

Early Evidence on Personal Health Records: A Platform for My HealtheVet Research

Susan Woods, MD, MPH
Portland VA Medical Center
susan.woods@va.gov

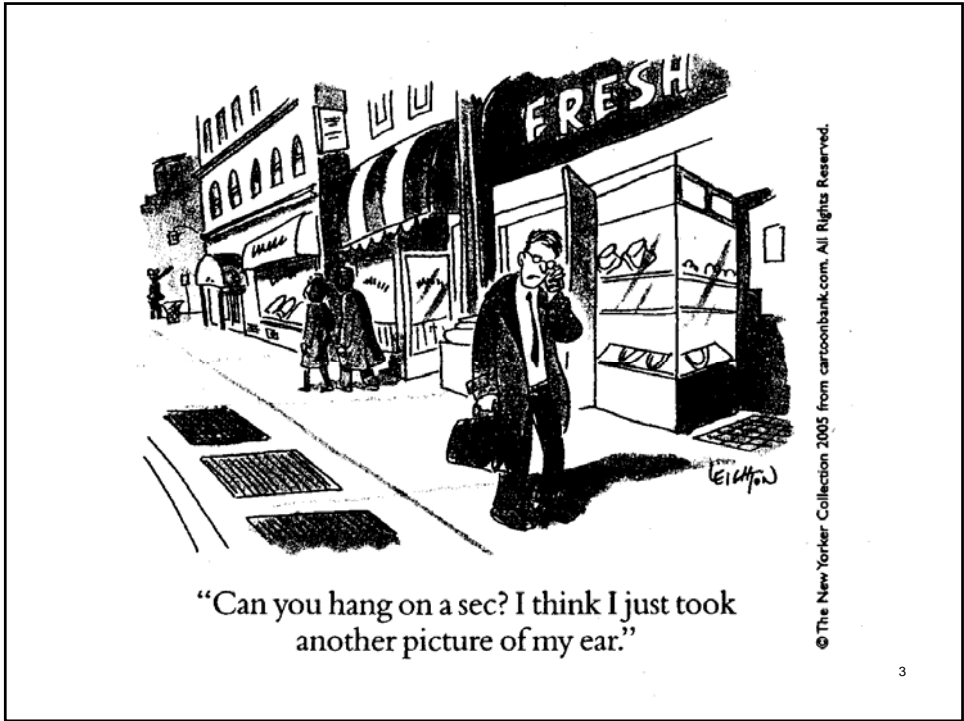
**VIReC Clinical Informatics Cyberseminar
May 19, 2009**



Overview

- Consumer Health Information Trends
- An update on My HealtheVet
- Growing evidence on personal health records (PHR)
- Explore PHR research domains / agenda





new History Bookmarks Yahoo! Tools Help

patientslikeme™ Patients helping patients live better every day.

Patients | Treatments | Symptoms | Research

Share Your Experience »
See how easy it is...

Find Patients Like You »
Try it out...

Learn From Others »
Discover the power of many...

Join Now (It's free!)

Already a member? [Log in](#)

ember photos for more details

Our Current Communities

Neurological Conditions

- MS (Multiple Sclerosis)
- Parkinson's Disease
- ALS (Amyotrophic Lateral Sclerosis) /

Mood Conditions

- Depression
- Anxiety
- Bipolar

Highlights

Lithium & ALS Study

See how ALS patients taking lithium are doing in real-time. [Learn more...](#)

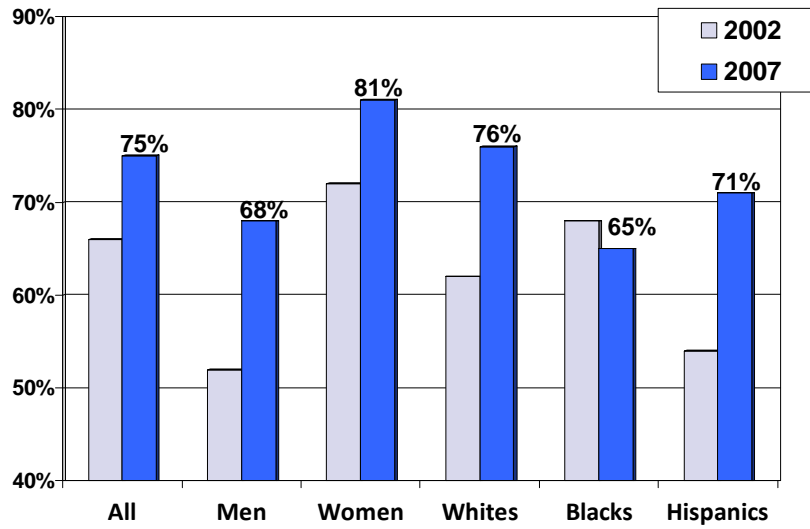


Adults Who Use the Internet



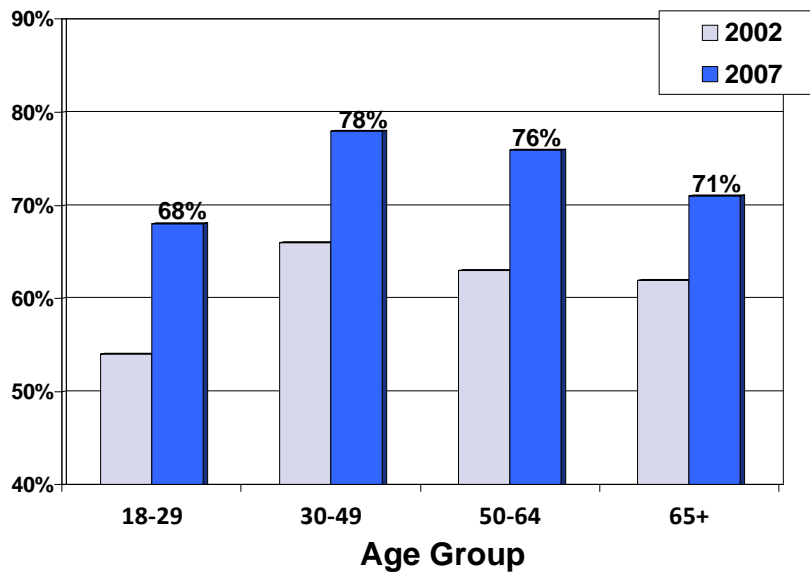
- 74% of adults in U.S.
- 87% ages 18-29; 72% ages 50-64
- 41% age 65 and older
- 64% living in rural areas
- 77% white, 64% black, 58% Hispanic
- 35% if less than High School education
- 57% if < \$30,000 per year

