

Regions with stricter firearm laws experience fewer pediatric gun-related injuries

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The firearms research group - Kavita Parikh, M.D., M.S.H.S.; Shilpa Patel, M.D., M.P.H.; Monika Goyal, M.D., M.S.C.E.; and Sabah Iqbal, M.D., - has an overarching interest in raising awareness about firearm-related injuries among children and adolescents. Credit: Children's National Health System

Regions of the United States with stronger firearm legislation had lower rates of Emergency Department (ED) visits for pediatric firearm-related injuries, according to a study led by Children's National Health System researchers. Compared with the Northeast—which had the lowest overall burden of firearm-related ED visits—injury rates were significantly higher in the West, South and Midwest, according to a study presented during the 2017 American Academy of Pediatrics (AAP) national conference.

"Firearm-related injuries are a leading cause of [injury](#) and death among children and represent a significant public health concern," says Monika Goyal, M.D., M.S.C.E., director of research in the Division of Emergency Medicine at Children's National and senior study author. "This study

provides compelling data that an evidence-based approach to public policy may help to reduce firearm-related injuries among children."

The research team extracted data from the Nationwide Emergency Department Sample, the nation's largest such database, and included ED visits from 2009 to 2013 by patients younger than 21. The team excluded emergency visits due to air, pellet, BB or paintball guns because they are not governed by firearm legislation. They used state-level Brady gun law scores to calculate median regional scores as measures of firearm legislation strictness.

During the five years covered by the study, there were 111,839 ED visits for pediatric firearm-related injuries, or 22,368 per year. The mean age of patients with firearm-related injuries was 18 years old. The majority were male. Across all age groups, 62.8 percent of firearm-related ED visits were because of accidental injuries, a statistic that rose to 81.4 percent for children aged 6 to 10. Six percent of patients died from their injuries, and 29.8 percent of injuries were serious enough to prompt hospital admission.

When compared with the low rates of firearm-related ED visits in the Northeast, the odds of children visiting EDs for firearm-related injuries were significantly higher in other U.S. regions, including the West (2.5), the South (1.9) and the Midwest (1.8).

"Regions with higher Brady scores—and, by extension stricter gun laws—had lower rates of ED visits by children and youth," Dr. Goyal adds. "To our knowledge, this is the first study to characterize the relationship between children's firearm-related injuries and the rigor of regional firearm legislation."

The authors note that unlike adults, most children rushed to the Emergency Department overwhelmingly suffer from accidental firearm injuries. This fact underscores the importance of robust research that focuses specifically on children.

"Despite the importance of this topic, there has been a paucity of published research about firearm-related injuries and how they may be prevented. Most existing data have focused on adults; these findings cannot necessarily be extrapolated to [children](#)," Dr. Goyal says.

Provided by Children's National Medical Center

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