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HITS @ TEPR: Marrying the CCR, PDF

By: [Joseph Conn / HITS staff writer](#)
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Last year at the Medical Record Institute's annual clinical IT show, Towards the Electronic Patient Record, the big project was to demonstrate the adoption of the Continuity of Care Record healthcare data-transmission standard by more than a dozen electronic health record vendors.

This year, "We really don't have a theme," said C. Peter Waegemann, chief executive officer of the Boston-based institute, which has hosted the show for 23 years. "But what is going on is an exciting time. The main activity is creating medical communities between hospitals and doctors' offices."

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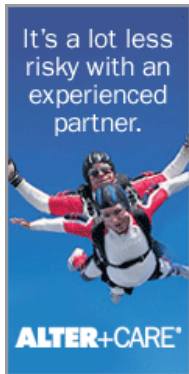


May 21, 2007

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That said, the Medical Records Institute did keep the spotlight on CCR development, giving out awards this year in two different categories, one for electronic medical-records system vendors who have done the best job of bringing CCR capabilities into their software, and the other for providers who have implemented IT projects using CCRs.

Two-day, pre-conference training program for both vendors and system users Sunday that was sold out and about another 50 wanting to get in, according to David Kibbe, the physician informaticist who runs Kibbe & Associates. Kibbe is a senior adviser to the American Academy of Family Physicians and a principal of an independent consulting group.

It's not as if vendors are moving much further along incorporating CCRs in their applications this year, a new element was added to the mix: the Portable Document Format, or PDF, developed as a document format by Adobe Systems in 1993, is now the de facto standard for printable documents. The marriage of the CCR and the PDF was the topic of several panel sessions Tuesday at TEPR.

One of the speakers was Steven Waldren, who last year replaced Kibbe as director of the Center for Health Information Systems at the AAFP. Waldren also serves as a member of the PDF Healthcare Working Group, which is developing best practices guidelines, a PDF Healthcare Best Practices Guide for users and a PDF Healthcare Best Practices Guide for system vendors.

The project is being jointly supported by two American National Standards Institute-accredited, not-for-profit organizations, ASTM International, West Conshohocken, Pa., and AHIM, Silver Spring, Md. Other companies are participating in the open development effort, including chipmaker Intel Corp., EHR vendor Epic Systems, and Adobe, developer of software to both create and read PDF files.

The project can be found at the [AHIM Web site](#), while more information about CCR standards is available at [ccrstandard.com](#).

The PDF Healthcare Best Practices Guide will use the Continuity of Care Record, a healthcare data standard developed in conjunction with the Massachusetts Medical Society and other organizations, including the American Medical Association. It will transmit patient information. But the guides could be expanded in the future to include the Continuity of Care Document, a standard developed jointly by ASTM and Health Level 7 as a CCR standard. HL7's Clinical Document Architecture.

One of the advantages of the PDF format will be a big advantage for physicians in small groups and solo practices where the rate of EMR systems is low. Most physicians have computers and Internet access even if they don't have software to read PDF documents can be downloaded free of charge. Acrobat, the professional software used to create PDF files, costs \$449.

"XML-based forms will allow us to embed data in a PDF, attach other PDFs, JPEGs (for images)." A layering function permits physicians to annotate a PDF, draw a picture on top of a PDF, add a comment, circle things and send it to a patient."

Lory Wood is chief security and compliance officer of Good Health Network, Maitland, Fla., a managed personal health record service. Wood said security measures such as password protection are embedded in a PDF document, but physicians "don't have to buy any special tools to see the file." They can just open it.

Many vendors for use in physician offices have embraced the CCR standard and can output a CCR into a PDF document or input data into their EHRs from a PDF.

Jonathan Bertman, president of EHR vendor Amazing Charts, was demonstrating the CCR/PDF format on the TEPR showroom floor. Bertman took an existing patient record from his system, converted it to the PDF format, copied it to his desktop, changed the patient name so that his system would recognize it as a new record, then imported it directly into his EHR as a new patient record.

