

# Trauma center closures linked to higher odds of death for injured patients, study shows

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Injured patients who live near trauma centers that have closed have higher odds of dying once they reach a hospital, according to a new analysis by UC San Francisco researchers.

Trauma centers are specially staffed and equipped to provide care to severely injured people. They can be costly to operate and many centers struggle to keep their doors open. During the last two decades, about a third of the nation's 1,125 trauma centers have shut down.

The new study, involving more than a quarter of a million patients, analyzed the impact of closures of three centers in California. It found that when a trauma center shut its [doors](#), [injured patients](#) who had to travel farther to reach an open trauma center had 21% higher odds of in-hospital death than injured patients who did not have to travel farther for trauma care. The odds of death were even higher – 29% - during the first two years after a closure, the authors reported.

"This study confirms that when trauma centers close, people who live in the surrounding areas are more likely to die following an injury," said lead author Renee Y. Hsia, MD, an associate professor of emergency medicine at UCSF. She is also an attending physician in the emergency department at the UCSF-affiliated San Francisco General Hospital & Trauma Center and a faculty member of the UCSF Institute for Health Policy Studies.

"There have been an increasing number of trauma center closures in

recent years, and these closures are associated with a higher risk of death in the affected communities," she said.

The article will be published March 13, 2014 in *The Journal of Trauma and Acute Care Surgery*.

Researchers compared patients whose travel time to their nearest trauma center increased to those with no change in travel time, as well as those whose travel time to trauma care decreased after a trauma center opened nearby. They found that decreased travel time to the closest trauma center was associated with 17% lower odds of in-hospital mortality compared to the group experiencing no change, while increased travel time was associated with 14% higher odds of in-hospital mortality.

These effects were intensified in the first two years following a closure. Injured patients with decreased travel times to the nearest trauma center had 16% lower odds of death, while injured patients affected by a closure had 26% higher odds of death.

The researchers examined the impact of three trauma center closures in California between 1999 and 2009 on more than 270,000 patients with injuries admitted to their nearest trauma center. They compared the [in-hospital](#) mortality of 5,122 patients, who lived in ZIP codes where their drive time to that nearest trauma center increased as the result of a nearby closure, to 228,236 patients whose drive time did not change, and 37,787 patients whose travel time decreased as the result of a trauma center opening.

Affected patients were more likely to be young and low income, to identify as part of a racial or ethnic minority group and have Medi-Cal insurance than [patients](#) whose [travel time](#) to their nearest [trauma center](#) did not increase, Hsia said.

Provided by University of California, San Francisco

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