The Health Internet: The Future of Health Information Technology and Exchange?

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Abstract

Health information technology (HIT), and specifically electronic health records (EHRs), is a topic of great interest and discussion nationally. With all that is occurring nationally and locally in HIT, this article takes a step back to explore the roots of the discussion and the current state of affairs nationally that will impact physicians in Arizona. The article also provides a simple analogy, one that is looking more and more viable as the future of HIT—the creation of a Health Internet.

Background

Nationally, the spotlight shines bright on the implementation of EHRs, including the establishment of incentives in the Federal Stimulus bill passed by Congress.[1] Several new words and phrases, formerly limited in usage to those in the HIT industry, are making their way into use by doctors, nurses, caregivers, health care executives at all levels, and even patients. These words include "health information technology (HIT)," "health information exchange (HIE)," and "health information infrastructure (HII)." This article briefly explores the roots of this discussion, introduces these and other terms, and frames the activity occurring around their current and future implementation in Arizona.

Why

The Institute of Medicine (IOM) started much of the momentum in the area of EHRs in 2001.[2] In the IOM publication *Crossing the Quality Chasm,* its Committee on Quality of Health Care in America recommended a common purpose, six aims for improvement, and ten "Simple Rules for the 21st-Century Health Care System." The common purpose is fairly generic and essentially recommends all stakeholders in the health care system should continually seek to reduce the burden of illness, injury, and disability and to improve the health and functioning of U.S. citizens.[3]

To achieve this purpose, six aims for improvement from the patient perspective were described: safety, effectiveness, patient-centeredness, timeliness, efficiency, and equity.[4] To accomplish these aims, ten rules were suggested. These rules were not intended to be ends in themselves, but guidance for behavior by health care professionals that would subsequently lead to innovation and creation of new systems to meet the aims. These rules are described by the IOM in the following IOM table, which contrasts them with perceived present approaches. It is easy to see that these rules are interrelated and open to interpretation.

Simple Rules for the 21st-Century Health Care System[5]

Current Approach	New Rule
Care is based primarily on visits	Care is based on continuous healing relationships
Professional autonomy drives variability	Care is customized according to patient needs and values
Professionals control care	The patient is the source of control
Information is a record	Knowledge is shared and information flows freely
Decision making is based on training and experience	Decision making is evidence-based
Do no harm is an individual responsibility	Safety is a system property
Secrecy is necessary	Transparency is necessary
The system reacts to needs	Needs are anticipated
Cost reduction is sought	Waste is continuously decreased
Preference is given to professional roles over the system	Cooperation among clinicians is a priority

How

Whether these aims and rules are adopted in whole by a clinician, their value is clear. Clinicians, consumers, and others seeking to adopt any one of them can be aided by the implementation of HIT and HIE.

Blumenthal and Glaser described HIT in the *New England Journal of Medicine* as "an enormously diverse set of technologies for transmitting and managing health information for use by consumers, providers, payers, insurers, and all the other groups with an interest in health and health care."[6] They continued, "(a)lthough it is helpful to be familiar with the types of HIT, the implications of the technologies for doctors and patients really depend on nontechnical considerations."[7]

It may then come as no surprise that Dr. David Blumenthal has since become the Director of the Office of the National Coordinator of Health Information Technology, with John Glaser as one of his advisors. Blumenthal and Glaser continue to emphasize the importance of the technical and non-technical considerations.

These non-technical considerations include managing the changes that will occur within a practice when technology is implemented, helping consumers understand and filter through the information and tools that become available, establishing governance and funding for technologies used by all stakeholders, and identifying policies be necessary for the successful implementation of the technologies. These issues are a top priority for the health care leaders who are members, committee members, and board members of Arizona Health-e Connection.

Keeping it Simple, Yet Not Easy

The title of this article is "The Health Internet**:** The Future of Health Information Technology and Exchange**?**." That is perhaps the easiest way to describe the future of HII, which includes the technology and policies that accompany it. It will be a network that allows the appropriate information sharing by those that need to provide or view the information along with a yet-to-be-developed economy of businesses and innovations that will show value through the creation or use of this information. This will require that information be placed in digital format when it is created (e.g., a clinician's EHR, a laboratory information system) and that each point of care

have an electronic interface that allows the appropriate sharing of the information. This is similar to the way that Internet users access information (e.g., websites) that resides on servers located all over the world or make such information available themselves through shared online tools (e.g., Facebook), their own websites, or mobile device (e.g., smart phone).

As an example, take the case of a Type II diabetes patient that uses a digital glucometer and scale at their home to provide scheduled uploads of data to caregivers, care managers, and the patient's own personal health record (PHR): Charting this data, as well as lab tests, is available as needed by the patient's clinicians. If the patient is a "snow bird" living in Arizona in the winter, lab results, medications, and information relative to the care provided in the patient's summer residence would now be available to Arizona clinicians. Likewise, if the patient is traveling in Europe or Asia, they can either upload information through their smart phone to care managers back home, or if an emergency department visit occurs in a foreign country, the patient's information (e.g., medication history) is available through HIE or a personal health record (PHR).

The Road Ahead

As far as what lies on the road ahead months and years from now, there will be many new developments, programs and challenges. Moving forward, one of the most important aspects of the landscape relates to the billions in Federal Stimulus money dedicated to HIT through the American Recovery and Reinvestment Act (ARRA) of 2009.

Many of you are likely aware of the federal financial incentives that will become available to hospitals and eligible providers in the coming year. These incentives will be available for eligible providers who can demonstrate "meaningful use" of EHR and will range from up to approximately $44,000 over five years for providers who meet Medicare requirements and up to approximately $65,000 over five years for providers who meet Medicaid requirements.

Some significant developments on this front have occurred recently, one of which was the release by the federal government at the end of December of a 550 page Notice of Proposed Rulemaking that defines the requirements for "meaningful use." Comments will be accepted on the proposed rule through mid-March, and it is anticipated that a final rule will be released in late spring or early summer. Arizona Health-e Connection continues to track these developments and will be facilitating the submission of comments on behalf of Arizona stakeholders.

In the end, HIT and the "Health Internet" is simple to describe, yet not easy to implement. It will take the cooperation of many, and interest in what is best for health care consumers to ensure solutions are win-win. Such an approach will improve experiences for health care providers and health care consumers.

Learn More

If you are interested in learning more about federal efforts and initiatives occurring in Arizona, visit www.azhec.org or call 602-288-5130. Arizona Health-e Connection will continue to work with AOMA to keep its members apprised of new developments, ensuring that Arizona's providers have all the information needed to take full advantage of upcoming programs and incentives available to them.

ENDNOTES

1 United States Congress, *American Recovery and Reinvestment Act of 2009.*
2 The Institute of Medicine Committee on Quality of Health Care in America, *Crossing the Quality Chasm: A New Health System For the 21st Century.* Washington, D.C.: National Academy Press, 2001.
3 ibid
4 ibid
5 ibid
6 Blumenthal, D, Glaser, J.P. *Information Technology Comes to Medicine, The New England Journal of Medicine*, Volume 356:2527-2534, June 14, 2007, Number 24.
7 ibid