% Ever Looked for Health or Medical Information Online, 2002 and 2007



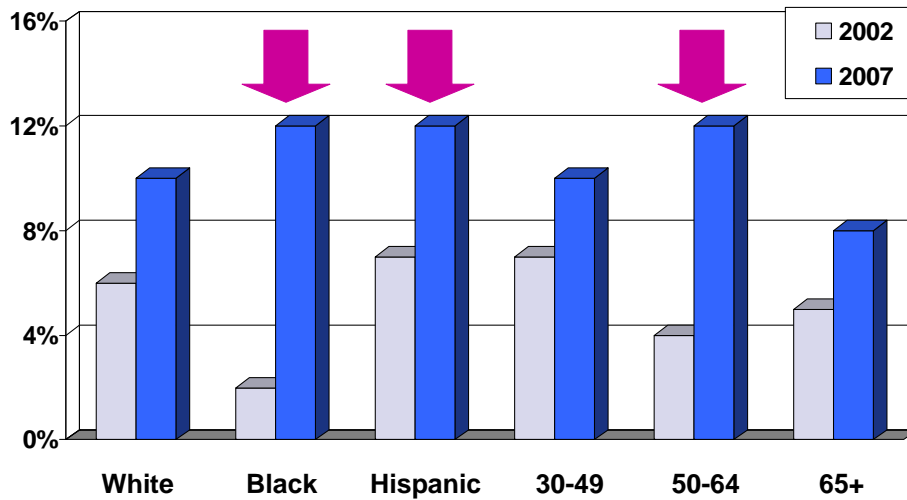
7

% Ever Looked for Health or Medical Information Online, 2002 and 2007

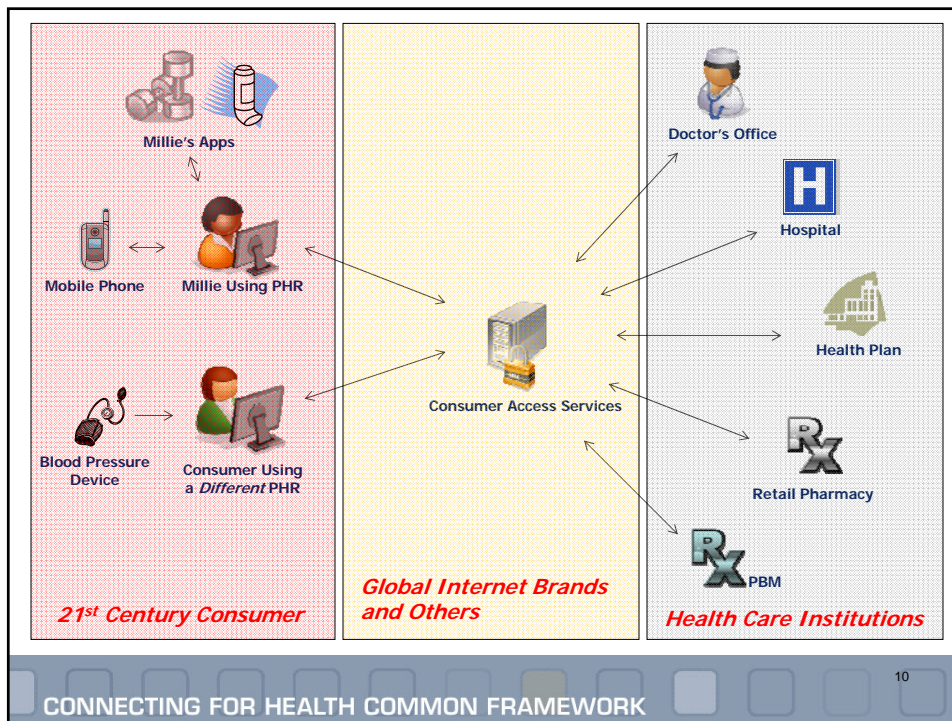


8

% Who Looked for Health or Medical Information YESTERDAY, 2002 and 2007



S. Fox, Pew Internet & American Life Project



Personal Health Record (PHR) Markle Foundation Definition



- ...is an Internet-based set of tools allowing people to access and coordinate their lifelong health information
- ...people use their PHR as a communications hub: to send email to doctors, transfer information to specialists, receive test results and access online self-help tools

11

Personal Health Records



- 1st Generation and Stand-Alone
 - Not connected to EHR
- Tethered or Networked
 - Push/Pull health information to EHR
 - Prescription info, Refills (VA)
 - Secure messaging with healthcare team

12

Perceived Benefit for Consumers



- Improve understanding of health issues
- Support timely preventive services
- Lower hassle factor – appointments, refills
- Strengthen communication with providers
- Home monitoring - improve chronic care
- Avoid duplicate tests – save money
- Reduce adverse drug interactions
- Verify accuracy of information in health records
- Manage insurance benefits

National Center for Health Statistics, 2006
Connecting Americans to Their Healthcare. Markle Foundation.¹³ 2004

The screenshot shows the My HealthVet website in a Microsoft Internet Explorer browser window. The browser title is "My HealthVet - Microsoft Internet Explorer". The website header includes the United States Department of Veterans Affairs logo and the "My HealthVet" logo. A navigation bar contains links for "VA Facility Locator", "About MHV", "Help", "FAQs", "Contact MHV", and a search box with a "GO" button. Below the navigation bar, there are tabs for "HOME", "PERSONAL INFORMATION", "PHARMACY", "RESEARCH HEALTH", "GET CARE", "TRACK HEALTH", and "MHV COMMUNITY".

The main content area is divided into several sections:

- In the Spotlight:** Features an article titled "Aphasia" dated "JUNE 2008". The article describes aphasia as a condition caused by injury to the speech center, leading to difficulties in talking, listening, reading, or writing. It mentions that recovery is based on severity and the area of the brain injured. Below the article is a "Read More >" link.
- Drug Side Effects and your Mouth:** A section with a small image of a mouth, discussing side effects like dry mouth or overgrowth of fungus.
- Cancer Survivorship:** A section with a small image of a family, discussing the importance of early detection and the impact of cancer on family members.
- Virtual Tour:** A section titled "Virtual Tour" with a description: "Get a peek at the many features you can find on My HealthVet. You can view it online or save it to your PC. Download (ZIP 4.8Mb) >> Watch the tour now >>".
- Member Logout:** A section titled "Member Logout" showing "Logged On As: Susan" and a "Logout" button.
- Quick Links:** A list of links including "VA National Suicide Prevention Hotline", "In-Person Authentication", "View the MHV Virtual Tour", "Rx Refill Guide", "Rx Refill", "Quality of Care", and "MOVE!".
- Navigation Links:** A vertical list of links on the right side: "Prescription Refill", "Emergency Contacts", "Providers & Physicians", "Vitals & Readings", "Military Health History", "Medical Library", and "VA Honors Veterans".

