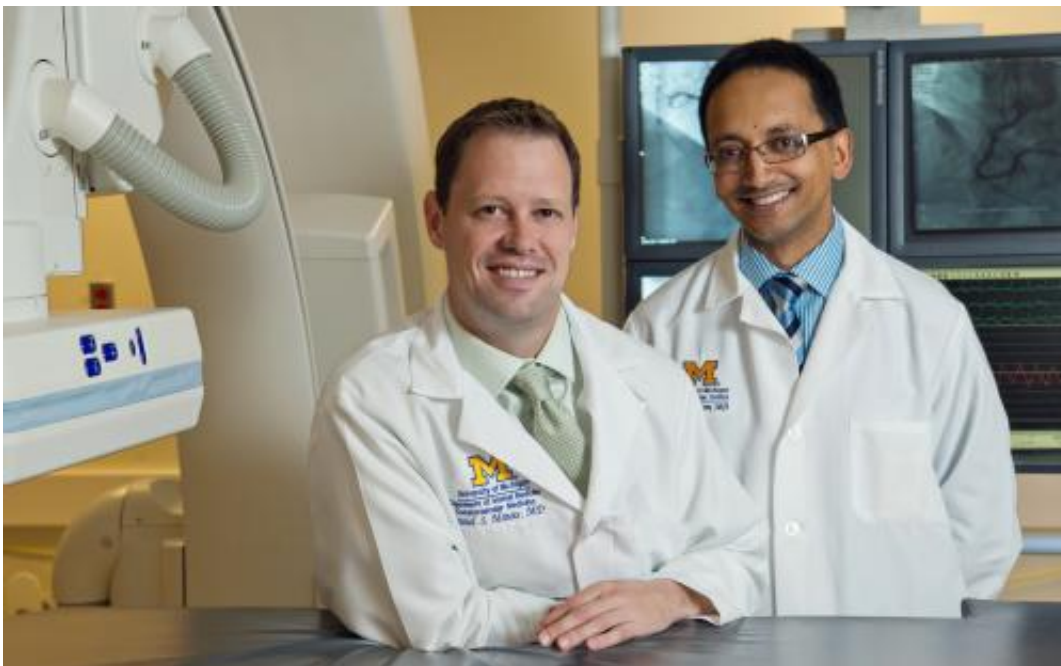


Heart attack death rates unchanged in spite of faster care at hospitals

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University of Michigan cardiologists Daniel S. Menees, M.D., and Hitinder Gurm, M.D., led analysis of trends in heart attack care. Credit: Leisa Thompson Photography/University of Michigan Health System

Heart attack deaths have remained the same, even as hospital teams have gotten faster at treating heart attack patients with emergency angioplasty, according to a study in this week's *New England Journal of Medicine*.

Hospitals across the country have successfully raced to reduce so-called

door-to-balloon time, the time it takes patients arriving at hospitals suffering from a [heart attack](#) to be treated with angioplasty, to 90 minutes or less in the belief that it would save [heart muscle](#) and lives.

In an analysis led by the University of Michigan Frankel Cardiovascular Center of 100,000 heart attack admissions across the United States between 2005 and 2009, a time period that coincided with a national effort to reduce door-to-balloon time, 4.7 percent of patients died. The rate was virtually unchanged in spite of the faster care.

"The data suggests that efforts to reduce door-to-balloon time further may not result in lower death rates," says lead study author and interventional cardiologist Daniel Menees, M.D., assistant professor of internal medicine at the University of Michigan Medical School.

"Potential strategies to improve care may include increasing [patient awareness](#) of heart attack symptoms, reducing delays for treatment once symptoms begin, and shortening transfer time between [health care facilities](#) once a heart attack is recognized."

Door-to-balloon time describes the amount of time between when a patient arrives at the hospital and when they receive percutaneous [coronary intervention](#) (PCI), such as angioplasty, in which a catheter with a small balloon at the tip is inserted and inflated to open a blocked artery.

The *New England Journal of Medicine* study of patients treated for heart attack at 515 hospitals participating in the CathPCI Registry® found door-to-balloon time fell from 83 minutes in 2005-2006 to 67 minutes in 2008-2009.

The findings show the result of collaboration and teamwork among teams led by cardiologists, [emergency medicine](#) physicians and

emergency medical services to reduce the time it takes to treat a heart attack.

Health care quality has been measured by how well hospitals meet the 90-minute time goal. The U-M Health System is among those hospitals reporting its own performance publicly on the Web.

"But the pendulum may have swung too far," Menees says. "In our rush to provide treatment even faster, we may be taking patients for angioplasty who don't need one and possibly even placing those patients at-risk.

"Door-to-balloon time is easy to measure and something we can control but it's only a fraction of the total ischemic time," he says.

Each year, almost 250,000 Americans have the most serious kind of heart attack called a "STEMI," which stands for ST-elevated myocardial infarction. It is caused by a blocked artery shutting down blood supply to a large area of the heart.

"Heart muscle is dying while a patient is thinking, 'Is this real? Should I call, or should I not call for help?' " says senior study author and interventional cardiologist Hitinder Gurm, M.D., associate professor of internal medicine at the U-M Medical School. "We're seeing a fair amount of delay in seeking treatment. That has been harder to fix. " The study showed the percentage of [heart attack patients](#) receiving care in 90 minutes or less improved from 59.5 percent to 83.1 percent.

However the heart attack mortality rate remained virtually unchanged at 4.8 percent in 2005 and 4.7 percent in 2009.

"Emergency teams and the cardiology community have worked hard with the hope that reducing door-to-balloon time would improve patient

outcomes," Gurm says. "These efforts have been widely successful. What's disappointing is that the reduction has not been accompanied by a change in mortality."

More information: "Reduced door-to-balloon time and mortality in patients undergoing primary PCI," *New England Journal of Medicine*, Vol. 369, No. 10, Sept. 5, 2013.

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