The marriage of CCRs and PDFs "makes sense. I think that it is one small step toward the Holy Grail of interoperability."

Family physician Donald Stewart of Sammamish, Wash., has been in private practice since 1982, and digitized his first patient records using an Apple Newton PDA back in the mid-1990s.

"I think that a PDF is a really usable way of storing a Continuity of Care Record," Stewart said. "It will probably be widely accepted because the patients can read PDF files. If you have a computer, you can read PDF files. Producing them will pretty much depend on the vendors. If the vendors build it into the software, it shouldn't be an issue. But even then, it

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wouldn't be too hard to build an application that the doctors can use; deciding what goes into the CCR is the hard part. I imagine someone will create an Acrobat form that you send to the doctor and asks his staff to fill it in, or the patients can fill in themselves."

EVENT CALENDAR

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PDFs may not solve all problems, Stewart said, because getting hospitals to use the document format "will be a much bigger issue."

Stasia Kahn, a physician with the Fox Prairie Medical Group, a three-physician internal medicine practice in the western Chicago suburb of St. Charles, Ill., is also the vice president of a regional healthcare information organization, or RHIO—the Northern Illinois Physicians for Connectivity, based in Glen Ellyn, which was a third-place TEPR award winner for implementing a CCR. The RHIO includes the DuPage Valley Physicians, an incorporated group of independent practices that joined to gain contracting leverage; 339-bed Central DuPage Hospital in Winfield; 236-bed Edward Hospital in Naperville; and 128-bed Delnor-Community Hospital in Geneva.

Kahn uses an EHR from NextGen from which she can launch an add-on application, a CCR generator, developed by Schaumburg, Ill.-based technology vendor E-medapps. The company also created a Web-based portal to serve as the RHIO's exchange for CCR-based documents. So far, Kahn has sent CCR-generated 15 patient records. Four of them were viewed by physicians on their computers and the rest were delivered on paper.

On the electronic transmissions, Kahn said she creates a CCR of a patient record and either e-mails or calls the intended recipient's physician's office about its pending transmission. The URL of the portal where the record is located is included in the e-mail. As a security measure, a second e-mail is sent with a login and password to the portal.

Although her EHR has the capability to printout medical records for a patient, the CCR/PDF combination will produce a better-organized copy that is visually appealing and transportable, either to a home computer or to another physician via a thumb drive.

With the PDF, "This ... is the step I needed to give it to my patients," Kahn said. "It's nice to be able to attach other pieces from their chart. I could give them a chest X-ray report, which is a text document, or a scan report on their EKG. The PDF acts as a wrapper. It wraps it all up for my patients."

All a physician would need in his or her office to be able to open, view and print the PDF-based patient record is a computer, Internet access and a free PDF reader. Of course, if the receiving physician has an EHR, too, he or she can import the record into the system. If the physician has made the minimal investment in a PDF creator, the physician partners can have two-way interoperability.

Vikram Sheshadri, vice president of product management at E-medapps, said, "That's our next goal, to implement the PDF support for the CCR."

Kahn said she hopes to have the PDF-enhanced CCR system up and running in three to four months and will be able to demonstrate how the exchange works at TEPR next year.

Melanie Warfel, director of worldwide standards and live sciences for Adobe Systems and the point person for the company on PDF Healthcare, said neither Intel nor Adobe is funding the project, which started as a phone call between Intel Chairman Craig Barrett and Adobe CEO Bruce Chizen.

"It's very much an open work group," Warfel said. Balloting through AIIIM closed recently on the PDF Users Guide, and Warfel and other group members are responding to the comments they received.

"I think we'll probably be done in a week or so with the responses," Warfel said. "We have to go through another comment period." She was hesitant to guess how long the process will take before a final document is ready for dissemination.

"Anything that you can send to a printer can be turned into a PDF," she said. "We can be the front end to the CCR, the CCD or the CDA or whatever schema is out there."

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