Authenticated Users Can:



- Refill Prescriptions
- View or Edit Medications
- Research Health Information
 - Medical and Veteran-Specific Conditions
- Self-Assessment Tools
- Self-monitor (BP, glucose, weight)
- Health Journals & e-Logs
- Wellness Calendar

15

Manage Medications

9 items found, displaying all items

Refill Status	Refill Submit Date	Fill Date	Prescription Number	Last Updated	Facility	Select to Refill
Refill in Process	7/17/2006	9/29/2006	2493794B	7/18/2006	CENTRAL CALIFORNIA HEALTH CARE SYSTEM - FRESNO DIVISION	
Refill in Process	7/17/2006	9/25/2006	2515248	7/18/2006	CENTRAL CALIFORNIA HEALTH CARE SYSTEM - FRESNO DIVISION	
Refill in Process	7/17/2006	9/22/2006	2068389F	7/18/2006	CENTRAL CALIFORNIA HEALTH CARE SYSTEM - FRESNO DIVISION	
Refill in Process	7/17/2006	9/15/2006	2515245A	7/18/2006	CENTRAL CALIFORNIA HEALTH CARE SYSTEM - FRESNO DIVISION	
Refill in Process	7/17/2006	9/15/2006	2515246A	7/18/2006	CENTRAL CALIFORNIA HEALTH CARE SYSTEM - FRESNO DIVISION	
Refill in Process		9/3/2006	2453114B	7/18/2006	CENTRAL CALIFORNIA HEALTH CARE SYSTEM - FRESNO DIVISION	
Refill in Process	7/17/2006	8/5/2006	2570573	7/18/2006	CENTRAL CALIFORNIA HEALTH CARE SYSTEM - FRESNO DIVISION	
Refill in Process		8/4/2006	2569949	7/18/2006	CENTRAL CALIFORNIA HEALTH CARE SYSTEM - FRESNO DIVISION	
Refill in Process	7/17/2006	7/26/2006	2528192	7/18/2006	CENTRAL CALIFORNIA HEALTH CARE SYSTEM - FRESNO DIVISION	

[HOME](#) | [PERSONAL INFORMATION](#) | [PHARMACY](#) | [RESEARCH](#)

[RX REFILL](#) | [MEDICATIONS + SUPPLEMENTS](#)

[Refill My Prescriptions](#) | [Prescription Refill History](#)

[Quality of Care](#) | [MOVE!](#) | [HealthierUS Veterans](#)

Track Health Data

United States DEPARTMENT OF VETERANS AFFAIRS
VA Home My Health

HOME PERSONAL INFORMATION PHARMA
VITALS & READINGS LABS & TESTS HEALTH HISTORY JOURNALS

Vitals & Readings

Labs & Tests

Health History

Family Health History

Military History

Allergies

Immunizations

Journals

Personal Health Summary

monitor your health measures. Each one shows a graph of your readings. Record your heart rate and pain levels, and much and take them to your doctor. Start tracking your health

PDFs and require Acrobat Reader. [Get Adobe Acrobat Reader](#)

Blood Sugar

Form #	Date	Time	Method	Blood Sugar Count
1	06/15/2006		Clinical Lab Test	190
2	06/17/2006	16:00	Clinical Lab Test	120
3	06/17/2006	08:00	Sterile Lancet	166
4	06/17/2006	09:00	Sterile Lancet	160
5	06/16/2006	16:00	Sterile Lancet	150
6	06/16/2006	06:00	Sterile Lancet	100
7	06/15/2006	18:00	Sterile Lancet	213
8	06/15/2006	08:00	Sterile Lancet	200
9	06/14/2006	20:00	Sterile Lancet	150
10	06/14/2006	22:00	Sterile Lancet	190

Blood Pressure

Form #	Date	Time	System	Diastolic	Edi	Update
1	06/15/2006	12:00	100	77	F	SC
2	06/15/2006	14:00	100	80	F	SC
3	06/15/2006	1:00	80	80	F	SC
4	06/15/2006	16:00	142	90	F	SC
5	06/15/2006	05:10	120	80	F	SC
6	06/15/2006	15:00	140	80	F	SC
7	06/15/2006	09:40	147	80	F	SC
8	06/15/2006	1:00	100	80	F	SC
9	06/15/2006	14:00	140	80	F	SC
10	06/15/2006	09:30	120	80	F	SC

BODY WEIGHT

121.00 lb	Tue 03/22/2006
120.00 lb	Mon 03/21/2006
120.00 lb	Mon 03/21/2006
118.00 lb	Sat 03/18/2006
01.00 kg	Tue 10/02/2007

Blood Sugar Graph

Blood Pressure Graph

Screening Tools

My HealthVet - Microsoft Internet Explorer

HEALTHY LIVING CENTERS DISEASES + CONDITION CENTERS

Depression Screening (PHQ-9) - Instructions

The following questions are a screening focusing on symptoms of depression. Please read each question carefully, then select the answer that indicates how much you have been bothered by that problem in the past 2 weeks. This entire screening is processed on this local computer. No information is collected, stored or sent over the Internet. To ensure complete privacy, exit your web browser after completing this screening.

If you have problems accessing this tool, there is also [text-only version](#).

Question 1 of 10

Little interest or pleasure in doing things?

Not at all
 Several days
 More than half the days
 Nearly every day

< Previous Next >

The PHQ-9 is a Pfizer product.
PRIME-MD® is a trademark of Pfizer Inc.
PHQ Copyright © 1999 Pfizer Inc. All rights reserved. Reproduced with permission.

