

PROTECTING YOUTH FROM UNINTENTIONAL FIREARM INJURY: ADDRESSING THE RESEARCH GAPS

Firearm-related injuries continue to be a leading cause of death among youth.¹ Despite significant national attention to shootings involving children, and resulting calls for gun reform, not enough has been done to address evidence gaps or promote policies that have been proven effective in helping to prevent child injury and death from firearms. During the COVID-19 pandemic, there has also been an unprecedented increase in firearm sales, adding to the urgency to understand how to keep children safe in a home where guns are present.

Federal funding for firearm research was severely restricted for more than 20 years, which means we lack data on which policies, programs, and approaches can best protect children and teens from the dangers of firearms. Much of the research that does exist has significant limitations: data may be focused only on adults, may include a small sample size or may not be generalizable to other settings. However, since 2019, Congress has specifically allocated funds to the Centers for Disease Control and Prevention and National Institutes of Health to study gun violence, opening up the opportunity to fill critical research gaps.

There is urgency for action on the issue of firearm-related injuries, and reducing the risk of unintentional firearm injury and death among children is an important starting point for intervention. To support discussions and interventions on firearm safety that take place in pediatric clinical settings, as well as others, we need to better understand which public policies and interventions work to protect youth against unintentional firearm injury and warrant immediate action, and more research on those for which the evidence is not yet clear.

This brief summarizes findings from a policy and research review, including 53 peer-reviewed studies of gun-related policies and interventions, in the hope that it will spur action at the state and federal levels to support evidence-based policy, and drive research and funding to fill the evidence gaps.



*In 2019, there were at least **309** unintentional shootings by children age 17 and under, resulting in 120 deaths and 203 injuries.⁶*

EVIDENCE-BACKED POLICIES FOR IMMEDIATE ACTION

COMPREHENSIVE BACKGROUND CHECKS

Our review found strong evidence in favor of comprehensive background checks in reducing overall firearm-related mortality, specifically those that eliminate private sale loopholes. Comprehensive background checks were also shown to directly reduce adolescent gun possession.²

CHILD ACCESS PREVENTION (CAP) LAWS

For the prevention of firearm-related injuries among children, the safest home is one without firearms.³⁻⁵ However, when a firearm is present, gun storage practices have a direct impact on unintentional injury risk in children. There is strong evidence that negligence-based CAP laws—which impose criminal liability if a gun owner neglects to safely store a gun in a home with children—reduce unintentional child injury or death due to firearms.

For more details on our approach to this research and policy review, as well as a full list of recommendations, read our accompanying *Evidence to Action* brief, available at: bitly.com/Preventing-Unintentional-Firearm-Injury

FILLING IN GAPS IN FIREARM RESEARCH

Groups such as the Firearm Safety Among Children and Teens (FACTS) Consortium have developed key priority areas for pediatric gun safety.⁷ Based on this work and our own, we recommend the following priorities for research to examine how to address unintentional firearm injuries in children:

→ **Identify components of firearm safety education that will improve safe firearm storage among gun owners.** Studies suggest that firearm counseling combined with providing a free gun storage device may result in lasting improvements in safe storage behaviors. However, data on how best to implement these interventions is very limited. More research is needed to develop and promote firearm safety education programs for gun owners that directly reduce child injury and death.

→ **Redirect firearm safety education toward adults.** Firearm education for children is under-researched, but existing evidence suggests that this approach is less promising than others in protecting children from firearms. While there are some interventions that can increase a child's knowledge about gun safety, none have demonstrated that children's behaviors change in real-world scenarios with a gun present.

→ **Further explore illicit possession laws, including how to avoid unintended consequences of youth involvement in the juvenile justice system.** There is no existing literature that examines how illicit possession laws—those that impose criminal penalties for illegally possessing or carrying a gun—affect adolescents' future firearm-carrying behavior or risk of unintended firearm-related injury or death. More research is needed on illicit possession laws to determine best program and policy practices, and to evaluate how these laws have affected youth involvement in the juvenile justice system.

→ **Explore gun safety technology and its effectiveness in reducing injury and death.**

Evidence is extremely limited regarding the potential impact of gun design on unintentional child injury. Disincentives for firearm manufacturers to produce "smart" guns—which contain technology to prevent an unauthorized user from firing the weapon—have limited the availability of these products in the U.S. There is also no requirement for manufacturers to follow federal safety guidelines for firearms. More research is needed to evaluate the potential effectiveness of safety designs and how a lack of federal oversight has had an impact.

→ **Examine whether mandatory reporting of lost or stolen firearms to law enforcement affects illegal acquisition by adolescents.** We know that youth can and do acquire firearms illegally through theft, but more research is needed to determine how mandatory reporting of lost or stolen firearms affects the rate of illegal gun acquisition by adolescents and resulting injury or death.

