TECHNOLOGY

Medical Information Technology

Your Monthly IT Guide since 1995!

Are Electronic Health Records Already Obsolete?

Bernd Wollschlaeger, M.D., FAAFP, FASAM

I am an early adopter of medical information technology and in 1981 started utilizing computers as tools in my clinical education. In 1996 I switched to a (almost) paperless office and ever since use an Electronic Medical Record in my clinical practice.

Initially, stand alone single functionality systems (i.e. electronic prescribing, patient information management, laboratory database) offered reasonable solutions for my daily information management needs. Soon afterwards vendors offered systems integrating all necessary components and called them Electronic Health Records (EHRs). But did they achieve this goal of full system integration? Well, according to a recent report "Initial Lessons From the First National Demonstration Project on Practice Transformation to a Patient-Centered Medical Home[i]," published in the May/June Annals of Family Medicine, they missed that ambitious goal.

The authors claim *"The hodgepodge of information technology marketed to primary care practices resembles more a pile of jigsaw pieces than components of an integrated and interoperable system."*

Unfortunately, the authors are correct. We are currently following a vendor-centric approach offering physicians specific EHR products. Most of these products may provide comprehensive patient and practice management solutions but do poorly in data information exchange with other EHRs and are even less reliable in interfacing with different laboratories, vaccination or disease registries. Yes, vendors are willing to develop such interfaces and/or exchanges but often charge exorbitant prices.

But wouldn't it be preferable to gradually implement components or modular applications instead of a comprehensive electronic health record (EHR)? David Kibbe, M.D. emphasizes in a recently published article "Towards a Modular EHR"[ii] that the shift from a vendor-centric approach to one that is platform-centric and modular has been described at length in the business and computing literature.

Clayton M. Christensen, PhD, the noted Harvard Business School professor and author of several books on innovation, has described this evolution at length, even coining a "law of the conservation of modularity."[iii] Christensen explains that in some industries, when the products are relatively new and not very good in terms of performance, the early entrants must provide all of the parts of the product by themselves. For example, if you wanted to be in the computer industry in 1982, you needed to manufacture the computer's operating system, the application software, the peripheral devices, the processors, etc. Even the cases housing the various components came from a single producer. The product was "vertically integrated". IBM, Digital Equipment, Unisys and Wang were all companies from whom customers had to buy the entire package, including consulting. But over time, as the performance of the product improved, the vertically integrated, highly proprietary companies whose approach was strongest during the early phases of the industry's development gave way to non-integrated and horizontally stratified companies whose products are capable of integrating through standards, not by virtue of a single company's owning all the components. Christensen says this "looks like the industry got pushed through a bologna slicer." This happens because the basis of competition changes. Customers become less willing to reward further slow improvements in functionality (for example, adding a registry on to an existing EHR by paying premium prices). *Companies that get better at giving customers exactly what they want (for example, e-prescribing or a registry) when they want it and at an affordable price earn attractive profit margins. And they take business away from the vertically integrated firms.* Modularity, in effect, enables the disintegration of the industry.

What's happening in today's EHR industry is analogous. *Vertically integrated, top tier companies would like to continue to sell comprehensive EHRs to their customers, who will pay their highest prices at maximum profit margins, often greater than 50 percent. But they are struggling to add value fast enough and at a price individual practices cannot afford.*

According to David Kibbe *"doctors have arrived at a next stage of value addition for EHR technology, one at which faster response, greater agility, convenience and lower pricing have become as important as or more important than a very long list of features and functions that are no longer as useful or desirable as they once were perceived to be."* Therefore, we as physicians should stop rewarding product vendors by buying their products. We should demand that we can try, activate and purchase product components as we gradually digitalize our practices. We should be able to plug-and-play instead of buying the entire package and pray that we will eventually understand using all components most of those we often do not need.

When do we start transitioning from a vendor-centric to a physician-centric approach?

When do we stop rewarding vendors with huge profit margins and receive poor service in return?

Meanwhile large software vendors are fighting in Washington to PREVENT the shift to plug-and-play modularity. We need to push back those special interest groups and need educated and enlightened physician leadership, which understands the necessity and urgency of this issue. We can't wait any longer!

I look forward toreading your comments and suggestions on our blog at:
*http://*miamimedblog.blogspot.com/
or send me a twit at http://twitter.com/dadedoc.

References:

[i]Nutting PA, Miller WL, Crabtree BF, Jaen CR, Stewart EE, Stange KC. Initial lessons from the first national demonstration project on practice transformation to a patient-centered medical home. Ann Fam Med. 2009;7:254–260.

[ii]David Kibbe, MD. Towards a Modular EHR. Family Practice Management, July-August 2009, Vol.16-2009

[iii]Christensen CM, Raynor ME. Innovator's solution: creating and sustaining successful growth. Boston: Harvard Business Press; 2003.

Next month: Open-Source Technologies for Electronic Health Records revisited.

Disclosure: The author is a practicing family physician, addiction specialist and computer consultant. In addition, he is a founder and managing partner of VirtualMed,LLC (www.virtualmed.com)