EDITORIAL AND COMMENT

Electronic Health Records and the Increasing Complexity of Medical Practice: "It Never Gets Easier, You Just Go Faster"

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Electronic health records (EHRs) continue to make physicians' lives more complicated. Through the EHR, physicians are being asked to take on ever more tasks that were previously done by office staff or are totally new to medical practice. Physicians maintain coded lists of diagnoses, medications, and allergies; enter orders; initiate referrals; fill out billing forms; fulfill quality reporting requirements; and do population management.

With the Medicare and Medicaid EHR Incentive Program, better known as "meaningful use," physicians are required to do even more. Stage 2 of meaningful use requires physicians to maintain searchable notes, use clinical decision support, generate lists of patients for quality improvement and reporting, communicate electronically with other providers, exchange summary care records, and perform surveillance or public health reporting.

Each of these "meaningful" tasks has a different set of rules, has different stakeholders, and often requires new software. Some practices have separate EHR, quality reporting, billing, and population management systems. Other EHRs tie functions together, but even those may require physicians to double and triple document certain aspects of care. For example, physicians may have to interact with decision support, make a coded change in the EHR, and then document what was done. Through the EHR, physicians seemingly always have to do something *in addition*, adding work to an already overfull schedule.

Why are we doing all this? According to the Office of the National Coordinator for Health Information Technology, "the goal of meaningful use is to promote the spread of electronic health records to improve health care in the United States." We agree and would be slightly more specific: we hope EHRs and meaningful use will enable safe, high-value, high-quality care. Despite these high hopes, EHRs have yet to demonstrate a consistent improvement in care quality.[1, 2]

In this issue of JGIM, Kern and colleagues[3] report a cross-sectional analysis of 466 community-based primary care physicians. Kern and colleagues compared the 56 % of physicians who implemented and used an EHR with the remainder who did not. EHR-using physicians had significantly better quality on four of nine measures. The improvements were dominated by two measures, breast cancer screening and colorectal cancer screening, for which the absolute improvement was modest (+4 % and +3 %, respectively). EHR-using physicians had worse quality of care on one measure: appropriate testing for children with pharyngitis.

Weaknesses of the analysis include that it was non-randomized and cross-sectional; included only nine process measures; focused on a single independent practice association; and lacked data about actual EHR use. The investigators ran up against the well-recognized challenge of having enough applicable visits per measure per physician. Only 41 % of primary care physicians had enough patients on any one measure to be included in the analysis. Strengths of the analysis include the variety of primary care physicians; use of data from five different payors; and inclusion of federally qualified health centers and small practices.

The findings of Kern and colleagues are useful, but ultimately irrelevant. As it stands, 55 % of physicians have an EHR; half of the remainder plan to install an EHR within 1 year.[4] Penalties for not using an EHR will be implemented in 2015. In the next few years, with rare exception, all practices will be using an EHR. The time for comparisons between those who do and do not use EHRs has passed us by.

Much more important than *whether* physicians use EHRs is *how* physicians use EHRs. We do not yet know if the requirements established by meaningful use are going to improve value, safety, and quality. Kern and colleagues point out that randomized controlled trials of EHR use are unlikely. Randomized controlled trials of the individual meaningful use criteria are also increasingly unlikely. However, as EHRs and meaningful use are implemented, it will be important to monitor the program and report on a wide variety of outcomes.[5] We will likely be able to make useful comparisons between and within health systems when EHRs and meaningful use criteria are implemented in different ways.[6, 7]

Technology and its implementation are important, but we should not expect technology to have a significant impact by itself. Health information technology use and impact will be powerfully influenced by healthcare financing and medical culture.

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Current healthcare financing impedes meaningful use of EHRs. Fee-for-service payment and documentation requirements are major reasons why the components of meaningful use feel like add-ons to what physicians seek to accomplish in clinic. EHRs are designed to support how physicians are currently reimbursed. EHRs are organized to urge us to do things to patients and produce notes that comply with Evaluation and Management criteria, but not actually improve care.[8] In fact, EHRs that facilitate generating a high Evaluation and Management level note may actually impair inter-physician communication.[9] Just as fee-for-service prevents adoption of new research,[10] fee-for-service payment hinders meaningful use of EHRs.

