"Response to ONC Question Regarding Privacy and Security and Emerging Technologies for Personal Health Records: What privacy and security risks, concerns, and benefits arise from the current state and emerging business models of PHRs and related emerging technologies built around the collection and use of consumer health information, including mobile technologies and social networking?" by Michael Solomon, PhD, MBA, Practice Lead, eCare Management, Point-of-Care Partners.

Response to ONC Question Regarding Privacy and Security and Emerging Technologies for Personal Health Records: What privacy and security risks, concerns, and benefits arise from the current state and emerging business models of PHRs and related emerging technologies built around the collection and use of consumer health information, including mobile technologies and social networking?

Question #1. Privacy and Security and Emerging Technologies
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The Opportunity and Challenges

Personal health record systems with applications to help people self-manage their health are gaining traction. These "personal health management systems" are perceived as beneficial by users and evidence suggests they contribute to more informed and activated patients(1). As the functionality of this next generation of PHRs matures and their value in terms of improving patients' self-management capabilities – a key indicator of health outcomes – becomes more evident, adoption is poised to accelerate significantly. However, broad adoption and sustained use will require personal health management apps to be accessible from anywhere at anytime, quickly driving migration of these systems to mobile technology platforms. Minority populations and people across the spectrum of education levels are more inclined to use mobile devices to access the Internet compared to computers, and adults of all ages and backgrounds are increasingly accessing health information from their smartphones(2).

The health care industry's response to securing PHRs in this broader computing environment will be a major factor affecting the rate of adoption of this promising technology. Security mechanisms that have more than a minimal impact on consumers in terms of time and cost will offset the perceived benefits and slow adoption. Innovative approaches are needed that accommodate a person who is "on the go" and using multiple devices throughout the day. The individual's self-management network of support i.e., his or her family members and care providers must have also have ease of access, based on rights granted by the owner of the PHR.

Recommendations

Automated and portable user authentication is needed to replace the cumbersome, labor-intensive authentication procedures currently in place at most health care organizations. Investments should be encouraged to develop independent authentication programs that are based on completely online verification models and managed by certificate authorities. Fast and reliable

authentication can be achieved using commercial databases and health care organizations' computerized patient records to support knowledge-based questions based on a person's history.

Pursue a holistic approach to developing a universal online verification model that supports a person's access to their personal health management system from a variety of computing devices, including laptops, smartphones, and the new generation of tablets. In addition to meeting the applicable HIPAA security mechanisms, the online verification model must consider the additional security risks of wireless healthcare, including information leakage, hostile disruption and deception, and variations in network reliability(3).

[1] Kaiser Permanente, 2010. Connected for Health (Louise L. Lang, ed.). San Francisco, Jossey-Bass.
[2] California HealthCare Foundation (2010b). *How smartphones are changing health care for consumers and providers.* Oakland, CA: Sarasohn-Kahn, J. Retrieved from http://www.chcf.org/~/media/Files/PDF/H/HowSmartphonesChangingHealthCare.pdf
[3] The IEEE-USA Medical Technology Policy Committee is currently exploring issues and engaged in activities targeting security and privacy of wireless healthcare.