Paper Workarounds And Communication Breakdowns Pose IT Challenges And Improvements

A new research study investigates the challenges that pen and paper workarounds or computerized communication breakdowns pose to the use of electronic health records. Understanding these challenges may lead to improved coordination of care supported by health IT.

Focusing on referrals by primary care physicians to specialists and communications from the specialists back to the referring physician, *Paper Persistence, Workarounds, and Communication Breakdowns in Computerized Consultation Management* appears in the July 2011 issue of the *International Journal of Medical Informatics*. It is a follow-up to a pilot study *Exploring the Persistence of Paper with the Electronic Health Record*, published in the September 2009 issue of the same journal.

"We sought to develop an understanding of the current challenges to the outpatient consult management process in the Veterans Health Administration, which uses an electronic health record to support consultations requested by primary care physicians with specialists. We also wanted to see if two years after our pilot study, paper workarounds remained popular with the medical staff," said Regenstrief Institute investigator Jason Saleem, Ph.D., a research health scientist at the Health Services Research and Development Center on Implementing Evidence-Based Practice at the Richard L. Roudebush VA Medical Center in Indianapolis.

Using an electronic health record system for referrals provides a variety of advantages, including legibility of patient data, decreased likelihood of misplaced information, physician reminders that prompt actions, as well as simultaneous, distributed access and integration with other information systems. Potential disadvantages to using a computerized system for consultations had not received significant study prior to Dr. Saleem's work. "Electronic health records are a vast improvement on the old consultation process that involved paper medical records and phone calls, faxes or even letters to specialists to request consultations and then another phone call, fax or letter with the result sent back to the primary care physician. Yet our study of workarounds and communication breakdowns showed that switching to an electronic health record system isn't without flaws.

"We found, for example, that unless the specialist took the step of indicating the primary care physician should get a notification, or view alert, through the electronic health record, the referring physician may not know that the results of the consultation were available. And it was not uncommon for the specialist to write findings on a piece of paper, which carried the risk that medical orders would not be entered into the electronic health record, potentially creating gaps in

documentation or, if entered, producing unverified medical orders put in by someone other than the ordering provider," said Dr. Saleem, who is an assistant research professor of electrical and computer engineering at Indiana University-Purdue University Indianapolis.

The researchers noted that clinicians created their own shadow processes and tools to support their work when they believed that the computer system did not do so. In fact, the most frequent pen and paper workaround involved a clinic staff member giving printed consultation notes to the specialist. The specialist then reviewed the paperwork and handwrote orders. Another common workaround was the creation of electronic spreadsheets, outside of the electronic health record, to give the specialist more flexibility and functionality for tracking pending consults.

"It's rather ironic that automation that was supposed to improve contact between colleagues may actually reduce contact. Our findings are framed to help understand how organizational policies and pressures can potentially have a negative impact on work practices. Although some of the paper-based workarounds revealed are problematic, others offer efficiencies and other advantages over corresponding electronic workflows, and disclose potential limitations of the design of the computerized systems, giving us ideas of how to improve electronic health records," said Dr. Saleem.

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