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Diagnostic protocol effective in identifying ED patients with acute chest pain

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A relatively new accelerated diagnostic protocol is effective in identifying emergency department patients with acute chest pain who can be safely sent home without being hospitalized or undergoing comprehensive cardiac testing, according to researchers at Wake Forest Baptist Medical Center.

The study found that use of the HEART Pathway protocol was associated with a 6 percent reduction in hospitalizations and significant decreases in the median length of hospital stay and use of stress testing and coronary angiograph compared to usual care.

"These findings demonstrate that the HEART Pathway is a safe and effective way to determine which patients with acute chest pain are low-risk for acute cardiac syndrome," said Simon A. Mahler, M.D., associate professor of emergency medicine at Wake Forest Baptist and lead author of the study, published in the current online, ahead-of-print issue of the American Heart Association journal *Circulation: Cardiovascular Quality and Outcomes.*

"Given its ability to reduce the utilization of health care resources, the protocol may provide a model for health systems to provide safe and high-value care to emergency room patients with chest pain at lower cost."For the study, the researchers used electronic health record and insurance claims data from three hospital emergency departments in 8,474 adults with acute chest pain. Of these, 3,713 were cared for in a 12-month period before the HEART Pathway was implemented and

4,761 were cared for in a 12-month period after implementation. The study followed participants for 30 days after their initial emergency department visits.

The HEART Pathway identified 30.7 percent of the patients it was employed on as low-risk. Of these, just 0.4 percent suffered a heart attack or died from any cause within 30 days of the initial emergency department visit.

Up to 10 million patients complaining of acute chest pain show up at U.S. emergency departments each year, and more than half of them are hospitalized to undergo comprehensive cardiac tests. It is estimated that these tests cost upwards of $13 billion annually, yet under 10 percent of the patients are found to have acute coronary syndrome, an umbrella term for conditions brought on by sudden, reduced blood flow to the heart.

To determine an individual's risk of having a serious cardiac problem, the HEART Pathway protocol produces a numerical score based on four components—the patient's History, Electrocardiogram reading, Age and Risk factors (HEAR) and combines this score with two blood tests measuring the levels of troponin, a protein in blood released when the heart muscle is damaged, with the second test administered three hours after the first one.

"The HEART Pathway is a decision aid, not a substitute for clinical judgment," Mahler said. "But we do have evidence that its use can both improve evaluation and reduce unnecessary testing, hospitalization and expense."

Provided by Wake Forest University Baptist Medical Center