The State of Health Information Technology Adoption & the Nation's Health Information Infrastructure: Recommendations from the JASON Report

Robert Wood Johnson Foundation Briefing

Washington, DC
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Background

The JASON Report[1] was commissioned by the U.S. Department of Health and Human Services (HHS) through the Office of the National Coordinator for Health Information Technology (ONC) and the Agency for Healthcare Research and Quality (AHRQ) to explore how to develop real-time, integrated, large-scale clinical datasets to support clinical research and public health. The Report identifies two key issues related to this goal:[2]

1. The current lack of interoperability among data resources for electronic health records (EHRs) is a major impediment to the exchange of health information and development of a robust health data infrastructure. Interoperability issues can be resolved only by establishing a comprehensive, transparent, and overarching software architecture for the exchange of health information.
2. Improving health care and lowering health care costs will be realized only if health-related data can be explored and used in the public interest, for both clinical practice and biomedical research. This will require implementing technical solutions that both protect patient privacy and enable data integration across patients.

The Report includes specific recommendations to address these issues and presents other findings and recommendations on related technical matters.

On August 7, 2014, the Robert Wood Johnson Foundation hosted "The State of Health Information Technology Adoption & the Nation's Health Information Infrastructure: Recommendations from the JASON Report," a briefing to discuss the Report's findings and recommendations. The Briefing included speakers from a variety of backgrounds, including providers, policy advisors, and federal government officials.

Briefing Summary and Highlights

KEYNOTE

Karen DeSalvo, MD, MPH, MSc – National Coordinator for Health Information Technology, U.S. Department of Health and Human Services

[1] The report is available in full here: http://healthit.gov/sites/default/files/ptp13-700hhs_white.pdf
[2] JASON Report, at p. 13.

The Keynote addressed the history and background of ONC, provided an overview of the Medicare and Medicaid Meaningful Use EHR Incentive program, and laid out ONC's planned process and timeline for achieving nationwide EHR interoperability (referred to as "Roadmap v. 1.0").

Highlights:

- 2014 goals for provider hospital participation in Meaningful Use Stage 1 were exceeded;
- When providers use certified EHR technology (CEHRT), approximately 60% feel it improves patient care;
- Interoperability is defined as the "exchange and use of information." It is "clearly" a major priority, and is about people and not machines;
- The next level for EHRs is for patients to not only see what their provider said in their record, but to be able to add information to that record;
- Interoperability "Roadmap v. 1.0" will take place from October 2014 through March 2015.

PANEL - STATE OF HIT ADOPTION 2014 & OPTIMAL USE OF HIT

- *Ashish Jha, MD, MPH – Professor of Health Policy and Management, Harvard School of Public Health*
- *Julia Adler-Milstein, PhD – Assistant Professor of Information, School of Information and Assistant Professor of Health Management and Policy, School of Public Health at the University of Michigan*
- *John D. Halamaka, MD, MS – Chief Information Officer, Beth Israel Deaconess Medical Center; Chair, U.S. Healthcare Information Technology Standards Panel*

Each of the three members of the panel gave a presentation on health information technology (HIT) and their experiences with its use and adoption in the field. The panel highlighted challenges related to Meaningful Use Stage 2, health information exchange (HIE), and the current state of HIT adoption by providers.

Highlights:

- Physician readiness to meet Stage 2 requirements is poor, though physician and hospital adoption of an EHR has significantly increased since 2008 (Jha);
- Practice size contributes to EHR adoption rates (community health center physicians have the lowest EHR adoption percentage, while those in HMOs have the highest); it is essential to get small group physicians on board with EHR adoption (Jha);
- A significant challenge for Stage 2 is how to make patient data available to patients in a way that engages them (Jha);
- EHR products have not been built well enough to support specialist workflow; however, the concern over the digital divide concerning safety net providers is not an issue (Jha);
- At the end of 2013, only 6% of eligible hospitals (EHs) met all Stage 2 requirements – however, there are a few measures that almost all (~90%) EHs can and are doing, such as taking vital signs and smoking status and using electronic medication administration records (eMAR) to track medication orders (Jha) as well as using automated drug-drug interaction and drug-allergy interaction alerts (Adler-Milstein);
- Hospitals are not sharing data as much as they could or should (~50% of hospitals share with ambulatory care providers, while only 25 – 33% share with other hospitals) – however, ~80% of EHs are using EHRs to create performance dashboards for themselves, though few are using EHRs to identify care gaps (Adler-Milstein);

