

Mortality rates have increased at hospitals in rural communities for certain conditions

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In an analysis that included data on more than 10 million Medicare beneficiaries admitted to acute care hospitals with a heart attack, congestive heart failure, or pneumonia between 2002 and 2010, 30-day mortality rates for those admitted to critical access hospitals (designated hospitals that provide inpatient care to individuals living in rural communities) increased during this time period compared with patients admitted to other acute care hospitals, according to a study in the April 3 issue of *JAMA*.

"More than 60 million Americans live in rural areas and face challenges in accessing high-quality inpatient care. In 1997, the U.S. Congress created the Critical Access Hospital (CAH) program in response to increasing rural hospital closures," according to background information in the article. "Hundreds of hospitals have joined the program over the past decade—by 2010, nearly 1 in 4 of the nation's hospitals were CAHs. ... These hospitals are at high risk of falling behind with respect to quality improvement, owing to their limited resources and vulnerable patient populations. How they have fared on [patient outcomes](#) during the past decade is unknown."

Karen E. Joynt, M.D., M.P.H., of the Harvard School of Public Health, Boston, and colleagues conducted a study to evaluate trends in mortality for patients receiving care at CAHs and compared these trends with those for patients receiving care at non-CAHs. The study included data from Medicare fee-for-service patients admitted to U.S. acute care hospitals with [acute myocardial infarction](#) ([heart attack](#); 1,902,586 admissions), [congestive heart failure](#) (4,488,269 admissions), and pneumonia (3,891,074 admissions) between 2002 and 2010. In 2010, 1,264 of 4,519 (28 percent) of U.S. hospitals providing acute care services to Medicare beneficiaries and reporting hospital characteristics to the American [Hospital Association](#) were designated as CAHs.

The researchers found that there were differences in trends in 30-day [mortality rates](#) over time between CAHs and non-CAHs for the 3 conditions examined. "When a composite across the 3 conditions was formally tested, adjusting for teaching status, ownership, region, rurality, poverty, and local physician supply, composite baseline mortality was similar between CAHs and non-CAHs (12.8 percent vs. 13.0 percent). However, between 2002 and 2010, mortality rates increased at CAHs at a rate of 0.1 percent per year, whereas at non-CAHs they decreased 0.2 percent per year, for a difference in change in mortality of 0.3 percent per year. Thus, by 2010, CAHs had higher overall mortality rates (13.3 percent vs. 11.4 percent). In total, CAH admissions were associated with 10.4 excess deaths per 1,000 admissions during the study period."

The researchers note that although CAHs had higher mortality rates by 2010 for each of the conditions examined, the absolute difference was only 1.8 percent.

Patterns were similar for each of the 3 conditions individually. Comparing CAHs with other small, rural hospitals, similar patterns were found.

"Given the substantial challenges that CAHs face, new policy initiatives may be needed to help these hospitals provide care for U.S. residents living in rural areas," the authors conclude.

In an accompanying editorial, John P. A. Ioannidis, M.D., D.Sc., of the Stanford University School of Medicine, Stanford, Calif., writes that "to rigorously test potential interventions about how to improve the mortality rates at CAHs, cluster randomized controlled trials are needed."

"These trials could randomize CAHs to different interventions regarding quality improvement initiatives, performance recording, or payment practices. Given the large volume of admissions,

with about 20 randomized hospitals, a follow-up of about a year should suffice to obtain conclusive answers about specific tested interventions. If clinicians, administrators, and policy makers believe that administrative database results such as those reported by Joynt et al are clinically meaningful and relevant and not just spurious products of tenuous analyses, the modest cost of conducting such confirmatory randomized trials on health system changes is fully justified."

More information: *JAMA*.

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