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Federal Investment in Electronic Health Records Likely to Reap Returns in Quality of Care

CLEVELAND – Research published today in the *New England Journal of Medicine* gives cause for optimism that federal investments in electronic health records (EHRs) could reap major benefits in better patient care and health outcomes.

A study based in the Cleveland (Ohio) area involving more than 27,000 adults with diabetes found that those in physician practices using EHRs were significantly more likely to have health care and outcomes that align with accepted standards than those where doctors rely on paper records. Improvements in care and outcomes over a three-year period also proved greater among patients in EHR practices. The study's findings remained consistent for patients regardless of insurance type, including the uninsured as well as patients insured by Medicare, Medicaid, and commercial payers.

“We were not surprised by these results,” said Randall D. Cebul, M.D., a professor of medicine at Case Western Reserve University and the study's lead author. “They were influenced by several factors, including our public reporting on agreed-upon standards of care and the willingness of our clinical partners to share their EHR-based best practices while simultaneously competing on their execution.”

The research involved more than 500 primary care physicians in 46 practices that are partners in a region-wide collaborative known as Better Health Greater Cleveland (*Better Health*). This alliance of providers, businesses and other stakeholders is dedicated to enhancing the value of care for patients with chronic medical conditions in the region. Launched in 2007, the organization is one of 16 that the Robert Wood Johnson Foundation chose to support in its nationwide initiative, called *Aligning Forces for Quality*. This initiative is the foundation's signature effort to lift the overall quality of health care in targeted communities as well as reduce racial and ethnic disparities and provide models that will help propel national reform. Common themes across the communities include public reporting of performance and community-wide initiatives to improve care.

“Cleveland stands as a pioneer in the burgeoning movement to leverage local resources and federal reform opportunities to improve health care quality,” said Anne F. Weiss, M.P.P., who leads efforts to improve the quality of American health care at the Robert Wood Johnson Foundation. “Electronic health records alone cannot solve the nation's health care quality problems, but they are an important part of the fix. Cleveland's use of electronic health records is a model for all health care organizations working to implement health reform.”



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The *Better Health* study focused on a 12-month window spanning 2009 and 2010, and also followed trends over a three-year period. The study also measured achievement by age, gender and racial and ethnic categories as well as language preference and estimated patient income and education.

Better Health's locally vetted national standards for care included timely measurements of blood sugar, management of kidney problems, eye examinations, and vaccinations for pneumonia. Outcome measures included meeting national benchmarks for blood sugar, blood pressure and cholesterol control, as well as achieving a non-obese Body Mass Index and avoidance of tobacco use. Patients who made at least two visits to the same primary care practice within a single year were included. The researchers reported results for individual standards as well as separate composite standards for care and outcomes.

The study's findings were striking – even after researchers statistically accounted for differences between EHR and paper-based practices in the characteristics of their patients.

- **Standards of Care:** Nearly 51 percent of patients in EHR practices received care that met all of the endorsed standards. Only 7 percent of patients at paper-based practices received this same level of care – a difference of 44 percentage points. After accounting for differences in patient characteristics, EHR patients still received 35 percent more of the care standards.
- **Patient Outcomes:** Nearly 44 percent of patients in EHR practices met at least four of five outcome standards, while just under 16 percent of patients at paper-based practices had comparable results. After accounting for patient differences, the adjusted gap was 15 percent higher for EHR practices.
- **Trends Over Time:** After accounting for patient differences, EHR practices had annual improvements in care that were 10 percent greater than paper-based practices as well as 4 percent greater annual improvements in outcomes.
- **Performance Across Insurance Types:** Patients in EHR practices showed better results, including improvements over time, in both standards of care and outcomes across all insurance categories – commercial, Medicare, Medicaid and uninsured.

“These results support the expectation that federal support of electronic health records will generate quality-related returns on our investments,” said David Blumenthal, M.D., M.P.P., professor of medicine and health care policy at Harvard Medical School and past National Coordinator for Health Information Technology. “I am especially pleased that the benefits reported in this investigation spanned all insurance types, including Medicaid and uninsured patients, since it is essential that the modern information technologies improve care for all Americans, including our most vulnerable citizens.”



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As important as electronic health records are, Dr. Cebul said, their greatest value merges when used in conjunction with other approaches – such as the sharing of best practices and coaching offered through collaborations such as Better Health *Greater Cleveland*. His colleagues within the Cleveland-based initiative heartily agree.

“*Better Health* seeks to improve the value of health care for all of the region’s residents and those who pay for their care,” said David L. Bronson, MD, FACP, president of Cleveland Clinic Regional Hospitals and President-elect of the American College of Physicians. “As the program moves forward, we expect that EHR-based sharing of information across different health care systems, and with our patients, will help us to keep our patients healthier and foster more discriminating use of expensive resources, such as our emergency departments and hospitals.”

This perspective is echoed strongly by national leaders as well. Not only do such collaborations enhance care and outcomes, but they also provide rich opportunities to test the impact of different approaches and innovations. As Dr. Carolyn Clancy, M.D., director of the federal Agency for Healthcare Research and Quality, explained: “The results of this study support both the value of electronic health records and community-based partnerships to improve quality of care.”

Report Authors:

In addition to his roles with Case Western Reserve University, Dr. Cebul is director of Better Health Greater Cleveland and director of the CWRU Center for Health Care Research & Policy at MetroHealth Medical Center in Cleveland.

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At the time of this work, Anil K. Jain, M.D., was senior IT executive, Information Technology Division and Medicine Institute, Cleveland Clinic. Dr. Jain currently is chief medical information officer at the University of Cincinnati Health System.

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Better Health Greater Cleveland is an independent, nonprofit organization dedicated to improving the health of people in Northeast Ohio living with chronic disease. Collaborators include organizations ranging from hospital systems to health plans, employers and government agencies. Participating providers share results for public reporting, participate in regional learning opportunities, and maintain a relentless focus on improving the delivery of care and patient results. For more information, please visit www.betterhealthcleveland.org.

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