Screening Tools

AUDIT-C Alcohol Use Screening (AUDIT-C)
PHQ-9 Depression Screening (PHQ-9)
PCL Post Traumatic Stress Disorder Screening (PCL)
ASSIST Substance Abuse Screening (ASSIST)

[Helpful Health Links](#)
[Healthier US Veterans](#)
[VA Multiple Sclerosis Center of Excellence](#)

TriCare Online
Are you a TriCare Online registrant? You can go directly to the TriCare Online site from [My HealthVet](#)

Screens are NOT intended to provide a complete assessment or diagnosis for any condition. They CAN help identify symptoms and assist you in determining if you should seek further evaluation by your physician or a mental health professional.

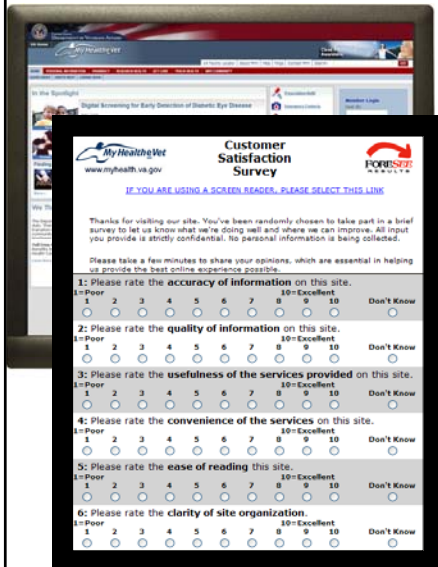
My HealthVet Statistics as of 4/30/09



- 779,799 registered users
- 118,945 Authenticated
 - Offers full functionality
 - Requires in-person transaction
- 28 million visits
- 9.9 million prescription refills since 8/05

19

My HealthVet Website Survey



October 2007 – *ongoing*

Loyalty factor: 4 pages

Sampling: 4% each add'l page

October 2007 – October 2008

362,379 surveys presented

61,186 respondents

- Recent questions smaller N

Response Comparison:

MyHealthVet 16.9%

ForeSee average 6.5%

20

Survey Respondents (Oct 2007 – Oct 2008)

Veteran	93%
Family	4%
Fed employee	<1%
Vet Service Org	<1%
General Public	<1%
Other	1%

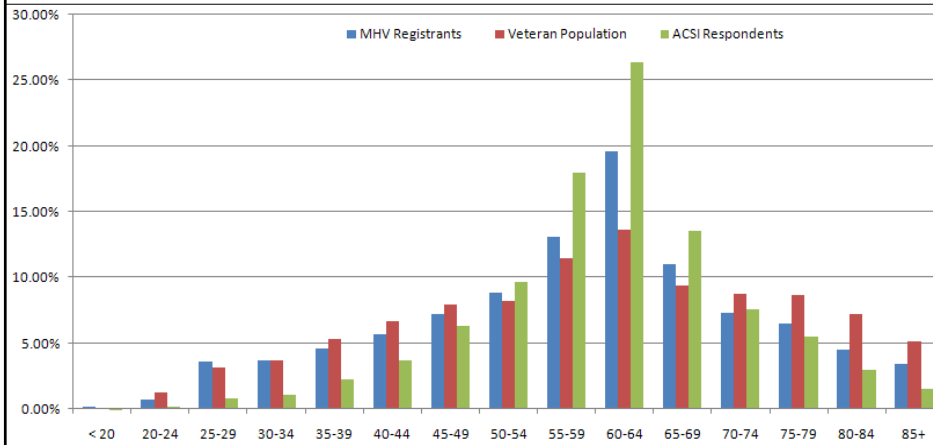
My HealthVet Registrants N=569,197

Veteran	86 %
Fed. Employee	4%
Vet. Advocate	2%
Provider	3%
General Public	<1%
Other	1%

21

Age: MHV Survey Responders vs. MHV Registrants vs. Veteran Population

October 2007 – October 2008



22

Location Accessing My HealthVet

Choose all that apply

Oct 2007 – Oct 2008
N = 20645

Home	96%
Workplace	11%
Others' home	3%
VA Site	3%
Community	2%
School	1%
Other	1%



