

Trauma patients with COVID-19 face greater risk of complications and death

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In addition to sickening and taking the lives of millions across the globe, COVID-19 complicated patient care in a range of less-direct ways, from increased incidence of heart attacks to decreased cancer screenings. The virus also increased the risk of complications and death among trauma patients with injuries from car crashes, falls or other accidents, or who were victims of violent injuries such as gunshots and stabbings, according to new research conducted by the Perelman School of Medicine at the University of Pennsylvania published recently in *The Journal of Trauma and Acute Surgery*.

The findings reveal that patients in [trauma](#) centers across the state of Pennsylvania who also tested positive for COVID-19 had six times higher risk of death than patients with similar injuries without COVID. COVID-positive patients also demonstrated double the likelihood of complications such as [venous thromboembolism](#), [renal failure](#), need for intubation, and unplanned ICU admission, as well as more than five times the odds of pulmonary complications. These risks were even greater in patients over age 65.

"COVID-19 had the largest impact on patients whose injuries were relatively minor, and who we would have otherwise expected to do well," said lead author Elinore Kaufman, MD, MSHP, an assistant professor in the Division of Trauma, Surgical Critical Care and Emergency Surgery at Penn Medicine. "Our findings underscore how important it is for hospitals to consistently test admitted patients, so that providers can be aware of this additional risk and treat patients with extra care and

vigilance."

Researchers conducted a retrospective study of 15,550 patients admitted to Pennsylvania [trauma centers](#) from March 21, 2020, (when Governor Tom Wolf ordered the closure of non-essential businesses statewide) to July 31, 2020. Of the 15,550 patients, 8,170 were tested for the virus, and 219 tested positive. During this period, the researchers evaluated length of stay, complications, and overall outcomes for patients who tested positive for COVID, compared to patients who did not have the virus. They found that rates of testing increased over time, from 34 percent in April 2020 to 56 percent in July. Rates of testing varied substantially across centers, however, with a median of 56.2 percent and a range of 0 percent to 96.4 percent.

"First, we need to investigate how to best care for these high-risk patients, and establish standard protocols to minimize risks," said senior author Niels D. Martin, MD, chief of Surgical Critical Care and an associate professor in the division of Trauma, Surgical Critical Care and Emergency Surgery. "Second, we need more data on the risks associated with patients who present symptoms of COVID, versus those who are asymptomatic, so we can administer proven treatments appropriately and increase the likelihood of survival with minimal complications."

More information: Elinore J. Kaufman et al, The Impact of COVID-19 Infection on Outcomes After Injury in a State Trauma System, *Journal of Trauma and Acute Care Surgery* (2021). [DOI: 10.1097/TA.0000000000003310](#)

Provided by Perelman School of Medicine at the University of Pennsylvania

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