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Protocol-driven heart attack care proves effective and contagious

The implementation of acute heart attack or ST-elevation myocardial infarction (STEMI) guidelines, protocols and standing orders in Minnesota community hospitals without cardiac catheterization labs has dramatically improved since 2003, according to a scientific poster that will be presented at the American College of Cardiology (ACC) Scientific Sessions in New Orleans, April 1-3.

Since the 1990s, the American College Cardiology (ACC)/American Heart Association (AHA) STEMI guidelines recommended that all hospitals develop protocols and standing orders (reperfusion strategy, adjunctive medications, transfer criteria) for STEMI and monitor quality measures (time to treatment and adjunctive medications).

In 2003, a survey of Minnesota hospitals without cardiac catheterization labs found less than 70 percent of hospitals had any protocols and less than 50 percent had a formal quality improvement process and many were "incomplete or inadequate," explained the study's senior author Timothy D. Henry, MD, interventional cardiologist at Minneapolis Heart Institute® at Abbott Northwestern Hospital in Minneapolis and Director of Cardiovascular Research at Minneapolis Heart Institute Foundation. He described the 2003 survey results as "surprising and a major public health problem."

However, those findings stimulated the development of several regional STEMI systems in Minnesota, including the Level 1 Heart Attack Network created by the Minneapolis Heart Institute®. "At this point, almost every hospital in the state belongs to a STEMI network due to their proliferation after 2003," Henry noted.

To compare performance since the 2003 survey results, the researchers mailed the identical survey to emergency department medical directors and nurse managers at all 108 Minnesota hospitals without cardiac catheterization labs in late 2009.

Since 2003, implementation of STEMI guidelines, protocols and standing orders in Minnesota community hospitals without cardiac catheterization labs has "dramatically improved," Henry noted, as more than 90 percent of hospitals have specific STEMI protocols. "These hospitals don't just have general protocols, but we found that they have very specific detailed protocols about medications, when to transfer these patients and what type of reperfusion therapy to use."

Compared with 2003 when 6 percent of these hospitals had protocol-specific indications for transfer to a tertiary hospital, 72 percent of hospitals now have adopted these indications. Also, 66 percent of hospitals have a formal quality improvement process for STEMI patients.

Finally, 91 percent of STEMI patients routinely transferred to a percutaneous coronary intervention (PCI) center, which also is mandated by the guidelines, compared with 59 percent in 2003.

Minnesota has the lowest cardiovascular mortality rate in the United States, and during this time period, that rate declined 50 percent from 2002 to 2009.

"This improvement was stimulated by regional STEMI systems which support the recent class I recommendation for STEMI systems of care in the 2009 focused update of the ACC/AHA guidelines," according to the study authors.

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The Minneapolis Heart Institute Foundation is dedicated to creating a world without heart disease through

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