23

Self-Reported Internet Skills

Advanced: frequent use & search **69 %**

Intermediate: use for a few things **28 %**

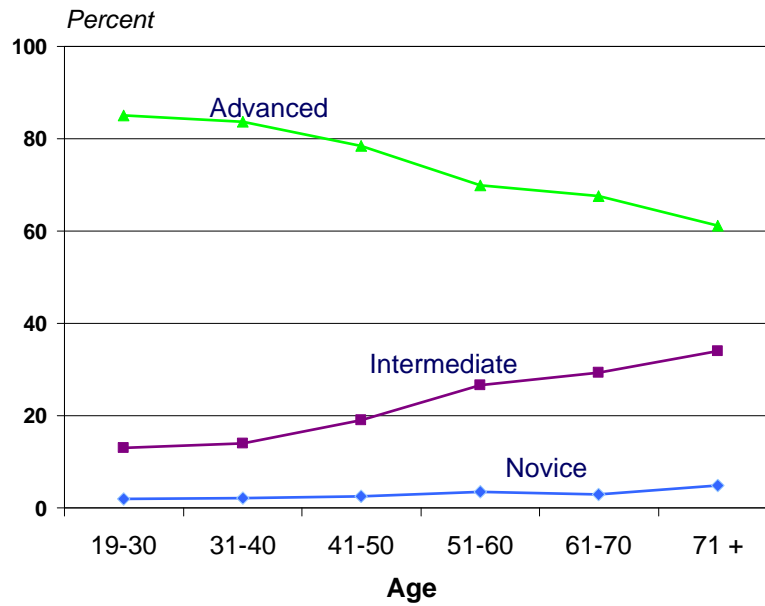
Novice: starting or not much **3 %**



Oct 2007 – Oct 2008
N=18594

24

Self-Reported Internet Skill Level, by Age



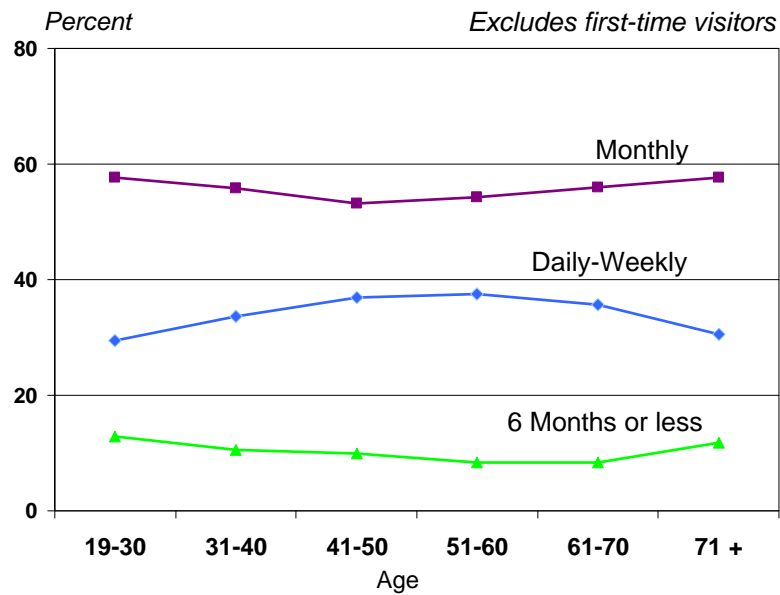
MyHealthVet Visit Frequency

First visit	12 %
More than once/day	2 %
Daily	4 %
Once a week	25 %
Once a month	49 %
Every 6 months	5 %
< every 6 months	3 %



Oct 2007 – Oct 2008
N=61186

MyHealthVet Visit Frequency, by Age Group



Self-Reported Overall Health

Oct 2007 – Oct 2008
N = 18594

Excellent	4 %
Very good	17 %
Good	39 %
Fair	30 %
Poor	10 %

Goal Using My HealthVet Today?

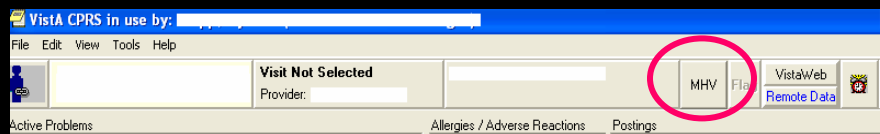
Choose all that apply

Oct 2007 – Oct 2008
N=61186

Request Rx refill	76 %
Rx history from record	24 %
Seek medication Information	18 %
Track personal information	14 %
Track health information	13 %
Research health condition	6 %
Information about VA benefits	6 %
Find VA care facility	2 %
Other	9 %

29

Released: My HealthVet Button in CPRS



- Synchronization of MHV account with VA Master Patient Index
- Button for authenticated MHV users
- Button links to MHV website



30

Released: MHV Wellness Reminders

VA Electronic
Health Record
(EHR)



My HealtheVet
Personal Health
Record (PHR)

VistA Clinical Reminders



MHV Wellness Reminders

- 12 basic reminders for preventive care and screening
- Reminders evaluate VistA data (health factors and lab tests) and trigger patient-friendly wellness reminders for display in My HealtheVet
- Link to health education resources

*Veteran must be
In Person Authenticated

31

My HealtheVet Wellness Reminders

1. Hypertension
2. Influenza Vaccine
3. Pneumococcal Vaccine
4. Colorectal Cancer Screening
5. Lipid Measurement
6. LDL Control
7. Body Mass Index (BMI)>25.0
8. Diabetes Foot Exam
9. Diabetes Hemoglobin A1C
10. Diabetes Retinal Exam
11. Mammography Screening
12. Cervical Cancer Screen

32

CARE GIVERS | TREATMENT FACILITIES | MY COVERAGE Help | Print Page

Wellness Reminders

We are updating your Wellness Reminders
 Updates to your data are still in progress. Please refresh this screen or check back later.

You are viewing health Wellness Reminder information that was entered by your VA Facility.

Reminder:	Body Mass Index >25
Due Date:	DUE NOW
Last Completed:	UNKNOWN
Location:	DAYT3

Wellness Reminders
 Personal Health Record of Arpeggio
 Information last updated in My Health eY

Reminder Information:
 The more excess weight a person carries, the higher the risk of health problems. Excess weight leads to heart disease, diabetes, high blood pressure, stroke, some forms of cancer, osteoarthritis, sleep apnea, lower quality of life, and shorter life expectancy. Overweight is measured by the Body Mass Index (BMI), which is a measure of weight for height. A BMI of 25 to 29.9 is considered "overweight." Above 30 is considered "obese."
 Your BMI is between 25 and 27. This means that you are likely carrying too much weight for your height. Please discuss with your primary care team any questions you have about resources available to you to help you keep your weight down.
 Computed Finding: BMI = 25.1 (03/07/2005)
 Please check these web sites for more information:
 Web Site: Managing Obesity for Veterans Everywhere (MOVE)
 URL: <http://www.move.med.va.gov>
 National Center for Health Promotion
 Web Site: Calculate your own BMI
 URL: <http://www.cdc.gov/ncehdnp/dnpa/bmi/calc-bmi.htm>

The following Wellness Reminders:
 Wellness Reminders. Please notify your doctor about these Well

- Influenza Vaccine
- Control of Your Cholesterol
- Pneumonia Vaccine
- Body Mass Index >25
- Hypertension (High Blood Pressure)

Wellness Reminder Summary
 The following is a list of your Wellness Reminders.

5 items found, displaying all items

Due Date	Wellness Reminder	Last Completed	Location
⚠ DUE NOW	Body Mass Index >25	UNKNOWN	DAYT3
⚠ DUE NOW	Control of Your Cholesterol	UNKNOWN	DAYT3
⚠ DUE NOW	Hypertension (High Blood Pressure)	UNKNOWN	DAYT3
⚠ DUE NOW	Influenza Vaccine	UNKNOWN	DAYT3
⚠ DUE NOW	Pneumonia Vaccine	UNKNOWN	DAYT3

5 items found, displaying all items

[Go to Completed Wellness Reminders](#)

Coming Soon



- Secure Messaging
 - Triage, team-based
- Veterans Online Applications
- Allergies
- My Recovery Plan

Secure Messaging



- Electronic bi-directional, asynchronous communication
- For non-urgent questions & issues
- Is not e-mail
- Users must be “staged” into program
- Current field testing in 8 sites



*Response time –
3 business days*

Secure Messaging Access Through MHV

The screenshot shows the My Health e Vet website interface. At the top, there is a header with the United States Department of Veterans Affairs logo and the text "My Health e Vet". Below the header is a navigation menu with the following items: HOME, PERSONAL INFORMATION, PHARMACY, RESEARCH HEALTH, GET CARE, TRACK HEALTH, and MHV COMMUNITY. The "GET CARE" item is circled in pink. Below the navigation menu is a "Get Care" section with the following text: "The Get Care section of My Health e Vet is designed as a place for you to organize your health care related information so it is handy when you need it. Also, find the nearest VA medical center using the VA Facility Locator. Get Care is a convenient location to keep track of your health care providers, your treatment locations and your health insurance information. My Health e Vet makes it easy to get organized with your health information. Get started today!". Below this text are four tiles: "Care Givers", "Treatment Facilities", "My Coverage", and "Health Calendar". To the right of the "Get Care" section is a "Member Logout" section with the text "Logged On As: Test" and a "Logout" button. Below the "Member Logout" section is a "Related Links" section with the following links: "Five things you should know BEFORE you go to the doctor" (369 KB), "Helpful Health Links", and "Healthier US Veterans".

