

Study finds e-medical records have varying effects on productivity

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(PhysOrg.com) -- The introduction of electronic medical records in hospitals and clinics — dubbed the “silver bullet” of health care reform — appears to have varying effects on different types of primary care physicians, a UC Davis study has found.

“Our research suggests that a ‘one-size-fits-all’ design does not work — the ideal technology design should vary by physicians’ requirements and work-flow demands,” said Hemant Bhargava, associate dean and professor of management and computer science at the UC Davis Graduate School of Management.

Bhargava and his research colleagues recently completed a study of a multimillion-dollar information technology project installed at six [primary care](#) offices from 2003 to 2006. The offices were part of a large primary care physician network affiliated with an academic medical center.

The study, one of the first to measure the impact of electronic medical record-keeping on doctors’ productivity, was conducted with Abhay Mishra, an assistant professor of health administration at Georgia State University, and research assistant Shuang Liu, a Ph.D. student in applied mathematics at UC Davis.

The system that was studied digitized patient records and allowed for electronic prescriptions and messaging.

The federal government has shown its support for developing electronic health records by setting aside \$19.2 billion in stimulus funds to help pay for such conversions across the country.

“Prior to our study,” Bhargava said, “there was controversy regarding the benefits of health care IT investments. In fact, there was some anecdotal evidence that these technologies reduced physician productivity.”

For the study, researchers analyzed the impact the technology had on physician productivity, collecting data on work hours and output before and after the introduction of EMR technology. The data was collected for about 100 physicians spread across three primary care categories — internal medicine, pediatrics and family practice — and six clinics.

The researchers found that the initial implementation of the EMR system resulted in a 25 percent to 33 percent drop in physician productivity. While significant, the drop was anticipated, Bhargava said.

“Initially, physicians and their staff had to learn the system,” he explained. “After a month of utilization, physicians and their staff became more comfortable with the technology and productivity overall increased to just below starting levels, with interesting variations by unit.”

Over the next few months, the researchers found that the impact of the new technology on productivity varied by physician group. Internal medicine units adjusted to the new technology and experienced a slight increase in productivity. In contrast, pediatricians and family practice doctors did not return to their original productivity levels and experienced a slightly lower productivity rate.

“These differences by unit suggest that there is a mismatch between technology design and the work-flow requirements and health

administration expectations for individual care units,” Bhargava said.

The findings, he explained, can be more easily understood by breaking EMR technology use into two categories — information review and information entry.

The use of [electronic medical records](#) makes information review — patient history, notes from previous visits, charts of test data and radiological images — more efficient. These features are useful to internal medicine doctors, who tend to see a greater proportion of ill patients.

In contrast, pediatricians’ work tends to involve more information entry and documentation for which EMR technology can be more time-consuming.

Bhargava suggests vendors and medical centers consider implementing different versions of electronic record keeping systems, tailoring the user interface, information entry and visualization features for different groups of physicians.

Provided by UC Davis

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