

# Study finds use of in-hospital mortality as a sepsis quality metric may unfairly penalize safety-net hospitals

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Sepsis is a leading cause of death and disability and a key target of state and federal quality measures for hospitals. In-hospital mortality of

patients with sepsis is frequently measured for benchmarking, both by researchers and policymakers. For example, in New York, sepsis regulations mandate reporting of risk-adjusted in-hospital mortality, and hospitals with lower or higher than expected in-hospital mortality rates are publicly identified as high or low performers.

Safety net hospitals (which face unique challenges, including fewer resources to care for a disproportionately high share of underinsured and [high-risk patients](#)) have been reported in prior studies to have higher risk-adjusted in-hospital mortality among patients with [sepsis](#) than non-safety-net hospitals.

However, among critically-ill patients, in-hospital mortality may not adequately reflect short-term mortality fairly across all hospitals. In-hospital mortality is influenced by other variables, including hospital transfer practices, which shift the attribution of short-term death from the hospital to other sites. Safety-net hospitals may have different access or ability to transfer patients compared to non-safety-net hospitals.

In a new study, researchers at Boston University Chobanian & Avedisian School of Medicine found that safety net hospitals do have higher in-hospital mortality than non-safety net hospitals, but their [30-day mortality](#)—an unbiased measure of short-term mortality—is actually not different. The findings appear online in *JAMA Network Open*.

"While the differences in [mortality rates](#) are numerically small, the difference in outcome metrics is enough to significantly affect hospital rankings. Current or future state and federal quality measures that use in-hospital mortality as a quality metric may unfairly penalize safety-net hospitals," explained corresponding author Anica Law, MD, MS, assistant professor of medicine at the school.

The researchers performed a retrospective analysis of patients with

sepsis who were aged 66 and older and were admitted to an [intensive care unit](#) between January 1, 2011, through December 31, 2019, at both safety and non-safety net hospitals.

"Although in-hospital mortality is often selected as an outcome measure because of its availability in claims databases and hospital [medical records](#) without need for post-hospitalization follow-up, the 30-day measure is important to accurately understand true short-term mortality rates," said Law, who also is a pulmonologist and critical care physician at Boston Medical Center.

According to the researchers, the difference appears to be due partly to the fact that non-safety net hospitals discharge more patients to hospice, which shifts attribution of short-term mortality away from the index hospitalization. "When post-hospitalization data is incorporated, as is done in 30-day mortality analysis, you get a more accurate picture of who is actually dying in the short-term, and see that there no longer a difference between safety and non-[safety net hospitals](#)."

The Centers for Medicare and Medicaid Services (CMS) has already legislated a process measure that assesses whether hospitals are performing key sepsis care steps efficiently, including initiating antibiotics. CMS is currently considering rolling out a national sepsis outcome measure; it is not yet known if CMS will be measuring in-hospital mortality or 30-day mortality.

**More information:** In-Hospital vs 30-Day Sepsis Mortality at US Safety-Net and Non–Safety-Net Hospitals, *JAMA Network Open* (2024).

Provided by Boston University School of Medicine

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