Veteran Sends a Message (DRAFT Version)

My HealtheVet Close Secure Messaging
 You are logged in as: Gisela Amanda Z...

Secure Messaging Preferences | Help

New Message Send Save as Draft Cancel Message

From: Zztest, Gisela Amanda
To: Portland Primary Care
Subject:

Compose Message: Use a Predefined Message? Administrative Question Apply

Attention
 This messaging system should be only used for **non-urgent, non-critical communication!**
 Please direct any urgent or critical concerns to your provider's office via telephone or in-person.

My Folders [Diabetes](#) [Mental Health](#) [Pharmacy](#) [add new folder](#)

Inbox (1)
[Drafts](#) [0]
[Sent](#)
[Deleted](#)

Healthcare Team Access SM in CPRS

VistA CPRS in use by: Douglas, David M (v...Portland.med.va.gov)

SECURE MESSAGING (circled in red)

Active Problems

Active Medications	Clinical Reminders	Due Date	Intake/Output
No Active Medications Found	<ul style="list-style-type: none"> Genetics Driving Evaluation DUE NOW Genetic Firearm Evaluation DUE NOW *Tobacco Use Screen Mar 17,06 *Vitals DUE NOW PAIN SCORE DUE NOW RAP Smear Screening DUE NOW Evaluation of + Depression Screen DUE NOW *Allergy Assessment DUE NOW 		Patient Has: No Admissions On File

Recent Lab Results

Recent Lab Results	Vitals	Appointments/Visits/Admissions
No Orders Found	<ul style="list-style-type: none"> T 98.5 F May 23, 2008 09:41 (36.9 C) P 89 May 01, 2008 07:00 LYING R 22 May 01, 2008 07:00 LYING BP 120/80 May 23, 2008 09:41 R ARM, LYING, ADULT CUFF, AT REST HT 69 in May 01, 2008 07:00 (175.3 cm) WT 183 lb May 01, 2008 07:00 (85.7 kg) PN 7 May 01, 2008 07:00 ROOM AIR RDX 38 May 23, 2008 09:41 CG 11.811 in Dec 13, 2007 10:35 (30.0 cm) 	No data found

Healthcare Member Completes or Triages Message

MyHealthVet Secure Messaging

You are logged in as: [User Name]

New Message

Inbox (4)
 Escalated (0)
 Drafts (0)
 Sent
 Completed
 Deleted

My Folders add
 add new folder

Message Details:
 Sent: 05/27/2008 09:27 AM
 From: DEMOPATIENT, MHVSM
 To: Dayton 3 (Dayton 3)
 Message ID: 646
 Subject: Lab or Test Results Question

Message Content:
 Please note that we need 3 business days to respond to secure messaging
 I would like to know the results of a Lab Test, X-ray, or Procedure.
 Please type in the name of the Lab Test, X-ray, or Procedure and the date it was performed.

Previous Messages in Thread

-----Original Message-----
 Sent: 05/27/2008 09:27 AM
 From: DEMOPATIENT, MHVSM
 To: Dayton 3
 Subject: Lab or Test Results Question

Please note that we need 3 business days to respond to secure messaging
 I would like to know the results of a Lab Test, X-ray, or Procedure.
 Please type in the name of the Lab Test, X-ray, or Procedure and the date it was performed.

Assign to: DEMOCLINICIAN, MHVSM
Message Status: COMPLETE
Enter a Comment:

Previous Comments:

SM Note Saved to CPRS

Vista CPRS in use by: Douglas, David M

File Edit View Action Options Tools Vista Apps Help

ZZ TEST 000-00-0011 **Visit Not Selected** Provider: DOUGLAS, DAVID M Primary Care Team Unassigned **Flag** **Remote Data** **Postings WF**

Last 200 Signed Notes (Total: 505)

- Secure Messaging
 - Jun 11.08 SECURE MESS
 - Jun 11.08 SECURE MESS
 - Jun 11.08 SECURE MESS
 - Jun 11.08 SECURE MESS
 - Jun 11.08 SECURE MESS
 - Jun 10.08 SECURE MESS

Visit: 06/11/08 SECURE MESSAGING, SECURE MESSAGING, DAVID M. DOUGLAS MD (Jun 11, 08@17:02)

LOCAL TITLE: SECURE MESSAGING
DICT DATE: JUN 11, 2008@17:02:09 **ENTRY DATE:** JUN 11, 2008@10:02:11
DICTATED BY: DOUGLAS, DAVID M **EXP COSIGNER:**
URGENCY: **STATUS:** COMPLETED

-----Original Message-----
 Sent: 06/11/2008 11:58 AM
 From:
 To: Portland Primary Care
 Subject: Medication Prescription Question

Please note that we need 3 business days to respond to secure messaging.
 *If you are having a problem with your medication that cannot wait that long, please call the number on your prescription label:
 Please enter your prescription related question OR concern below:
 I am out of refills on Lisinopril. I have 25 days supply left. Can you renew this medication?
 Your Patient,

-----Original Message-----
 Sent: 06/11/2008 12:01 PM
 From: Douglas, David
 To: Zztest,
 Subject: Medication Prescription Question

Dear : I have renewed your Lisinopril for 90 days and given you 3 refills. You should receive this in 7-10 days.
 Dr. Douglas

/s/ DAVID M. DOUGLAS MD
 FACILITY CIO/ATTENDING PSYCHIATRIST
 Signed: 06/11/2008 10:02

Cover Sheet | Problems | Meds | Orders | Notes | Consults | Surgery | D/C Summ | Labs | Reports



Where is the real opportunity?

41

Patient Gateway
Connecting with care

She's scheduling an appointment.

He's refilling a prescription.

