

Opinion

DICOM? What's That? Why You Should Care

Dr. Mills, can you take a call from Flora?"

"Sure, put her through."

Flora Lum, MD, is the director of the H. Dunbar Hoskins Jr., M.D. Center for Quality Eye Care, and she has been the Academy guru for quality of care initiatives like the *Preferred Practice Patterns* for the past 20 years. Lately, she has staffed the Academy Medical Information Technology Committee, which is providing guidance and standards for ophthalmic electronic health records (EHRs).

"Hi, Flora, whazzup?"... "You want an editorial on what? How can I write an Opinion on a topic that makes my eyes glaze over?"

I knew this would be my geekiest project ever, but I agreed to try to demystify DICOM (Digital Imaging and Communications in Medicine) and its accomplices for ophthalmologists who are ready to take the plunge into EHRs, but who are still wondering if there is enough water in the pool. As I thought about the task, I realized that before all of us were ophthalmologists, we were physicians—and, before that, we were geeks. We've always had a fascination with gadgets and how things work. What other professions sit around discussing Zernicke polynomials for fun over morning coffee? So maybe a geeky project is just what this Opinion column needs.

I learned that it's all about standards and interoperability. That is, do

the various devices in the ophthalmology office work smoothly with one another in the EHR environment? The visual field machine, the OCT, the HRT, the digital camera, the image management system, and the EHR software all need to be "DICOM compliant," meaning that they conform to an industry communication standard. The Baltimore Fire Department learned the hard way about standards and interoperability when a big fire broke out downtown in 1904. When it got out of hand, they sought help from nearby cities, whose trucks arrived but found that their fire hoses would not fit Baltimore's hydrants. So the Great Baltimore Fire destroyed the city. Now there's a national standard for fire hose coupling. We haven't yet reached that stage with EHRs in ophthalmology. Even as the market evolves, many companies, particularly those dealing with ophthalmic imaging and image management, still use proprietary communication protocols that effectively lock users into one vendor's products or require the purchase of specialized "system interfaces" from that company.

In addition to DICOM, ophthalmologists should know about two other standards: Health Level Seven International, and Integrating the Healthcare Enterprise (IHE)—Eye Care. The Academy experts in EHR believe that any system purchased in 2013 or later should have integrated all three standards, as vendors have

had time to implement them since the Academy Medical Information Technology Committee published its recommendations in 2011.¹ You should ask prospective vendor(s) to demonstrate how their EHR systems incorporate these standards for interoperability and imaging—and make sure that integration is seamless and time efficient. Also, see Practice Perfect (page 77) for more about integrating diagnostic devices with an EHR.

For those of you still reading this column, congratulations: You are among the true geekerati.

1 Chiang M et al. *Ophthalmology*. 2011; 118(8):1681-1687.



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