss gun/firearm safety during medical encounters including ED visits	72% (95% CI: 0.52 - 0.86)	83% (95% CI: 0.44 - 0.97)
Gun owners should all use gun/firearm locks devices (such as trigger locks or cables, gun lockboxes)	84% (95% CI: 0.65 - 0.94)	100% (95% CI: 0.61 - 1.00)

Figure 1: Pre-survey to Post-survey Changes in Caregiver Inquiry regarding Firearms in Homes Children Visit



Pre-survey and Post-survey Changes in Caregivers` reported frequency of Inquiring about firearms in homes visited by their children, expressed as the percentage of respondents selecting each response category.

several described valuing having a gun lock for potential future firearm purchases or sharing with others in homes their children visit. One caregiver indicated they had recently received a permit to purchase a firearm and anticipated using the provided gun lock.

On follow-up, 4 of 6 caregivers reported asking about firearm storage in homes their children visit more often than they did before the PED visit (Figure 1). Qualitative responses suggested both the video and survey were educational, prompting reflection. The free-text responses were reviewed and grouped into recurring themes. One caregiver reported asking her child's grandmother whether her firearm was secured and requested that the firearm safe not be opened with children present.

Discussion

Firearm sales and violence have surged markedly since 2020, accompanied by a substantial increase in pediatric firearm-related mortality. From 2019 to 2020 alone, firearm deaths among children increased by 30%.[4] Black children and adolescents remain disproportionately affected, with mortality rates four times higher than those of their white counterparts.[5] The continued post-pandemic escalation in firearm violence,[6] combined with the growing mental health burden and ease of access to firearms, is particularly concerning.

Individuals who purchased firearms during the pandemic were more likely to experience firearm violence personally,[7-9] and many of these households include children. These dynamics underscore the need for harm reduction approaches that begin within the clinician-patient relationship. Prior studies demonstrate parents are receptive to safety counseling; after viewing video-based firearm safety modules, most reported intentions to improve home storage practices and felt it was appropriate for clinicians to provide firearm safety guidance.[10]

Healthcare providers are well-positioned to deliver evidence-based firearm harm reduction counseling in the PED. Our pilot suggests that a brief PED-based harm-reduction intervention pairing standardized video education with access to a safe-storage device can be implemented in a community PED and is acceptable to many caregivers.

This aligns with prior ED-based prevention work demonstrating that ED encounters can be leveraged to deliver safety counseling and distribute devices. Posner et al. showed that ED-based education, combined with the distribution of safety devices, improved caregiver-reported home safety practices at follow-up.[11] More recent pediatric ED work similarly supports the use of video-based counseling paired with lock distribution to increase caregiver intentions and secure-storage behaviors.[12]

Importantly, caregiver inquiry about firearms in homes children visit may represent practical harm-reduction behavior. In our small follow-up sample, most respondents who completed follow-up described asking about firearm storage more often than before their PED encounter, suggesting a potential shift toward safer norms and conversations. However, given the limited follow-up sample, these findings should be interpreted cautiously.

Limitations: This study has several limitations. The post-intervention survey response rate was lower than the pre-survey rate, raising concerns about nonresponse bias and limiting statistical comparisons. The study was conducted at a single site and was limited to English-speaking caregivers, potentially limiting generalizability. Survey-based data are also subject to social desirability and self-selection response biases. We did not systematically capture the number of eligible families approached but not enrolled, limiting our ability to report an approach-to-enrollment denominator. Finally, without a control group, we cannot attribute behavior changes solely to the intervention, and future studies should consider randomized controlled designs. Future work should include a larger cohort, improved follow-up capture, incorporation of validated survey measures where feasible, including the caretaker relationship to the child, and expansion to additional clinical settings to assess the intervention's scalability and impact.

Conclusion

Pediatric emergency departments provide a valuable opportunity to promote firearm safety, especially in communities disproportionately affected by gun violence. Brief caregiver inquiry, educational videos, and gun lock distribution may improve safe storage. Pediatricians in all settings can advance firearm injury prevention as part of a broader public health initiative.

Compliance with Ethical Standards
Funding: None
Conflict of Interest: None

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