Introducing Patient Gateway - the fast, efficient, and secure way to reach your doctor's office. Developed by Partners HealthCare System, Patient Gateway uses the power of the Internet, so you can renew prescriptions, request referral authorizations for specialist appointments, and access quality health and wellness information at your convenience. With Patient Gateway, connecting with your doctor's office has never been easier!

Enroll online today at: www.patientgateway.org
or
email us at: patientgateway@partners.org

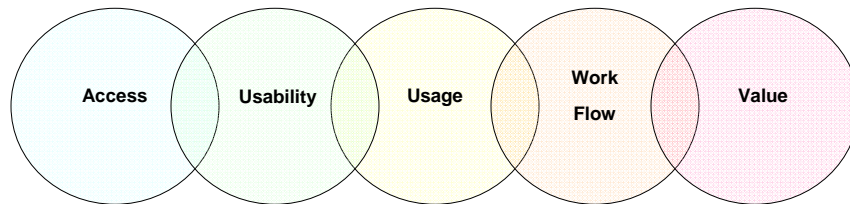
Introducing Patient Gateway - the fast, efficient, and secure way to reach your doctor's office. Developed by Partners HealthCare System, Patient Gateway uses the power of the Internet, so you can renew prescriptions, request referral authorizations for specialist appointments, and access quality health and wellness information at your convenience. With Patient Gateway, connecting with your doctor's office has never been easier!

Enroll online today at: www.patientgateway.org
or
email us at: patientgateway@partners.org

MASSACHUSETTS GENERAL HOSPITAL **MASSACHUSETTS GENERAL HOSPITAL**
THOMAS J. BRONCKHOFF, MD, FRCPC

42

PHR Utility and Integration into Clinical Care



Access – Internet access, literacy, e-literacy/competence, populations

Usability – Application interface, appropriate and meaningful use

Usage – Measuring use over time, “exposure”, functions used

Workflow – Impact on healthcare team, clinical and other operations

Value – Satisfaction, health/cost outcomes, unintended consequences

43

Early Experiences – PHR Use



- Partners (*PatientSite*, Boston)
 - Used: test results > messaging > refill/med request
 - Messaging: 28 messages / 100 patients per month
 - Messages: clinical > medication > appt > referral
- GroupHealth (*MyGroupHealth*, Seattle)
 - 30% of enrollees authenticated
 - Used: test results > refill > visit summary = messaging
 - Messaging: about half of those authenticated
 - More messaging: higher co-morbidity, 50-65, female
 - High variation among provider panels (3% - 52%)

Halamka JD, Mandl KD, Tang KD. J Am Med Inform Assoc 2008; 15:1-7
Ralston JD, Carrell D, Reid R et al. J Am Med Inform Assoc 2007; 14:798-806
Ralston JD, Rutter CM, Carrell D et al. J Gen Intern Med 2009; 24:349-55.

Patient Users Are Satisfied



- Geisinger Health System (*MyChart*, PA.)
 - Found PHR easy to use
 - 33% high school or less educated
 - Found errors in medical information (meds)
- University of Colorado (*My Doctor's Office*)
 - Users reported better communication and care
 - 81% said it saved a call, 33% said it saved a visit

Hassol A. et al. J Am Med Inform Assoc 2004; 11:505-513.

Lin CT et al. J Med Internet Research 2005; 7(4).

PHR Interest May Relate to Patient-Provider Relationship



- Qualitative study with patients with diabetes (U.Pitt)
- 39 users and nonusers of portal – SM, tests, monitoring
- Those satisfied with relationship – less interest in portal
- Those less satisfied – more interested in portal
- Barriers: difficulty learning to use it, belief it would limit communication choices

Zickmund SL, Hess R, Bryce CL et al. J Gen Intern Med 2008; 23(Suppl 1):20-26.

Secure Messaging and Patient Engagement



- Cross sectional cohort w/ diabetes - Group Health
- 5,274 (34% of total) authenticated, 55% used SM
- SM user initiated messages 89% of time
- 32% higher outpatient visits in user vs. nonuser
- More frequent use associated with HgA1c control
 - “Chronic but controlled” more engaged? or
 - Does engagement lead to better control

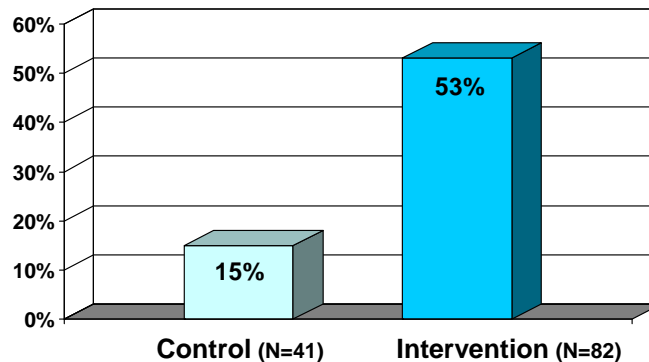
Harris LT, Haneuse SJ, Martin DP, Ralston JD. *Diabetes Care* 2009; April 14.

47

Patient e-Journals Alter Care

- Prepare for Care Study - *Patient Gateway*, BWH
- RCT patients with diabetes for shared record, online journal

% of Patients With Medication Changes



48

Courtesy of B. Middleton, MD, Partners Healthcare System

Blood Pressure Control at 1 Year: PHR with Pharmacist e-Care



- RCT with 778 patients hypertension not controlled
- PHR: e-message, Rx refills, tests, visit summaries

% of Patients with BP Control

	PHR + Pharmacist	PHR Only	Usual Care
All patients	56%	36%	31%
Subgroup: SBP >180	54%	26%	20%

Green BB, Cook AJ, Ralston JD, Fishman PA et al. JAMA 2008; 299:2857-67

Interactive, Consumer Health IT for Elderly, Chronic Illness & Underserved



- Summary (563 papers reviewed, 129 included)
- Usage measures varied, poorly defined
 - Empiric: highest usage with peer support and/or self-management
- Barriers: lack of perceived benefit, usability and technical problems, not fitting into usual activities
- Drivers: tailored feedback, clinician involved, convenient
- Effect: bi-directional communication (patient monitoring and individual feedback) that is timely and tailored

Jimison H, Gorman P, Woods S, et. al. Barriers and Drivers of Health Information Technology Use for the Elderly, Chronically Ill and Underserved. Agency for Healthcare Research and Quality. 2009. <http://www.ahrq.gov/clinic/tp/hitbartp.htm>⁵⁰

The Real Digital Divide?



