

Most mass shootings occur closest to hospitals without verification to treat trauma

March 18 2020



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In an analysis of 2019 mass shootings and hospital locations, researchers at Children's Hospital of Philadelphia (CHOP) found that the closest hospital to more than 70% of mass shootings was a non-trauma center,

where sudden, high casualty loads were more likely to overwhelm capacity and trauma-specific care options may have been limited. They also found that in more than half of mass shooting events, the nearest pediatric trauma center was more than 10 miles away.

The findings were published today in a research letter in *JAMA Surgery*.

"The large number of serious injuries caused by [mass](#) shootings requires coordinated, high-level initial care, which is most commonly found in a [trauma center](#)," said Sage R. Myers, MD, MSCE, an attending physician in the Emergency Department at CHOP, Director of Trauma and Resuscitation for the Emergency Department, and co-author of the letter. "Yet in the vast majority of events we studied, a non-trauma center was the closest [hospital](#) and thus was likely the primary patient-transport destination. Given that mass shootings are unfortunately commonplace, all hospitals—regardless of trauma center status—should expect and prepare for the eventuality of a mass casualty event involving both adults and children."

The researchers used the Gun Violence Archive to analyze all 2019 mass shootings, defined as five or more injuries or deaths by firearm, and found a total of 187 mass [shooting](#) events. Those events led to 1,250 injuries, 23.8% of which resulted in death—more than double the 10% mortality rate of wounds sustained in military combat.

They then used Google Maps to calculate the driving distance from the address of the event to the nearest hospital, noting whether the facility was a non-trauma center, an adult level 1 or 2 trauma center, or a pediatric level 1 or 2 trauma center. Their analysis revealed that for 133 of the 187 events (71.1%), a non-trauma hospital was the nearest hospital.

Of the 187 mass shooting events in 2019, nearly 30% involved children.

Yet 50.8% of all events occurred more than 10 miles from a pediatric trauma center, creating a challenge in caring for children injured in [mass shootings](#).

"Children with injuries place a great stress on the system because many non-pediatric centers have limited child-specific resources, such as appropriately sized tracheal tubes and IVs, personnel trained in pediatric care, and pediatric-focused triage and transport policies," said Michael L. Nance, MD, Director of CHOP's Pediatric Trauma Program and a Fellow with CHOP's Violence Prevention Initiative. "Until we are able to reduce the frequency of mass shooting events, all hospitals must be ready to function similarly to a military field unit, with resources to treat trauma injuries in patients of all ages."

More information: *JAMA Surgery* (2020). [DOI: 10.1001/jamasurg.2020.0095](https://doi.org/10.1001/jamasurg.2020.0095)

Provided by Children's Hospital of Philadelphia

Citation: Most mass shootings occur closest to hospitals without verification to treat trauma (2020, March 18) retrieved 26 December 2022 from <https://medicalxpress.com/news/2020-03-mass-closest-hospitals-verification-trauma.html>

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