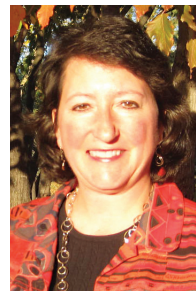


A Call for a New Health IT Strategy

In a report issued to President Obama in December 2010, the President's Council of Advisors on Science and Technology (PCAST) recommended a significant shift in strategy in order to achieve the promised goals of health information technology (HIT) to improve healthcare quality and lower its cost. The report calls for the federal government to push hard for a national IT infrastructure where patient data can be accessed in real time by providers and be de-identified and accessed by researchers and public health officials. One goal is to enable a market for applications that enhance electronic health record (EHR) usability and patient involvement. The shift may have major impact on pharmacy system vendors and the work of the Pharmacy e-Health Information Technology Collaborative.

The benefits that HIT adoption may catalyze for healthcare are severalfold, according to the PCAST report, and include:

- Integrating technology into clinical practice as an asset, while minimizing unproductive data entry work.
- Giving clinicians real-time access to complete patient data and information to make the best decisions.
- Helping patients become more involved in their own care.
- Enabling a range of population-level public-health monitoring and real-time research.
- Improving clinical trials, leading to more rapid advances in personalized medicine.
- Streamlining processes, increasing their transparency, and reducing administrative overhead, as it has in other industries.
- Leading to the creation of new high-technology markets and jobs, and helping support economic reforms in the healthcare system that will help address the country's long-term fiscal challenges.



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Entitled *Realizing the Full Potential of Health Information Technology to Improve Healthcare for Americans: The Path Forward*, the 108-page document examines the potential of HIT to improve health; assesses current HIT adoption; introduces a new model for the HIT ecosystem — an architecture to address privacy and security concerns, economic and regulatory issues, and HIT research opportunities; and provides guidance to government agencies and specific recommendations.

PCAST is an advisory group of the nation's leading scientists and engineers, appointed by the president to augment the science and technology advice available from the government. PCAST is consulted about and often makes policy recommendations concerning the full range of issues where understandings from the domains of science, technology, and innovation potentially bear on the policy choices before the president. A list of PCAST members may be accessed at <http://www.whitehouse.gov/ostp/pcast>. PCAST created the report with the assistance

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of a working group of nongovernmental experts and consulted with government officials, industry representatives, IT experts, and healthcare professionals.

Significant Changes Proposed In brief, PCAST concluded that for HIT to achieve the benefits shown in the box on the previous page and transform healthcare as technology has transformed other industries and the economy, a different strategy is needed from that outlined and funded in the 2009 stimulus bill (HITECH), by the 2010 ACA/healthcare reform bill, and by the Office of the National Coordinator for Health Information Technology (ONC). The report acknowledges these federal initiatives as making some important advances, but says, “healthcare has taken only the first few steps toward an electronic future.” The report cites the fact that 80% of all physicians are in small, independent practices that lack even “rudimentary” digital records.


Other problems include a slow diffusion of IT into healthcare, and its primary focus on administrative func-

tions instead of clinical support. Healthcare providers lack technical expertise and financial incentives to implement systems that share information. The fee-for-service payment model is not creating strong incentives to share information, avoid unnecessary treatments, or coordinate care. Further, existing electronic records lack usability and links to other information for clinical decision support. Standards and infrastructure are lacking that would allow information to be easily shared across organizations as well. The report notes that relevant information does not move with patients who visit multiple providers to receive care. Federal efforts to encourage local and regional health information exchanges (HIEs) are hampered by agreements between exchange users, lack of financial incentives, and weak long-term business models. Finally, patients have concerns about the privacy and security of health information.

While acknowledging the success of some EHR systems, such as the VA’s VistA and Kaiser Permanente’s Health-Connect, the report notes that these are still closed systems that do not exchange information between

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PCAST calls for the creation, dissemination, and use of a “universal exchange language” for health information that enables it to be shared through a network infrastructure that allows a patient’s data to be located and accessed with strong, persistent privacy preferences.

providers on a large scale and cannot be easily searched for timely information needed in emergency situations. To achieve the real-time data access system described, PCAST outlines a technological approach that strongly protects patient privacy and lays out the economic and regulatory steps necessary.

PCAST calls for the creation, dissemination, and use of a “universal exchange language” for health information that enables it to be shared through a network infrastructure that allows a patient’s data to be located and accessed with strong, persistent privacy preferences. The language would be based on some kind of extensible markup language syntax. The strategy represents an “evolutionary” transformation from traditional EHR systems to a “tagged data element” model in keeping with managing and storing data using advanced data-mining techniques that break down data into the smallest individual pieces that can be exchanged or aggregated. PCAST uses the analogy of a person today using his or her computer to access a Web page where various parts of the page are dynamically aggregated in real time from many different computers.

Tagged data elements would be accompanied by a mandatory “metadata tag” that describes the data attributes, provenance, and privacy protections. PCAST says that by storing data in this fashion, clinicians would be able to easily access a patient-centric record tailored to each medical encounter. Further, the data does not rely on a single provider or vendor for use. The data element indexing and access services needed to facilitate this model are viewed as part of the national health infrastructure. In sum, PCAST describes the strategy change as one where all healthcare is organized around the needs and specific characteristics of the patient rather than the physician’s office, hospital, insurance company, or EHR vendor. Further, the approach does not

require a uniform patient identifier or national healthcare data repository.

This “disruptive innovation” is consistent with the themes outlined by Harvard’s Clayton Christensen during his keynote address at the American Pharmacists Association annual meeting in March. Christensen has studied numerous industries changed by disruptive innovation, and noted that as technology impacts healthcare, it will be moved to more local delivery wherever the patient is. PCAST credits Internet-based cloud-computing

technologies and personal health records as examples of technologies that provide disruptive innovation.

Midterm goals outlined for moving toward this new strategy include universal access by clinicians and patients; a robust platform for developers to create user interfaces, decision support, storage, and archiving services widely available with little capital investment; seamless, user-transparent, cross-organizational data exchange; strong privacy protection both for data at rest and in transit; and a way to efficiently aggregate de-identified data for public health and research purposes. The report dedicates a chapter to explain a health IT architecture for privacy and security based on encryption, authentication, authorization, and auditability. Costs would be borne by both the public and private sectors.

PCAST outlines 24 specific recommendations for the U.S. chief technology officer, as well as ONC, CMS, HHS, and other agencies. One recommendation is for ONC to move to ensure the development of these capabilities and that ONC work with CMS to focus 2013 and 2015 “meaningful use” guidelines on comprehensive ability to exchange health IT. PCAST also says it has important concerns about CMS’s internal data infrastructure being hampered by long implementation cycles and the need to be modernized and revamped to effectively engage in HIT exchange. **CT**

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