

# Risk of death may be higher if heart attack occurs in a hospital

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Prashant Kaul, M.D., of the University of North Carolina, Chapel Hill, and colleagues conducted a study to define the incidence and treatment and outcomes of patients who experience a certain type of heart attack during hospitalization for conditions other than acute coronary syndromes. The study appears in the November 19 issue of *JAMA*, a cardiovascular disease theme issue.

Early restoration of blood flow with [percutaneous coronary intervention](#) (PCI; a procedure such as stent placement used to open narrowed coronary arteries) or administration of medication to dissolve a clot remains the primary goal in the initial treatment of eligible patients presenting to a hospital with ST-elevation myocardial infarction (STEMI; a certain pattern on an electrocardiogram following a [heart attack](#)). Over the last decade, recognition that this strategy is of critical importance has prompted the development of a number of regional and national initiatives to facilitate and improve systems of care for STEMI. These initiatives have focused exclusively on patients who develop STEMI outside of a hospital setting (outpatient-onset STEMI), and little is known about the incidence and outcomes of STEMI in patients hospitalized for non-acute coronary syndrome (ACS) conditions (inpatient-onset STEMI), according to background information in the article.

This study included an analysis of STEMIs occurring between 2008 and 2011 as identified in the California State Inpatient Database. Models were used to evaluate associations among location of onset of STEMI, resource utilization and outcomes. A total of 62,021 STEMIs were identified in 303 hospitals, of which 3,068 (4.9 percent) occurred in patients hospitalized for non-ACS indications.

The researchers found that patients developing inpatient-onset STEMI had more than 3-fold greater in-hospital mortality than those with

outpatient-onset STEMI (33.6 percent vs 9.2 percent). Patients with inpatient-onset STEMI were less likely to be discharged home (33.7 percent vs 69.4 percent), and were less likely to undergo cardiac catheterization (33.8 percent vs 77.8 percent) or PCI (21.6 percent vs 65 percent). Average length of stay (13 days vs 5 days) and inpatient charges (\$245,000 vs \$129,000) were higher for inpatient-onset STEMI. Patients with inpatient-onset STEMI were older and more frequently female.

"The question of how to improve outcomes and define optimum treatment in hospitalized patients who experience a STEMI is an area that merits more attention and concern. Although there have been improvements in treatment times and clinical outcomes in outpatients who have onset of STEMI, few initiatives have focused on optimizing care of hospitalized [patients](#) with onset of STEMI after admission," the authors write.

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