→ **Determine effectiveness of various firearm violence prevention practices within schools.**

There is insufficient evidence to determine if policies and practices to reduce gun violence in schools reduce the risk of firearm injury among students and staff.⁸⁻¹⁰ More research is needed to understand whether arming school personnel prevents death from firearms at school, and whether arming teachers poses a risk for harm to themselves or their students. It is also critical to examine the extent to which school penalties for carrying a weapon, like expulsion and suspension, have unintended consequences, and how some policies may disproportionately impact students of color.⁸

FUNDING A COMPREHENSIVE RESEARCH AGENDA

There is a critical need for more research and funding to determine policies and strategies that are effective in preventing unintentional firearm-related child injury and death, and to identify those that are not effective or have adverse unintended consequences. By taking a public health approach to the issue of firearm safety for children, we should strive for a comprehensive research agenda that includes addressing the evidence gaps identified in this brief. Only with this necessary evidence base can we leverage the full potential of providers, policymakers, caregivers, and community organizations working in concert to make evidence-informed decisions that keep children safe in their homes, schools and communities.

REFERENCES

1. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based injury statistics query and reporting system (WISQARS)—Leading causes of death reports. <https://www.cdc.gov/injury/wisqars/LeadingCauses.html>. Accessed June 17, 2020.
2. Timsina LR, Qiao N, Mongalo AC, Vetor AN, Carroll AE, Bell TM. National Instant Criminal Background Check and youth gun carrying. *Pediatrics*. 2020;145(1):1–11. doi.org/10.1542/peds.2019-1071.
3. Council on Injury, Violence, and Poison Prevention Executive Committee. Firearm-related injuries affecting the pediatric population. *Pediatrics*. 130(5):1416–1423. doi.org/10.1542/peds.2012-2481.
4. Duke N, Resnick MD, Borowsky IW. Adolescent firearm violence: Position paper of the Society for Adolescent Medicine. *J Adolesc Health*. 2005;37(2):171–174. doi.org/10.1016/j.jadohealth.2005.05.001.
5. Petty JK, Henry MCW, Nance ML, Ford HR. Firearm injuries and children: Position statement of the American Pediatric Surgical Association. *J Ped Surg*. 2019;54(7):1269–1276. doi.org/10.1016/j.jpedsurg.2019.03.001.
6. Everytown for Gun Safety. The #NotAnAccident Index of Unintentional Shootings. Everytown Research & Policy. <https://everytownresearch.org/notanaccident/15704/>. Accessed February 9, 2021.
7. Cunningham RM, Carter PM, Ranney ML, et al. Prevention of firearm injuries among children and adolescents: Consensus-driven research agenda from the Firearm Safety Among Children and Teens (FACTS) Consortium. *JAMA Pediatr*. 2019;173(8):780–789. doi.org/10.1001/jamapediatrics.2019.1494.
8. Wallace LN. Illicit juvenile weapon possession: The role of serious sanctioning in future behavior. *The Social Science Journal*. 2017;54(3):319–328. doi.org/10.1016/j.sosci.2017.03.005.
9. Schreck CJ, Miller JM, Gibson CL. Trouble in the school yard: a study of the risk factors of victimization at school. *Crime & Delinquency*. 2003;49(3):460–484. doi.org/10.1177/001128703049003006.
10. Tanner-Smith EE, Fisher BW, Addington LA, Gardella JH. Adding security, but subtracting safety? Exploring schools' use of multiple visible security measures. *American Journal of Criminal Justice*. 2018;43(1):102–119. doi.org/10.1007/s12103-017-9409-3.

For a full list of references that contributed to the research takeaways in this resource, visit: bitly.com/Preventing-Unintentional-Firearm-Injury



The mission of PolicyLab at Children's Hospital of Philadelphia (CHOP) is to achieve optimal child health and well-being by informing program and policy changes through interdisciplinary research.

PolicyLab

Children's Hospital of Philadelphia
2716 South Street
Roberts Center for Pediatric Research,
10th Floor
Philadelphia, PA 19146

P 267-426-5300 | F 267-426-0380

PolicyLab@chop.edu
policylab.chop.edu

 @PolicyLabCHOP



The mission of the Center for Violence Prevention at Children's Hospital of Philadelphia (CHOP) is to reduce the exposure to and impact of violence among children, teens and families.

Center for Violence Prevention

Children's Hospital of Philadelphia
2716 South Street
Roberts Center for Pediatric Research,
13th Floor
Philadelphia, PA 19146

P 215-590-3118 | F 215-590-5425

violence.chop.edu

 @CVPatCHOP