

The Electronic Health Record

Question: Is the electronic health record in the United States being utilized appropriately?

Domains: Health Resource Allocation , Performance Measures and Improvement

Method of Research/Model: Literature review

Overview:

If implemented properly, the electronic health record (EHR) could be a wealth of information to the provider, patient, public health entities, and even reimbursement groups. The Nationwide Health Information Network (NwHIN) sets standards and policies to assist the full implementation and usage of the EHR; however, these efforts lack coordination resulting in delays and inefficiencies.

Findings:

The nation will benefit from a wide range of ideas by allowing free market development. Research and development to further the meaningful use of EHR data is conducted at all levels within the health care informatics network. However, while the development of applications and uses is widespread and expansive, the research is not comprehensive.

The Nationwide Health Information Network (NwHIN) is a collection of standards, protocols, legal agreements, specifications, and services developed to enable the exchange of information through health information exchanges. Originally established in 2004 by the Office of the National Coordinator for Health Information Technology (ONC) as the National Health Information Network, in response to President George W. Bush's call for the widespread use of electronic health records, there were four goals: 1) increase the use of EHRs and other automated information tools in clinical practice, 2) enable interoperability among healthcare stakeholders, 3) use information tools to help personalize care delivery, and 4) advance the surveillance and reporting for population health improvement. These four goals endeavor to harness the power of shared data to improve healthcare of all in America. The Health Information Technology for Economic and Clinical Health (HITECH) Act of 2009 expanded the vision for an effective network by promoting the use of EHRs and by December of 2009, the NwHIN was a network of networks connecting diverse entities including state and regional health information exchange organizations (RHIO), federal agencies, and integrated delivery systems.

The publication of the report to the President, "Realizing the Full Potential of Health Information Technology to Improve Healthcare for Americans: The Path Forward," submitted by the President's Council of Advisors on Science and Technology (PCAST) in December 2010, identified shortcomings and a focus for the future. The PCAST report acknowledged that health IT "has the potential to transform healthcare" and health IT could integrate into all aspects of clinical practice, give clinicians real-time access to patient data, help patients become more

involved in their own health care, enable research , improve clinical trials, and streamline processes. The PCAST identified six major conclusions, including: the need for a universal language to ensure the ability to exchange information across institutions, the need for robust health information exchanges, and that the ONC should focus meaningful use guidelines on the comprehensive ability to exchange health care information. At this time, the PCAST recommends a change to a top-down approach to the design of health information exchanges, altering focus from RHIOs to state-led and designed exchanges

Lessons Learned:

This research provides an overview of the NWHIN and a glimpse into the future world of a fully networked national health care system in which health information is freely available to direct providers of health care, researchers, and public health entities. Health information technology services will greatly impact national health care with the ability to provide effective, efficient, and safe health care. It is imperative that the American health care system coordinate efforts to ensure that these information technology services are developed in a logical, synchronized fashion.

References

- Abdelhak, M., Grostick, S., & Hanken, M. (2012). *Health Information: Management of a Strategic Resource*. St. Louis: Elsevier.
- About Health Level Seven*. (2014). Retrieved July 29, 2014, from Health Level Seven International: <http://www.hl7.org/about/index.cfm?ref=nav>
- Baru, C., Botts, N., Horan, T., Patrick, K., & Feldman, S. S. (2012). A seeded cloud approach to health cyberinfrastructure: Preliminary architecture design and case applications. *45th Hawaii International Conference on System Sciences*. Retrieved June 30, 2104, from www.researchgate.net/publication/232637469_a_Seeded_Cloud_Approach_to_Health_Cyberinfrastructure_Preliminary_Architecture_Design_and_Case_Applications
- Brady, K., Sriram, R. D., Lide, B., & Roberts, K. (2012, November). Testing the nation's healthcare information infrastructure: NIST perspective. *Computer*, 45(11), 50-57. Retrieved from IEEE Computer Society.
- Buntin, M. B., Burke, M. F., Hoaglin, M. C., & Blumenthal, D. (2011). The benefits of health information technology: A review of the recent literature shows predominately positive results. *Health Affairs*, 30(3), 464-471.
- Colpas, P. (2013). Integration, analytics key to next-generation EMRs. *Health Management Technology*, 6-11.
- Federal Register. (2009, October 30). *HITECH Act enforcement interim final rule*. Retrieved July 29, 2014, from U.S. Department of Health and Human Resources: <http://www.hhs.gov/ocr/privacy/hipaa/administrative/enforcementrule/enfifr.pdf>
- Feldman, S. S., & Horan, T. A. (2011). Collaboration in electronic medical evidence development: A case study of the Social Security Administration's MEGAHIT system. *International Journal of Medical Informatics*, 80, 127-140.
- FHIR*. (2014). Retrieved July 29, 2014, from Health Level Seven: <http://www.hl7.org/Implement/standards/fhir/index.html>
- Gaynor, M., Lenert, L., Wilson, K. D., & Bradner, S. (2013). Why common carrier and network neutrality principles apply to the Nationwide Health Information Network (NwHIN). *The Journal of the American Medical Informatics Association*, 1-6.
- Get the facts: The Nationwide Health Information Network, Direct project, and CONNECT software*. (2014). Retrieved from HealthIT.gov: www.healthIT.gov

- Holdren, J. P., Lander, E., & Varmus, H. (2010). *Realizing the full potential of health information technology to improve healthcare for Americans: The path forward*. Washington, D.C.
- Interoperability Pilots*. (2014, July 1). Retrieved from HealthIT.gov:
<http://www.healthit.gov/policy-researchers-implementers/nwhin-history-background>
- Kuperman, G. J., Blair, J. S., Franck, R. A., Devaraj, S., & Low, A. F. (2010). Developing data content specifications for the Nationwide Health Information Network trial implementations. *Journal of the American Medical Informatics Association*, 17(6), 6-12.
- Lenart, L., Sundwall, D., & Lenart, M. E. (2012). Shifts in the architecture of the Nationwide Health Information Network. *Journal of the American Medical Informatics Association*.
- Mandl, K. D., Mandel, J. C., Murphy, S. N., Bernstam, E. V., Ramoni, R. L., Kreda, D. A., . . . Kohone, I. S. (2012). The SMART Platform: Early experience enabling substitutable applications for electronic health records. *The Journal of the American Medical Informatics Association*, 19, 597-603.
- Meaningful use definition and objectives*. (2014). Retrieved from HealthIT.gov:
www.healthit.gov/provider-professionals/meaningful-use-definition-objectives
- Rea, S., Pathak, J., Savona, G., Oniki, T. A., Westberg, L., Beebe, C. E., . . . Chute, C. G. (2012). Building a robust, scalable and standards-driven infrastructure for secondary use of EHR data: the SHARPn project. *Journal of Biomedical Informatics*, 45, 763-771.