Medical culture may also impede meaningful use. Medical culture values going above-and-beyond for individual patients and, for internal medicine in particular, conducting exhaustive work-ups of newly presenting disease. Population management, prevention, chronic disease management, and working with nonphysician team members have been undervalued. Although we tout our team approach to care, the idea of true teams caring for a patient, and the communication that entails, is just beginning to take shape. High-value care has been an even lower priority, but we should be focusing on the right care at the right time for our patients.[11]

We dream of a not-so-distant future in which EHRs, healthcare financing and medical culture work together to facilitate providing high-quality and high-value care for patients. The "dream EHR" would be an integrated, seamless, self-functioning system that frees teams to concentrate on caring for patients. Physicians and office staff attend to coded data; physician "documentation time" is spent composing short, useful summaries and communications for themselves, staff, other clinicians, and patients; natural language processing extracts and offers additional coded elements; and quality measurement, decision support, and population management are complementary facets of the same underlying data and rules.

Physicians should be reimbursed for delivering high-value, safe, high-quality care. The "proof" of care should not be a collection of billing codes or the sometimes meaningless extract that can pass for a note. The proof of care should be the totality of the data in the EHR, including EHR-based quality measures. These changes may be enabled by new payment models like global payments, and organizational structures like the patient-centered medical home and accountable care organizations. Underlying changes in the technology and financing should be a medical culture that values public health as well as individual health; high value care as well as high quality care; and true teamwork across disciplines and positions as well as dedicated individuals.

EHRs have the potential to make medical practice easier. We hope that EHRs will be like many technological innovations that tame complexity. The EHR may yet develop into a unified place for decision support, quality measurement, population management, billing and communication.

However, EHRs may not make medical practice easier. Maybe implementing and improving EHRs is like training for bicycle racing. Greg LeMond said, "It never gets easier, you just go faster." What he meant was that a better-trained rider still needs to put in the highest level of effort, but will be able to accomplish things he was unable to do previously. Similarly, it may be too much to hope that EHRs are going to make our jobs simpler. Perhaps we should *not* expect EHRs to make our lives easier. However, we should expect EHRs to enable us to improve what we do today and accomplish things we have never been able to do before.

Whether easier or not, EHRs will enable physicians to do more for their patients. Changes in EHRs, healthcare financing, and medical culture are going to continue interacting in complex ways. We will endure—perhaps even welcome—this complexity, and continually demand the best from our technology, financing, and culture by staying focused on delivering patient care that is of increasing value, safety, and quality.

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REFERENCES

1. **Linder JA, Ma J, Bates DW, Middleton B, Stafford RS.** Electronic health record use and the quality of ambulatory care in the United States. Arch Intern Med. 2007;167(13):1400–1405.
2. **Reed M, Huang J, Graetz I, et al.** Outpatient electronic health records and the clinical care and outcomes of patients with diabetes mellitus. Ann Intern Med. 2012;157(7):482–489.
3. **Kern LM, Barron Y, Dhopeshwarkar RV, Edwards A, Kaushal R.** Electronic health records and ambulatory quality of care. J Gen Intern Med. 2013; doi:10.1007/s11606-012-2237-8.
4. **Jamoom E, Beatty P, Bercovitz A, Woodwell D, Palso K, Rechtsteiner E.** Physician adoption of electronic health record systems: United States, 2011. NCHS Data Brief. 2012;98:1–8.
5. Department of Health and Human Services. Office of Inspector General. Early assessment finds that CMS faces obstacles in overseeing the Medicare EHR incentive program. November 2012. OEI-05-11-00250. https://oig.hhs.gov/oei/reports/oei-05-11-00250.pdf.

6. **Linder JA, Schnipper JL, Middleton B.** Method of electronic health record documentation and quality of primary care. J Am Med Inform Assoc. 2012;19(6):1019–1024.
7. **Samal L, Linder JA, Lipsitz SR, Hicks LS.** Electronic health records, clinical decision support, and blood pressure control. Am J Manage Care. 2011;17(9):626–632.
8. **Abelson R, Creswell J, Palmer G.** Medicare bills rise as records turn electronic. *New York Times.* September 22, 2012. http://www.nytimes.com/2012/09/22/business/medicare-billing-rises-at-hospitals-with-electronic-records.html.
9. **Turchin A, Goldberg SI, Breydo E, Shubina M, Einbinder JS.** Copy/paste documentation of lifestyle counseling and glycemic control in patients with diabetes: true to form? Arch Intern Med. 2011;171(15):1393–1394.
10. **Timbie JW, Schneider EC, Van Busum K, Fox DS.** Five reasons that many comparative effectiveness studies fail to change patient care and clinical practice. Health Aff (Millwood). 2012;31(10):2168–2175.
11. **Smith CD.** Teaching high-value, cost-conscious care to residents: the Alliance for Academic Internal Medicine-American College of Physicians curriculum. Ann Intern Med. 2012;157(4):284–286.