Apr 12th, 10:50 AM

Personal Health Records Interoperability

W. Kent Willis
Marshall University, willis23@marshall.edu

Alberto Coustasse
Marshall University, coustassehen@marshall.edu

PERSONAL HEALTH RECORD INTEROPERABILITY

Willis & Coustasse

BACKGROUND OF THE STUDY

Personal Health Records (PHRs) are applications that have enabled:

- Patients to access personal health information remotely.
- Secured domain.
- Permitted them to engage in their own health managemen

Background continued

The PHR has four different forms:

1) Self-contained Electronic Health Record maintained and controlled by the patient.
2) Self-contained EHR maintained by a third party such as a web service provider.
3) Component of an integrated care EHR maintained by a health provider and controlled partially by the patient.
4) Component of an integrated care EHR but maintained and controlled by the patient.

Background continued

The PHRs has two main models:

- The Standalone – has information filled by a patient and data exchange between external sources.
- The Tethered - PHR that’s linked to a specific health care organization's EHR system or to a health plan's information system.

Meaningful Use

- The U.S. government introduced the Meaningful Use program as part of the 2009 Health Information Technology for Economic and Clinical Health (HITECH) Act, to encourage health care providers to show "meaningful use" of a certified Electronic Health Record (EHR)[8]. In doing so, eligible providers who do so receive incentive payments.

  What is Meaningful Use? The overall goal of the Meaningful Use program is to promote the widespread adoption of electronic health records systems, ultimately creating an infrastructure that improves the quality, safety and efficiency of patient care in the United States

Meaningful Use

Meaningful use created a specific characteristic of patient portal functions which included:

- Summary of outpatient visits.
- Exchange information with a provider in a safe domain.
- Patient's ability to download and transfer health data.
- Provide educational material for patient.
- Alert system for preventative services and order medication.

Meaningful Use

Meaningful Use has evolved in three stages in a five-year timeframe.

- Stage #1
  - Automate the health information data collection.
  - Over 50% of patients were able to access health information within 4 days
  - Over 50% of discharged patients found health information within 36 hours of discharge

Meaningful Use

- Stage#2

Clinical procedure advancements which includes:

- Health Information Exchange.
- Expanded e-prescription requirements.
- Increased exchange information between providers and patients.

10.4% of the hospital had provided online access for the patient to view and download and transmit information in 2013.

Hospital adoption toward viewing of health information improved by 39.3%

- Stage#3

EHRs incentive program to promote interoperability.

Interoperability

The interoperability has consisted of three-level known as:

- Foundational - data exchange, health IT solutions do not have the ability to interpret the data they receive
- Structural – data can be interpreted, structure is created that ensures clinical/operational data meaning remains constant
- Semantic – health IT systems will be able to exchange, interpret and use data

Study Objective

- To determine if the implementations of PHRs had assisted in achieving interoperability as well as the benefits.
- Challenges of adoption focusing on implementation of MU

Results
Implementation of PHR Interoperability

- Adoption of national standards is necessary
- Otherwise an application wishing to communicate with a different application must develop that many different interfaces
- To drive interoperability, the adoption of standards have been driven by regulation
- Center for Information Technology Leadership (CITL) estimates PHRs could result in annual net value of $19 billion!!!!!!
  - Cost savings to healthcare providers and payers
  - Over 10-year implementation period and 80% US adoption rate

Results
HIEs and Patient Autonomy in PHRs

- Amongst one survey respondents:
  - 83% support physician use of HIE
  - 76% expressed interest in using PHRs
  - Supported by Internet comfort level and their perceptions regarding potential benefits of HIE

- Who is more likely to use and adopt PHR systems:
  - Individuals with higher levels of ability to manage their own health (self-determination)
  - Such self-determination fueled by:
    - Autonomy support from individuals physicians
    - Individuals tendency to be autonomous

Results

- **PATIENTS ARE SAYING…**
- **56%** Know more about their own health since PHR use
- **40%** They now know questions to ask that they did not know before
- **38%** Felt more connected to physician
- **32%** Taken measures to improve their health (i.e. watch their diets)

Results
Benefits of PHR Adoption in US

- According to Dimick, (2008), projected annual savings for interoperable PHRs:
  - **$21 billion!!**
- **Interoperability/HIE**
  - Easier access to PHRs
  - May lead to lifelong record of health information maintained by patient
- Condition Tracking
  - For patient- get an idea of how their health is doing
  - For physician- get alerts on critical patients

INCREASED QUALITY → DECREASED COSTS!!

Results
PHR Adoption Rate in the US

- Approximately 8 million using 2 basic PHR functionalities in 2008:
  - Storing data on Internet
  - Communicating electronically with clinical provider
- Approximately 31 million PHR users in 2013
- However, studies still report low PHR usage among providers and monthly use among patients below 10%
  - ***WHY?***
    - Poor technical skills among elderly and low physical/cognitive abilities
    - No perceived benefits
    - Lack of self-determination to be autonomous

Results
Meaningful Use and PHRs

- MU patient engagement requirements segue nicely into PHR adoption
- Approximately 62,226 EPs attested to MU under Medicare program in 2012
- MU Stage 2 required:
  - 5% of patients to use patient engagement tools
  - 5% of practice's patients sign in/use their PHR at least once during measured year
- MU Stage 3 required:
  - 10% of patients to use patient engagement tools
  - Interoperability becomes achievable through:
    - Advanced resources to implement the technology
    - Federal incentives

Results
PHR Challenges

- Privacy and Security
  - No assurance of security in a privacy statement
  - CHCF (2010): 75% of adults with no PHR concerned about privacy of their health information
  - IOM (2007): 1% comfortable having health information freely available to be used by researchers without consent
- "Digital divide"
  - Households with income above $75,000: 87% had internet
  - Households with income below $30,000: 47% had no internet
  - US Census Bureau: median household income was $59,039
- Additionally:
  - Lack of trust in provider
  - Low health literacy
  - Fear of technology

Discussion

- Literature indicates no evidence of success rate of PHR interoperability adoption
- The majority of PHRs today have been integrated through patient portals
- Individuals have been struggling to find the value in these patient portals
- No Federal incentives at this stage to move forward in adoption, instead organizations have simply received penalties.
- 15% was the PHR adoption rate nationwide and this value has been minimal.