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## Use Of Rapid Response Team In Hospital Not Linked With Reduction In Cardio Arrests Or Deaths

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Previous studies have found that patients often exhibit physiological deterioration hours before cardiopulmonary arrest. A rapid response team, also known as a medical emergency team, is a multidisciplinary team of intensive care unit (ICU) professionals charged with the evaluation, triage, and treatment of non-ICU patients with signs of clinical deterioration to reduce the rates of in-hospital cardiopulmonary arrests (codes) and the subsequent illness or deaths that follow.

The Institute for Healthcare Improvement has recommended that hospitals implement rapid response teams as 1 of 6 strategies to reduce preventable in-hospital deaths. In response, hundreds of hospitals around the country have invested significant financial and personnel resources in implementing rapid response teams, despite limited published data supporting their effectiveness, according to background information in the article.

Paul S. Chan, M.D., M.Sc., of the Mid America Heart Institute and University of Missouri, Kansas City, and colleagues examined the association between a rapid response team intervention and long-term changes in hospital-wide cardiopulmonary arrest and mortality rates. The study included adult inpatients admitted between January 2004 and August 2007 at a 404-bed tertiary care academic hospital in Kansas City. Rapid response team education and program rollout occurred from September 1 to December 31, 2005. A total of 24,193 patient admissions were evaluated prior to the intervention (January 1, 2004 to August 31, 2005), and 24,978 admissions were evaluated after the intervention (January 1, 2006 to August 31, 2007).

During the 20-month period after intervention implementation, there were a total of 376 rapid response team activations. The most common reasons for rapid response team activation were altered neurological status, tachycardia (abnormally rapid heartbeat) exceeding 130 beats per minute, tachypnea (abnormally rapid breathing) exceeding 30 breaths per minute, and hypotension (abnormally low blood pressure) assessed as blood pressure lower than 90 mm Hg.

Hospital-wide code rates per 1,000 admissions were 11.2 before rapid response team intervention and 7.5 after rapid response team intervention. This was not associated with a reduction in the primary outcome measure of hospital-wide code rates, with decreases in non-ICU code rates accounting for the majority of this difference.

Case fatality rates after cardiopulmonary arrest were similar prior to and after the rapid response team intervention (77.9 percent vs. 76.1 percent). Hospital-wide mortality rates did not meaningfully change after the rapid response team intervention (3.22 preintervention vs. 3.09 postintervention per 100 admissions). Secondary analyses revealed few instances of rapid response team undertreatment or underuse that may have affected the mortality findings.

"We believe that this study provides important new insights regarding the effectiveness and limitations of rapid response team intervention and raises critical questions about whether recommendations to disseminate rapid response teams nationally are warranted without a demonstrable mortality benefit," the authors write.

#### Journal reference:

Paul S. Chan; Adnan Khalid; Lance S. Longmore; Robert A. Berg; Mikhail Kosiborod; John A. Spertus. Hospital-wide Code Rates and Mortality Before and After Implementation of a Rapid Response Team. *JAMA*, 2008;300(21):2506-2513

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