Coping with an Inadequate EHR in a Vitreoretinal Practice

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“Epic has created a product that is usable and often marginally acceptable, but is almost never excellent.”

The Health Information Technology for Economic and Clinical Health Act (HITECH Act), contained within the American Recovery and Reinvestment Act of 2009 (also commonly referred to as the Stimulus), has dramatically expanded the use of health information technology in the United States. An early and major beneficiary of this mandate has been the Epic EHR Company, the producer of the system that currently manages and stores nearly half of all health care records in the United States.

Epic was formed in 1979 by Judith Faulkner, who remains the company’s sole owner. Epic is based on the Massachusetts General Hospital Utility Multi-Programming System, or MUMPS, which is a general-purpose computer programming language first developed in 1966.

Epic currently dominates the institutional electronic health record (EHR) market; the system is responsible for storing nearly 40% of health care records in the United States. The company is clearly a business success, with revenues of approximately $1.7 billion in 2013. Ms. Faulkner, the sole owner of Epic, is reportedly worth $2.6 billion.¹

EPIC SHORTCOMINGS

In developing a widely adopted, enterprise-wide, 1-size-fits-all EHR, Epic has created a product that is usable and often marginally acceptable, but is almost never excellent. Epic is seriously lacking in updated technology. It is not an intuitive system, but is rather a complex elaboration of a paper system with some built-in triggers for alerts and with elaborate but difficult techniques for enterprise-wide searches of a patient’s medical record.

The American Medical Association, in a 31-page comment letter submitted in October 2014 to the Centers for Medicare and Medicaid Services (CMS) and the Office of the National Coordinator for Health IT, complained about the current general state of EHRs in the United States and called for several changes and improvements, including:

- Adopting a more flexible approach for meeting “meaningful use.”
- Expanding hardship exemptions for all stages.
- Improving quality reporting and interoperability of EHRs.
- Addressing physicians’ EHR usability challenges, noting that today’s EHRs are characterized by poor usability, time-consuming data entry, interference with face-to-face patient care, insufficient health information exchange, and degradation of clinical documentation.

SURVEY

A recent survey of multiple academic ophthalmology centers in the United States showed that multiple coping strategies have been used to deal with the new requirements imposed on practicing clinicians by the transition from paper charts (and, also, even from specialty-specific EHRs) to an Epic EHR (see the Table for a full list of institutions and participating doctors). In some cases, these additional workload burdens are also those required by CMS
These coping strategies include 1 or more of the following:

- Purchasing add-on Kaleidoscope-streamlining software from the Cleveland Clinic, for up to $700 000 per installation.
- Conducting an ongoing institutional EHR software development program to eventually result in a Cleveland Clinic-like streamlined software program, as has been done at the Oregon Health Sciences University for the past 10 years.
- Hiring scribes at $15 to $20 per hour to assist physicians with data entry (Scheie Eye, UCLA, Wake Forest, Michigan, Iowa, Oregon Health Sciences University).
- Increasing the time physicians spend generating their own medical records by approximately 1 to 1.5 hours-plus per day (Duke, UNC, Scheie Eye, others).
- Decreasing patients seen by approximately 10-12%, with decreased institutional revenue by a similar 10-12% (Duke [Ed Buckley, MD, Acting Chairman, Duke Eye Center; personal communication, June 2014] others; interestingly, 1 of the authors [MBL] has learned from personal communication with orthopedic surgeons at the University of North Carolina that their patient volume is down as much as 20% to 25% due to problems interacting with Epic, and that they have heard similar scenarios from orthopedic colleagues at Duke University, which went live with Epic about 1 year ago).
- Using trainees (eg, residents, fellows) as de facto data entry personnel (many places reported this practice, particularly those that do not employ scribes—some institutions forbid this practice, but they generally make use of some alternatives).
- Using physician personal time and/or investment to create personalized smart sets or other streamlining strategies. This can sometimes take 50 hours or more of physician professional time to accomplish.

Other strategies include the possibly illegal use of cut-and-paste techniques of medical record generation and photographing a medical record first generated on paper and inserting that photograph into the Epic medical record.² Clearly this negates the value of an electronic, digital, searchable medical record, but has been claimed to meet the meaningful use and physician quality reporting system requirements of the CMS.

**CONCLUSION**

It is hoped that the vitreoretinal community can come together to share other effective means of dealing with the new and significant workload imposed on vitreoretinal specialists by Epic. It may be possible to share ideas, and even software, that will facilitate improved retinal drawing, more rapid data entry, more streamlined and succinct smart phrase development, and even better face-to-face communication between doctors and patient, among other possible improvements.

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<td>The following institutions and retina professionals were included in a survey on coping with EHR implementation:</td>
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<tr>
<td>• Cole Eye Institute at the Cleveland Clinic: Rishi Singh, MD</td>
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<td>• Duke Eye Center: Sharon Fekrat, MD; Robin Vann, MD; Edward Buckley, MD; and Prithvi Mruthyunjaya, MD</td>
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<td>• Johns Hopkins University Wilmer Eye Institute: James Handa, MD</td>
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<td>• Oregon Health Sciences University: Thomas Hwang, MD</td>
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<td>• UCLA Jules Stein Eye Institute: Michael Gorin, MD, PhD, and Allan Kreiger, MD</td>
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<td>• University of Iowa Carver College of Medicine: H. Culver Boldt, MD, and Keith Carter, MD</td>
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<td>• University of Michigan Kellogg Eye Center: Mark Johnson, MD</td>
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<td>• University of North Carolina Kittner Eye Center: Maurice Landers, MD; Sai Chavala, MD; and J. Niklas Ulrich, MD</td>
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<td>• University of Pennsylvania Scheie Eye Institute: Joan O’Brien, MD; Thomasine Gorry, MD; and Alexander Brucker, MD</td>
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<td>• University of South Florida: Peter Reed Pavan, MD</td>
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<td>• Wake Forest School of Medicine: Craig Greven, MD</td>
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<td>• Weill Cornell Medical College: Donald D’Amico, MD</td>
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Thomas S. Hwang, MD, is a retina specialist at the Oregon Health Sciences University Casey Eye Institute. Dr. Hwang may be reached at Hwangt@ohsu.edu.

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