The Personal Electronic Medical Record
Are you ready for prime time?
WHAT IS A PERSONAL ELECTRONIC MEDICAL RECORD?

According to the Healthcare Information and Management Systems Society (HIMSS),

“a universally accessible, layperson comprehendible, lifelong tool for managing relevant health information, promoting health maintenance and assisting with chronic disease management via an interactive, common data set of electronic health information and e-health tools.”
Attributes of PHR:

- Each person controls his or her own PHR
- PHR contain information from one’s entire lifetime and all health care providers
- PHRs are accessible from any place at any time
- PHRs are private and secure
- PHRs are transparent.
- PHRs permit easy exchange of information

(Ball, Costin, & Lehmann, 2008)
WHAT ARE THE MAJOR COMPONENTS OF A PHR?

- Similar to a medical record.
MY HEALTHEVET PERSONAL HEALTH RECORD FEATURES

- General information
- Research health
- My healthevet learning center
- Personal information
- Get care
- Health information card
- Personal health history
Family health history
Military health history
Personal health summary
Health elogs
Allergies
Immunizations
Tests
MY HEALTHEVET PERSONAL HEALTH RECORD FEATURES

- Medical events
- Food and activity journals
- Health calendar
- Medications, over-the-counter drugs, herbals and supplements
- Prescription refills
- VA prescription history
- My complete medications
- Wellness reminder
- Secure messaging
Patient-Centric Personal Health Record

- Patients
- Health Link
- Employers
- Doctors
- Hospitals
- Insurers
- Government Standards
- Microsoft HealthVault
- Google Health

Health Link is technology agnostic and interoperable
Types of Personal electronic medical records:
+ Market: vendor based
+ Provider-based
+ Payor-based
+ HIE based;
+ Portable digital file
+ Hybrid
+ (Lang, 2009)
## Types of Personal Electronic Medical Records

<table>
<thead>
<tr>
<th>Type</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tethered</td>
<td>Clinical and/or financial information populated automatically in the record. Real-time lab results</td>
<td>Switching providers or health plans ends access or results in incomplete information</td>
</tr>
<tr>
<td>Standalone</td>
<td>Can stay with an individual over their lifetime</td>
<td>Individuals must keep their information current and accurate</td>
</tr>
<tr>
<td>Interconnected (Oftedahl, Marshall, 2010)</td>
<td>Individual can manage, share, and control information throughout their lifetime</td>
<td>Model is most complex and require data standards that do not yet exist. Data security and challenges are significant.</td>
</tr>
</tbody>
</table>
VENDOR BASED

- Google Health
- Microsoft Health Vault
  - A comprehensive list of web applications is available at the HealthVault website. Some of the notable ones are listed below.
  - ActivePHR. This is released by ActiveHealth
  - HealthUnity PHR Gateway. This is released by HealthUnity
  - PassportMD. This is released by PassportMD

- Dossia:
- Revolution Health
WEB BASED PHRS

- Web MD: MyHealth Record
- Data Critical: Your Health Chart
- Personal mD.com: My Health Manager
- Telemedical.com: Personal Health Record system
- Agency for Health care research and quality: Personal Health History
- WellMed: Personal Health manager
- CBSHealthwatch: About My Health
- (Sittig, 2002)
Provider-based:

- The patient has limited control and is provided a summary of data from previous encounters
  - Labs
  - Prescriptions
  - Results
  - And other encounter/claims-based data
PAYOR-BASED

- A claims-driven PHR model offered by insurers.
An advanced model that has the potential to integrate more contributing data sources.
Smart cards, USB drives, etc. are really more methods than models, but it is worth mentioning given that it has been described as the original PHR.
The physician, patient and other sources are equal contributors and stakeholders.
BENEFITS

- Reducing medical errors,
- Enhancing the quality of care
- Improving the validity of information made available to care providers
- As medical devices become more integrated, chronic disease management may be improved

(Sensmeier, 2010, p. 47)
DISADVANTAGES

- If a majority of individual’s providers do not have an EMR, the value is greatly diminished.
CHALLENGES

- The type of information accessible on a PHR will continue to be a source of disagreement for physicians.
- Record synchronization between PHRs and HIEs
- HIE, EMR, PHR share their own version of the truth.
CHALLENGES

- Obstacles to PHR implementation include the lack of e-service business models
- Lack of standardized connectivity between institutions and host applications
- Limited patient utilization
- Hospital’s efforts to safeguard the information
STAKEHOLDERS

- Consumers
- Primary care physicians/providers
- Office staff
- Hospitals
- Third-party payors
- Government regulators
The data reported in PHRs are vulnerable because HIPAA only protects covered entities, not non-institutional organizations, such as Google, Microsoft and software vendors. (Fetter, 2009)

Security of electronic data worries providers, patients, and regulators (Angst, 2008)

DHHS has yet to define an overall privacy model and milestones (Fetter, 2009)

http://www.hhs.gov/ocr/civilrights/complaints/index.html
ETHICAL CONCERNS

- Privacy and confidentiality
- Equity
- Efficiency
- Integrity
- Accountability

(Wynia & Dunn, 2010)
There are multiple steps in the process of obtaining, recording and then using a patient’s healthcare data.
PHASES OF APPLICATION DEVELOPMENT

- Content
- personal
- Patient PHR
- Refill requests
- Pharmacy / PBM Medical supply
- Payor
- Claims review
- Patient view email
- Provider
It will require between $4 and 130 billion in initial capital and between $2 and $43 billion in annual support.

