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The Return of the Doctor's Doctor

When Professor Paul Chang's father, also a radiologist, retired, Chang was surprised when his father accused 'the PACS people' of 'killing radiology'. Chang Sr looked back to the time when the radiologist was indeed 'the doctor's doctor', before PACS was invented.

Speaking at the RSNA Annual Meeting in Chicago, Dr. Chang, Professor of Radiology at the University of Chicago, presented the Eugene P. Pendergrass New Horizons Lecture on Meaningful IT Innovation to Support the Radiology Value Proposition.

Now Chang said, radiologists sent 'messages in a bottle' and were almost invisible. PACS 1.0 got rid of film, PACS 2.0 improved workflow, but along the way there was no discussion of the value added by radiologists. Collaboration fell by the wayside, and radiologists could be devalued by the technology.

PACS 3.0 has innovated for meaningful use and now radiologists need to demonstrate their true differential value, as healthcare moves from fee-for-service to a more aligned model. The belief that PACS is solved is a misconception.

Radiologists are stuck between the Scylla of the demand for improved value and the Charybdis of decreasing reimbursements, increased consolidation and competition. Radiologists need to be prepared to be valued for managing the role of imaging in a capitated, aligned system.

Existing radiology IT/ informatics offerings are relatively immature, and only allow radiologists to demonstrate "commodity" level service. "We need more capable and agile IT solutions to provide measurable value to patient care", Chang said.

IT solutions can help in workflow - improving communication with upstream and downstream colleagues. Radiologists also need to reconnect with the health consumer. Radiology will not return to the personal contact of the pre-PACS era, but IT can enable radiologists to virtually collaborate with colleagues and patients.

"Radiologists may be efficient in the reading room, but it does not mean that they are efficient everywhere else", observed Chang.

Chang recommends an approach to improving the radiology value proposition by looking at the entire cycle, beginning and ending with the patient. Information throughput needs to be improved he suggested. Report turnaround time improvements alone are not sufficient. Computerised physician order entry (CPOE) in decision support can be a useful tool.

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Radiologists need to be valued for managing imaging, not interpreting images, Chang said.

Using information from the EMR will add value. Why not send information to the CT scanner, so the modality is used as the IT device? Optimise, choreograph and orchestrate the workflow outside the reading room. At his institution, there was a 60-70 percent improvement in CT scanning efficiency and quality by automating the procedure.

A Philips-University of Chicago research prototype lesion tracker is an intelligent agent which associates prior lesions and sends to downstream systems. There has been a 50 percent reduction in reporting time and improved accuracy.

Radiologists need to go beyond the report and the phone call. Web 2.0 has moved us from communication to collaboration.

Chang urged radiologists to view the radiology report as a portal. The information in there can be hyperlinked to other systems, and presented in graphical or text form, e.g. contrast or radiation dose.

In business intelligence, radiology needs to go beyond dashboards and monthly reports to scorecards measuring against key performance indicators. Intelligent agents can use natural language processing to extract information from the electronic medical record (EMR).

Chang compared booking imaging exams with the ease in which we can book airline tickets. if you are on the phone to an airline, then there's a problem. So why do you have to phone to book your mammogram?

Chang closed by saying the challenge is to re-engineer ourselves as radiologists. "The technology is easy", he said. "Changing human behavior and legacy workflow is much harder."

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