

INJURY PREVENTION

State clustering of fatal unintentional firearm injuries and those involving police officers

Distinctive geographical patterns linked to differences in measurement, environment, and policy

Unintentional fatal firearm injuries and those involving a police officer currently cluster in distinct geographical areas of the USA, reveals research published in the journal ***Injury Prevention***.

In states where injuries are disproportionately common due to differences in policy or culture, a map identifying the most distinctive injury death in each state could help policymakers and advocates to push for change, say the researchers.

In an effort to find out the most distinctive cause of injury death in each state, the researchers mined data from the Centers for Disease Control and Prevention, focusing in particular on rates that were higher than the national average.

The data were further analysed to find out whether differences in measurement might account for any distinctive patterns.

Two particularly striking geographical patterns emerged. A cluster of seven states in Appalachia and the Southeast had high relative rates of unintentional firearm deaths—around two to four times the national average.

These states were Alabama, Arkansas, Kentucky, Louisiana, South Carolina, Tennessee and West Virginia. None of them is among the 18 states that has legislation on the safe storage of firearms, also referred to as child access prevention laws, the researchers point out.

And five states on the West coast had high relative rates of 'legal intervention' deaths—whereby a suspect or bystander is killed by a police officer or when a police officer is killed in the line of duty—of around two to three-and-a-half times the national average.

These states were California, Oregon, Nevada, New Mexico and Utah.

Legal intervention deaths are not always accurately recorded and classified, say the researchers. But data from Fatal Encounters, an organization that tracks citizens killed by law enforcement, shows that between 2010 and 2014, almost a third of these deaths occurred in the five states even though these states make up just 16% of the population.

This suggests that these states may still have disproportionately high rates of legal intervention deaths, say the researchers.

Elsewhere, rural, Western, and Midwestern states tended to have higher rates of vehicle, machinery and natural/environmental injury deaths, which are probably related to the larger areas of wilderness and agricultural land in these states, suggest the researchers.

An unintentional passenger injury sustained during a car crash was the most distinctive injury death in Montana, South Dakota, and Nebraska.

Four recognized indicators of motor vehicle safety—primary seatbelt law, mandatory ignition key locks for convicted drunk drivers, booster seats, and night time driving restrictions for teens—are completely absent in Montana while South Dakota and Nebraska only have one each. This compares with an average of two per state nationally.

Further analyses of the way in which injury deaths were coded and measured indicated that use of “undetermined intent” classifications and the level of detail used in coding motor vehicle crashes varied substantially by state.

“This study is the first to our knowledge that applies the ‘most distinctive’ map methodology to injury epidemiology and prevention,” write the researchers.

“These findings can help policymakers and public health practitioners identify injuries that, while not necessarily the most burdensome, warrant attention as the most distinctive injury death in their states,” they say.

They add: “In states where injuries are distinctive due to differences in policy or culture, the results could also be a useful tool for advocates who could assert ‘Not only is this injury a problem, it is a problem that we as a state are distinctively bad at addressing’.”

Notes for editors:

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