51

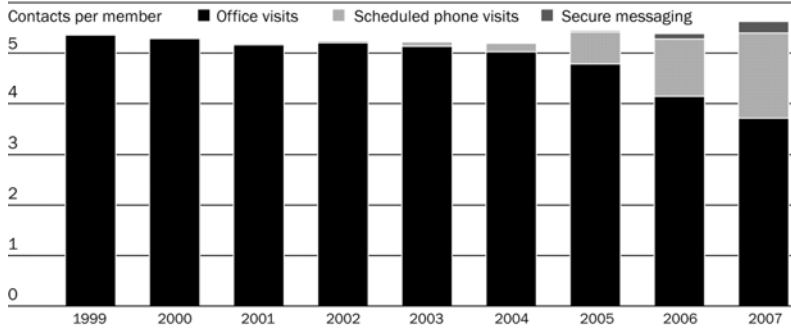
Physician Views of PHR Use and Secure Messaging



- Fewer studies
- Qualitative study of early adopters
- Positives: saves time compared to phone, more patient information, better provider access, auto-documentation, patients share sensitive information, 1-on-1 relationship
- Negatives: balancing quality/workload, urgent issues come up, “scope creep”, overuse, need triage & good judgment, unclear impact on time, managing high patient expectations, lack of policies
- Also found: providers “choose” patients (disparity?)

Patt MR, Houston TK, Jenckes MW, et al. J Med Internet Res 2003; 5(2):e9

EXHIBIT 5
Distribution Of Patient Contacts Over Time Among Kaiser Permanente (KP) Hawaii Members, 1999–2007



SOURCE: Authors' analysis using data from the Kaiser Permanente Hawaii Data Warehouse and secure messaging database.

Catherine Chen, Terhilda Garrido, Don Chock, Grant Okawa, and Louise Liang,
 The Kaiser Permanente Electronic Health Record: Transforming And Streamlining Modalities Of Care,
 Health Affairs, Vol 28, Issue 2, 323-333



Copyright ©2009 by Project HOPE. all rights reserved.

My HealthVet Research Studies



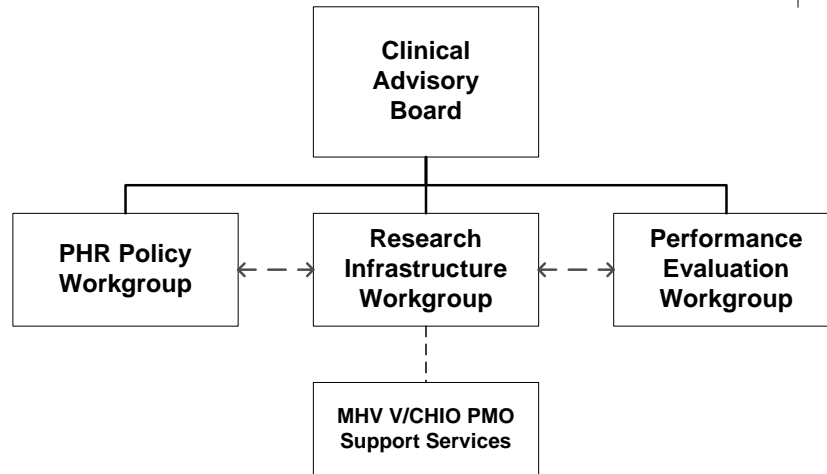
Examples of current studies:

- Usability/Human Factors Testing (Chumblor, Saleem)
- Patient & Provider Perceptions of e-Messages to Promote Disease Screening (McInnes)
- Data Needs and Technical Infrastructure (Weingardt, Wagner)

Examples of proposed studies:

- Identifying Barriers to Reach and Authenticate Patients
- My HealthVet as a Tool to Support Care Transitions
- Implementation Research with Facilitation

MHV Infrastructure Development



55

My HealthVet Performance Evaluation Workgroup



- Guide MyHealthVet program evaluation
- Address research as dimension of program efforts
- Support and expand research agenda
- Identify strategies to support research
- Translate findings into program improvements

Chair: Kim Nazi, FACHE, Veteran/Consumer Informatics Office

56

My HealthVet Research Infrastructure Workgroup

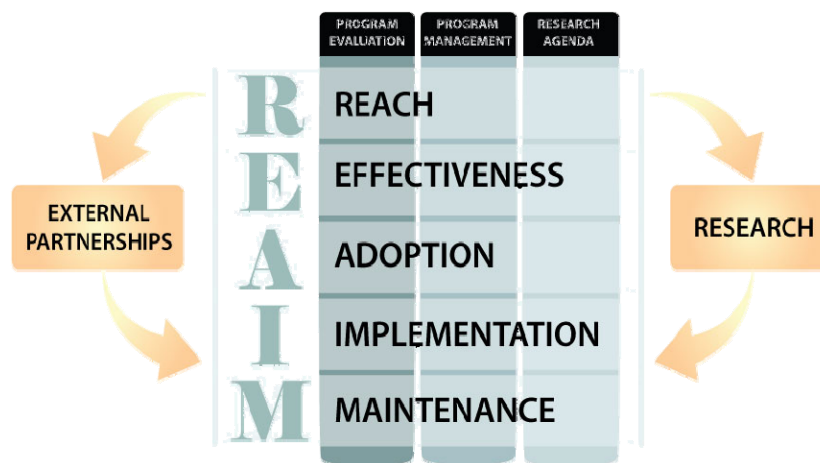


- Standardize process for MHV research requests
 - Data transaction logs
 - Patient-entered data (e.g. glucose) to link to adherence
- Modifications to MHV content, such as:
 - A self-management intervention for a condition
- Address resources needed for research requests
 - Within MHV Program Office
 - That which researchers can provide

Chair: Fran Weaver, PhD, Hines VAMC

57

MyHealthVet Performance Evaluation Framework



* An extension of the RE-AIM Framework at www.re-aim.org

58

RE-AIM Modified to PHR Research



Reach	Access, users and usage (nonusers)
Effectiveness	Enhance access, quality, outcomes
Adoption	Promote clinical integration
Implementation	Impact clinical teams, processes, work
Maintenance	Monitor impact over time, mitigate health IT disparities

59

“The laying on of hands will increasingly include the pressing of keys. This emerging model will improve the practice of medicine but will also bring new challenges.”

- JH Stone

Communication between physicians and patients in the era of E-medicine.
N Eng J Med, 2007

60