These expenses, in most cases, will be recouped by the projected $13 to $21 billion in annual potential benefit. (Kaelber & Pan, 2008).
# Model PHR-8 Benefit Functions

<table>
<thead>
<tr>
<th>PHR Benefit Function</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharing complete medication lists</td>
<td>I</td>
</tr>
<tr>
<td>Sharing complete test results</td>
<td>I</td>
</tr>
<tr>
<td>Congestive Heart Failure (CHF) Remote Monitoring</td>
<td>A</td>
</tr>
<tr>
<td>Smoking Cessation Management</td>
<td>A</td>
</tr>
<tr>
<td>Appointment Scheduling</td>
<td>A</td>
</tr>
<tr>
<td>Medications Renewals</td>
<td>A</td>
</tr>
<tr>
<td>Pre-encounter Questionnaires</td>
<td>A</td>
</tr>
<tr>
<td>E-visits</td>
<td>A</td>
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</tbody>
</table>
$450,000 per application
- Includes programmer costs to design, develop, build and test the application;
- Management and support costs
- Core knowledge management development costs (Kaelber & Pan, 2008)
<table>
<thead>
<tr>
<th>PHR architecture</th>
<th>Total costs for single installation ($, millions)</th>
<th>Total costs for 80% of US ($, billions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>I</td>
<td>A</td>
</tr>
<tr>
<td>Provider-tethered</td>
<td>2.8</td>
<td>1.2</td>
</tr>
<tr>
<td>Payer-tethered</td>
<td>2.7</td>
<td>2.1</td>
</tr>
<tr>
<td>Third-party</td>
<td>6,600</td>
<td>1,600</td>
</tr>
<tr>
<td>Interoperable</td>
<td>3.5</td>
<td>3.5</td>
</tr>
</tbody>
</table>
## National Model for Installations

<table>
<thead>
<tr>
<th>PHR architecture</th>
<th>Number of installations to cover 80% of the US population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provider-tethered</td>
<td>26,478 provider organizations</td>
</tr>
<tr>
<td>Payer-tethered</td>
<td>706 payers</td>
</tr>
<tr>
<td>Third-party</td>
<td>3 third parties (Microsoft, Google, Dossia)</td>
</tr>
<tr>
<td>Interoperable</td>
<td>428 regions</td>
</tr>
</tbody>
</table>
Project initiation stage; Project planning and design stage; Project execution and construction stage; Project monitoring and controlling systems; Project completion

http://en.wikipedia.org/wiki/Project_management
Analyzing the **business needs/requirements** in measurable goals

Reviewing of the current **operations**

identifying the activities needed to complete those deliverables and networking the activities in their logical sequence;

- estimating the resource requirements for the activities;

- estimating time and cost for activities

EXECUTION

- Using the selected PHR with the PCP and various other settings.
- Are the activities that are involved with the PHR working in congruence with the goals and intent of managing their health care needs appropriately?
MONITORING AND CONTROLLING

- During this phase the individual should look at the PHR and determine if it is meeting their needs.
- Is this PHR doing what they had in mind?
- Are there any issues about the PHR that was not anticipated?
- What are the factors that are impeding the success?
- Is the PHR working seamlessly with their PCP?
The last phase is to evaluate whether the PHR is meeting the needs of the consumer?

The project is technically not over because the consumer must make sure that their PHR is constantly updated.
CREATING YOUR OWN PHR

- Step 1: Contact your PCP office. Ask if the PCP has a plan for helping patients to create PHRs.
- Step 2: Ask for an "authorization for the release of information" form
- Step 3: Gather your information and place in a file folder
- Step 4: Decide if you are going to use a device to store the information or a internet based service.
CREATING YOUR OWN PHR

- Step 4: Decide if you are going to use a device to store the information or a internet based service.
- Step 5: Bring your PHR to all visits. Updating is very important with each visit.
- Step 6: Create and carry a card with vital information
- Step 7: Protect and maintain confidentiality of your private information.

(www.myphr.com/StartaPHR/quick_guide.aspx)
http://www.ahrq.gov/video/personalrecord/indivrecord.html
CHOOSING A PHR

- Study the policies and procedures
- You need to make sure you understand how your personal health information will be used and protected.
- Take an active role in monitoring your health and healthcare

(http://www.mypahr.com/resources/choose.asp)
(http://www.mypahr.com/PHR_Forms/adultform.pdf)
SUMMARY

- https://aclu.org/pizza/images/screen.swf
REFERENCES