- 14% of ambulatory physicians are sharing data with other physicians or affiliated hospitals, while only 5% share with unaffiliated hospitals (Adler-Milstein);
- Three ways for EHRs to improve performance: 1) health information exchange; 2) clinical decision support; 3) performance measurement and monitoring (Adler-Milstein);
- HIE is the domain that lags behind, yet is foundational to effective clinical decision support and comprehensive data for measurement (Adler-Milstein);
- Challenges in implementing meaningful use in small practices is based on culture not lack of technology, so education and usability are key (Halamaka).

JASON REPORT RECOMMENDATIONS

The presentation on the JASON Report included a brief history on EHR interoperability, highlighted key problems with the US HIT infrastructure that impeded interoperability, and provided an overview of the Report's recommendations for building the necessary infrastructure.

Highlights:

- Given the current trajectory, interoperability will be achieved in approximately 40 years;
- Stage 1 and 2 criteria fall short of achieving "meaningful use" in any practical sense –Stage 3 should be the time to take on building a truly interoperable data structure;
- JASON Report originally stated that patient's should "own" their data, but was changed to reflect the principle that patients should "participate" in the management of their own data;
- The Report recommends creation of a patient privacy bundle to allow patients to elect which specific elements can be shared;
- Within twelve months, ONC should define an architecture for interoperability;
- Stage 3 should require vendors to publish their Application Programming Interfaces (APIs), models explaining how software elements should interact;
- Effective fraud-seeking algorithms based on EHR data are largely non-existent – ONC should search for fraud signatures using technology for large-scale data analytics;
- The goal of interoperability is achievable in the US with a common data architecture.

PANEL - REACTIONS TO JASON REPORT: WHERE THE NATION GOES FROM HERE

- *Karen DeSalvo, MD, MPH, MSc*
- *David McCallie, MD – Co-Founder, CommonWell Health Alliance; Senior Vice President, Medical Informatics and Director, Cerner Medical Informatics Institute; Co-Chair, JASON Task Force, ONC*
- *Sallie Keller, PhD – Professor and Director, Social Decision and Analytics Laboratory, Virginia Bioinformatics Institute*
- *Christine Cassel, MD – President and CEO, National Quality Forum; Member, President's Council of Advisors on Science and Technology*

This panel addressed ONC's approach to handling the JASON Report, highlighted key findings in the President's Council of Advisors on Science and Technology (PCAST)'s recent Report on Systems Technology (which included the JASON Report), addressed industry response to the JASON Report, and discussed alternate methods of achieving HIT adoption in the US.

Highlights:

- ONC will ensure awareness of JASON Report, explore areas that the Report did not address, and get to work on "Roadmap v. 1.0" with both privacy and security in mind (DeSalvo);
- The primary goal in healthcare is to reduce spending (and especially to reduce waste) while simultaneously improving safety and quality; systems engineering is already well-developed to achieve these goals in different sectors, and the PCAST Report[3] addresses why these concepts aren't spreading (Cassel);
- In healthcare, it is hard to turn data into information – data must be aggregatible, comprehensible, and ready for data analytics; it is critical to make better use of federal data sources and the analytical capabilities of federal agencies to do so (Cassel);
- JASON Report was met with backlash from EHR vendor industry, which felt that the Report underestimated its progress and the sophistication of existing technologies (McCallie);
- Certification process is too easy (nearly everyone passes) and the current timetables for meaningful use are too aggressive – using Fast Health Interoperable Resource (FHIR)[4] will take at least three years for providers to adopt – it cannot be done for Stage 3 if Stage 3 attestation is 2016 (McCallie);
- Key problem for interoperability is the lack of a health care "system" in the US (DeSalvo

[3] Complete report available here: http://www.whitehouse.gov/sites/default/files/microsites/ostp/PCAST/pcast_systems_engineering_in_healthcare_-_may_2014.pdf

[4] FHIR is a standards framework created by HL7 (Health Level Seven International, a standards-developing organization) for exchanging, integrating, sharing, and retrieving electronic health information.