

Electronic medical records not always linked to better care in hospitals, study finds

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Use of electronic health records by hospitals across the United States has had only a limited effect on improving the quality of medical care, according to a new RAND Corporation study.

Studying a wide mix of hospitals nationally, researchers found that hospitals with basic electronic health records demonstrated a significantly higher increase in quality of care for patients being treated for heart failure.

However, similar gains were not noted among hospitals that upgraded to advanced electronic health records, and hospitals with electronic health records did not have higher quality care among patients treated for [heart attack](#) or pneumonia.

The findings, published online by the *American Journal of Managed Care*, are part of a growing body of evidence suggesting that new methods should be developed to measure the impact of [health information technology](#) on the quality of hospital care.

"The lurking question has been whether we are examining the right measures to truly test the effectiveness of health information technology," said Spencer S. Jones, the study's lead author and an information scientist at RAND, a nonprofit research organization. "Our existing tools are probably not the ones we need going forward to adequately track the nation's investment in health information technology."

Use of electronic health records is growing rapidly among U.S. hospitals, spurred by a major federal investment in the technology. Legislation approved in 2009 may eventually provide as much as \$30 billion in federal aid to hospitals that invest in electronic health records.

One expected benefit of electronic health records is improved quality of care. But most of the current knowledge about the relationship between health information technology and quality comes from a few hospitals that may not be representative, such as large teaching hospitals or hospitals that were among the first to adopt electronic health records.

The RAND study is one of the first to look at a broad set of hospitals to examine the impact that adopting electronic health records has had on the quality of care.

The study included 2,021 hospitals -- about half of the nonfederal acute care hospitals nationally. Researchers determined whether each hospital had electronic health records and then examined performance across 17 measures of quality for three common illnesses -- heart failure, heart attack and pneumonia. The period studied spanned 2003 to 2007.

The number of hospitals using either a basic or advanced electronic health records rose sharply during the period, from 24 percent in 2003 to nearly 38 percent in 2006.

Researchers found that the quality of care provided for the three illnesses generally improved among all types of hospitals studied from 2004 to 2007. The largest increase in quality was seen among patients treated for heart failure at hospitals that maintained basic electronic health records throughout the study period.

However, quality scores improved no faster at hospitals that had newly adopted a basic electronic health record than in hospitals that did not

adopt the technology. In addition, at hospitals with newly adopted advanced electronic health records, quality scores for heart attack and [heart failure](#) improved significantly less than at hospitals that did not have electronic health records. Electronic health records had no impact on the quality of care for patients treated for [pneumonia](#).

Researchers say the mixed results may be attributable to the complex nature of health care. Focusing attention on adopting electronic health records may divert staff from focusing on other quality improvement efforts. In addition, performance on existing hospital quality measures may be reaching a ceiling where further improvements in quality are unlikely.

New performance measures that focus on areas where electronic health records are expected to improve care should be developed and tested, according to researchers. For example, electronic health records are expected to lower the risk of adverse drug interactions, but existing quality measures do not examine the issue.

"With the federal government making such a large investment in this technology, we need to develop a new set of quality measures that can be used to establish the impact of [electronic health records](#) on quality," Jones said.

Provided by RAND Corporation

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