



OBJECTIVE ANALYSIS.
EFFECTIVE SOLUTIONS.

RAND > Press Room > News Releases > 2005 >

RAND Study Says Computerizing Medical Records Could Save \$81 Billion Annually and Improve the Quality of Medical Care

Media Resources

RAND Office of Media Relations

(703) 413-1100, ext. 5117

(310) 451-6913

media@rand.org

FOR RELEASE

Wednesday

September 14, 2005

America's healthcare system could save more than \$81 billion annually and improve the quality of care if it were to broadly adopt computerized medical records, according to a RAND Corporation [study](#) that is the most detailed analysis ever conducted of the potential benefits of electronic medical records.

“Our findings strongly suggest that it is time for the government and others who pay for health care to aggressively promote health information technology,” said Richard Hillestad, a RAND senior management scientist who led the two-year study that was reported in two articles published today in the journal *Health Affairs*

Researchers from [RAND Health](#) suggest federal officials accelerate efforts to set universal standards for health information technology, an important step that would foster wider adoption. The study also recommends that the federal government consider financial incentives, including increasing Medicare payments to providers who use approved electronic records systems and providing grants to institutions that embrace the technology.

The study found that electronic medical records systems could save money by reducing redundant care, speeding patient treatment, improving safety and keeping patients healthier.

A soon-to-be released RAND study prepared for the federal Agency for Healthcare Research and Quality concludes that there is not yet enough published evidence to reach conclusions about the relative costs and benefits of healthcare information technology. Given this shortage of published research, Hillestad and his colleagues undertook their project to help fill the knowledge gap by using computer simulation models to estimate possible savings and health benefits of the systems under a range of effectiveness values and assumptions about the level of adoption and use of electronic medical records.

Hillestad estimates that if 90 percent of doctors and hospitals successfully adopt health information technology and use it effectively, resulting efficiencies would save \$77 billion annually. The biggest savings would come through shorter hospital stays prompted by better-coordinated care; less nursing time spent on administrative tasks; better use of medications in hospitals; and better utilization of drugs, labs and radiology services in outpatient settings.

Researchers also estimate that an additional \$4 billion would be saved each year because of improved safety, primarily by reducing prescription errors as computerized systems warn doctors and pharmacists of potential mistakes.

The RAND researchers say their findings also suggest that the savings from health information technology could be much higher if the medical sector is able to achieve efficiency gains similar to those experienced by other industries that have embraced technology. If efficiency in the nation's healthcare system increased by an additional 1.5 percent per year — what economists generally agree was the impact of information technology on the wholesale and retail industry — savings could be as high as \$346 billion annually, the study says.

“A national system of electronic medical record keeping could take a significant bite out of health care costs,” Hillestad said. “These systems are expensive, but it doesn't take long before the benefits surpass the costs. People may choose to take the savings, or savings may be used to provide insurance to the uninsured. Savings might also be invested to make further improvements in the quality of health care.”

The study says it would cost U.S. hospitals about \$98 billion and physicians about \$17 billion to install the electronic medical records systems — an average of \$7.7 billion per year over a 15-year adoption period. However, it says replacing paper records with electronic tools eventually could generate much more in savings.

Advocates say health information technology may help curb America's \$1.7 trillion annual health care bill and aid efforts to boost quality, but relatively little research has been conducted up to now to demonstrate the value of health information technology or to estimate its potential value.

Despite the promise of savings, hospitals and doctors are uncertain that their initial investment in health information technology would pay dividends, so America's medical

system has been slow to embrace the technology. Only about 20 to 25 percent of hospitals and 15 to 20 percent of physician offices have adopted such systems and those systems are generally limited in their ability to share information with other providers according to RAND researchers.

“A major obstacle to investment in health information technology is that those who pay for it don't necessarily experience the savings,” Hillestad said. “We need to find ways to reward health providers who invest in measures that will boost efficiency and promote quality.”

RAND studied the impact of adopting electronic records systems that would include both patient medical records and additional supporting tools to help health professionals and patients. These additional tools would provide: prescribing support that checks patient allergies and drug interactions; decision support suggesting the best evidence-based practice for given conditions; and patient reminders about needed screening or other preventative measures.

“It's going to take 10 to 15 years to achieve wide adoption of electronic medical information, even if all the ongoing efforts are successful,” Hillestad said.

RAND researchers examined the potential benefits of health information technology by visiting hospitals and physician practices that have embraced the technology, reviewing past studies and interviewing experts in the field. In addition, the team analyzed the costs and benefits of information technology in other industries, paying special attention to the factors that enabled such technology to succeed.

The full benefit of healthcare information technology will not be realized unless hospitals and health providers use the technology innovatively to improve quality and cut costs, the study says.

For example, health information technology could make a major contribution to improving care for patients with chronic conditions such as diabetes, who account for 75 percent of the nation's medical care costs, according to researchers.

Computerized systems could help doctors identify patients at risk of becoming sicker and suggest preventive treatment. Patients could use remote monitors to transmit their vital information from home to medical providers, allowing a quick response to potential problems.

In addition, health information technology could help improve short-term medical care by reminding doctors to provide services during routine visits, such as flu shots, and encouraging patients to schedule visits for services such as cancer screenings.

These interventions have relatively low costs, but have the potential of trimming the nation's medical costs by another \$81 billion annually by reducing the need for costly hospital-based care when patients become sicker, according to the study.

Other authors of the two articles in *Health Affairs* are James Bigelow, Anthony Bower, Federico Girosi, Robin Meili, Richard Scoville, Roger Taylor and Kateryna Fonkych, all of RAND.

Funding for the RAND study was provided by companies interested in health information technology, including Cerner, General Electric, Hewlett Packard, Johnson & Johnson and Xerox.

A separate RAND study published in the same edition of *Health Affairs* suggests that federal officials should consider additional incentives to help spur the adoption of advanced electronic drug prescribing systems. Legislation that will create the first-ever prescription drug benefit for Medicare recipients in 2006 includes measures encouraging adoption of electronic prescribing technology.

However, many electronic prescription systems being adopted fall short of the full potential of the technology, warns study lead author Dr. Douglas S. Bell, a RAND senior natural scientist and assistant professor of medicine at UCLA's David Geffen School of Medicine.

Federal officials should consider additional incentives that would encourage medical providers to adopt more advanced drug prescription systems, according to Bell and co-author Maria F. Friedman, a senior advisor at the Centers for Medicare and Medicaid Services. These advanced systems are essential to achieving the full potential of electronic medical records described by Hillestad and his co-authors.

[RAND Health](#) is the nation's largest independent health policy research program, with a broad research portfolio that focuses on health care quality, costs, and delivery, among other topics.

About the RAND Corporation

The RAND Corporation is a nonprofit research organization providing objective analysis and effective solutions that address the challenges facing the public and private sectors around the world.

Learn More

- ▶ **“Can Electronic Medical Record Systems Transform Healthcare? An Assessment of Potential Health Benefits, Savings, and Costs”**
- ▶ **“Promoting Health Information Technology: Is There a Case for More-Aggressive Government Action?”**
- ▶ **E-mail sign up**

ABOUT

The RAND Corporation is a research organization that develops solutions to public policy challenges to help make communities throughout the world safer and more secure, healthier and more prosperous. RAND is nonprofit, nonpartisan, and committed to the public interest.



1776 Main Street
Santa Monica, California 90401-3208

RAND® is a registered trademark. © 1994-2022 RAND Corporation.