

Electronic Health Records: Potential to Transform Medical Education

Bryant A. Adibe, BS; and Sachin H. Jain, MD, MBA

Over the course of their clinical training, medical students and residents encounter countless patients. After the patients are discharged from their care, trainees often are left wondering how their patients fared: “Did my patient adhere to the proposed regimen? How did our intervention affect their outcome?”

Current paradigms for medical education do not demand that trainees ask or answer these questions. In practice, most trainees remain unaware of the outcomes of patients no longer under their direct care, leaving them with little to no feedback about the downstream impact of their diagnostic and prognostic impressions and decisions.

In a paper-based world of medical record-keeping, records are distributed across multiple sites. Trainees seldom have ready access to answer the simple question: “What happened to my patient?”

The American Recovery and Reinvestment Act of 2009 (of which the Health Information Technology for Economic and Clinical Health Act is a part) included more than \$27 billion in incentives for hospitals and physicians to adopt and meaningfully use electronic health records (EHRs). Although the impetus for EHR adoption is grounded in opportunities to improve the quality and efficiency of care delivery, the move to EHRs enables a critical transformation in medical education.

Electronic health records and clinical health information exchange (HIE) allow trainees to readily access longitudinal patient data. In integrated delivery systems with EHRs and HIE, digital record-keeping platforms afford trainees access to clinic notes, imaging studies, consultant notes, and hospital discharge summaries. Empowered with this type of longitudinal information, they can audit their diagnostic impressions and management.

Educators should seize the broad diffusion of EHR and HIE technology to restructure the expectations for clinical education and practice. Throughout and beyond a given rotation or service, trainees could be assigned to track a panel of diagnostically complex patients.

At specified time intervals, these records could be revisited and reviewed with a se-

nior preceptor. Trainees could perform a critical analysis of how decisions in care subsequently affected patients and their course.

As an added benefit, EHRs also might help enable other modern skills of practice that are difficult to teach with paper-based record-keeping. Students, residents, and fellows can be trained to manage population health through registries, audit and improve quality at the point of service delivery, and perform public health surveillance. Indeed, the EHR can be an enabling platform to teach physicians many newly relevant skills absent from physician training.

The approach we are advocating is consistent with the Advanced Learning Portfolio approach put forth by the Accreditation Council on Graduate Medical Education. It will be an important pathway for supporting the professional development of physicians who are conscious of the need to pursue lifelong learning that is shaped by opportunities created by the patients in their care.

Two critical obstacles may stand in the way of implementing EHR-based approaches to longitudinal patient-oriented education.

First, some medical centers that adopt EHRs do not give students and residents access to EHR systems out of concern for the privacy of patient information. Although trainees will have access to sensitive information in an EHR-enabled clinical environment, learning to effectively manage the privacy and security of patients should be a critical skill modeled for, taught to, and enforced among physicians-in-training. Academic medical centers should work on approaches to educate and inform patients about the educational value of longitudinal access to records, as well as highly transparent means of obtaining patient consent for long-term access and follow-up.

Second, changing medical school and postgraduate curricula is challenging given the already-full curricula in both training settings. Finding a place for EHR-enabled longitudinal assessment and audit of one’s patient care, however, is worth the effort. Knowing and reflecting on the eventual outcomes of patients can both improve the quality of care delivered and, importantly, the satisfaction physicians have in delivering it.

While hospital and physician offices around the country are transitioning to the “meaningful use” of EHRs in practice, medi-

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cal educators should carefully consider ways in which they can meaningfully improve how they train physicians for practice. Empowering physicians with tools to test and assess their own practice patterns will drive the necessary added focus on outcomes that should be at the center of modern medical practice.

Author Affiliations: From the Office of the National Coordinator for Health Information Technology (SHJ), US Department of Health and Human Services, Washington, DC; and University of Florida College of Medicine (BAA), Gainesville, FL.

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Address correspondence to: Sachin H. Jain, MD, MBA, Office of the National Coordinator for Health Information Technology, US Department of Health and Human Services, 200 Independence Ave SW, Ste 729D, Washington, DC 20201. E-mail: sachin.jain@hhs.gov. ■