Leveraging Health Information Technology for Patient Empowerment

April 8, 2010

Moderator:

Teresa Zayas-Cabán

Agency for Healthcare Research and Quality

Presenters:

Christine Sinsky

Alexander Krist

Christine Ritchie

AHRQ National Resource Center
for Health Information Technology

Agenda

- *Intro*: Practicing Physician's Perspective
- *Study 1*: VCU: Personalized Portal for Prevention
- *Study* 2: UAB: e-Coaching and Transition Support
- *Discussion*: Barriers and Enablers
- Q & A

Leveraging Health IT for Patient Empowerment

Christine A. Sinsky, M.D.
Medical Associates Clinic and Health Plans

MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA
AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Why Focus on Patient Empowerment

- Majority health determinants outside provider's control
- Engaged, activated patient (& family) will achieve better outcomes
  - – Center for Studying Health System Change, Research Brief #8;2008
- *If the patient doesn't come up with the solution it won't work*

MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

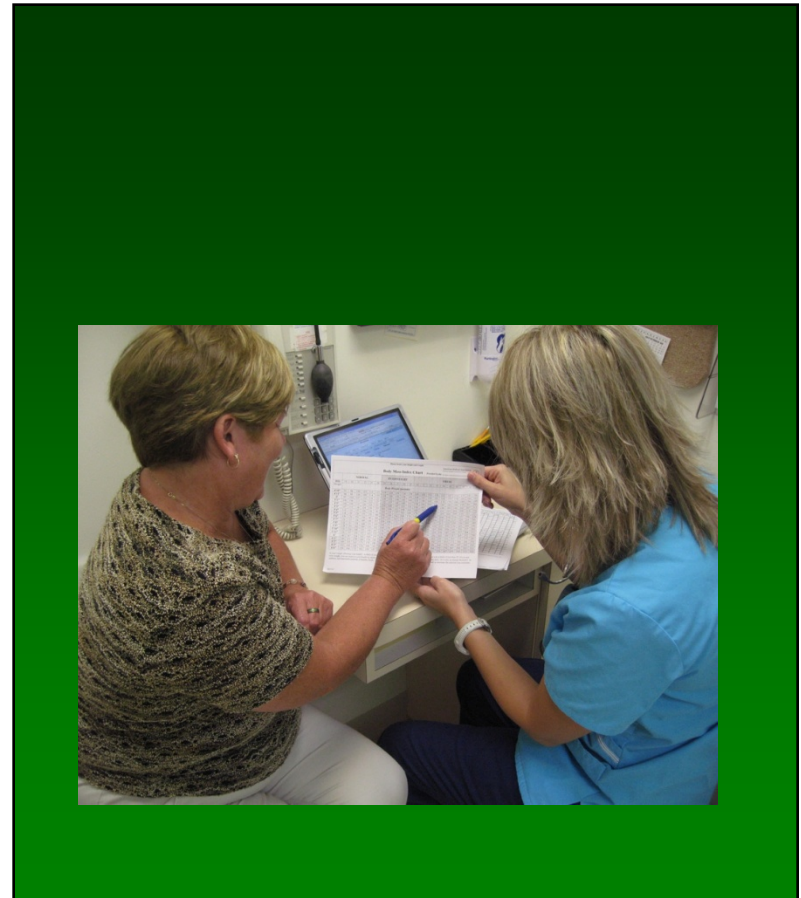
DEPARTMENT OF HEALTH & HUMAN SERVICES • USA
AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

115 physician multi-specialty

EHR: 2003

Leveraging Health IT: ***Information Therapy***

- Information is power
- *Facilitates collaborative decision making*
  - X-ray reports
  - Consultation reports
  - Cumulative lab
    - "How do your diabetes numbers look?"
    - Shared medical decision making
  - Encounter note
    - Vitals, PFSH



MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

AHRQ Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Lab Summary

Result Name	Ref Range	Oct 17 2008 07:43	Jun 27 2008 07:12	Feb 22 2008 07:10	Jan 11 2008 07:20	Jan 11 2008 07:20	Oct 5 2007 07:47	Jul 13 2007 07:10	Apr 6 2007 07:40	Dec 29 2006 08:18	Dec 29 2006 08:18	Oct 6 2006 07:20	Jul 14 2006 07:30	May 31 2006 15:40	Apr 7 2006 07:32	Dec 2 2005 07:20
Comment:											C					
Gluc	65-99 mg/dl	101 *	155 *	99	109 *		144 *	146 *	166 *	151 *		190 *	146 *		153 *	130 *
A1cHgb	4.0-6.0 %	6.0	6.5 *	6.6 *	6.9 *		7.1 *	8.0 *	6.2 *	6.2 *		6.4 *	6.1 *		6.3 *	5.4
Retic Count	25-75 thou/ul															
Microalb/Creat	0.0-30.0 mg/g					6.1					–					
Microalb, Rand U	0.0-1.9 mg/dl					0.8					< 0.5					
Creatinine, Urine	- mg/dl					131.0					85.9					
Cholesterol	-<=199 mg/dl		148		164			147		131 ✓		157 ✓	142 ✓			142 ✓
LDL	-<=99		85		101 *			90		62 ✓		84 ✓	76 ✓			74 ✓
HDL	40-60 mg/dl		47		45			43		45		47	43			48
Triglyceride	-<=149 mg/dl		80		92			72		121 ✓		130 ✓	114 ✓			98 ✓
AST	11-41 iu/l		19		17			18		17		20	25			18

Leveraging Health IT:
Updated Medication List

Calcium-D Oral Capsule 600-200 mg-unit (Liquid Calcium, Liquid...)	2 DLY
Carvedilol 25 mg Tab (carvedilol oral)	1 tab in the am and 1/2 tab in
Ecotrin Oral Tablet, Delayed Release (E.C.) 325 mg (Adult Low Dose Aspirin...)	1 DLY
Enalapril Maleate 20 mg Tab (enalapril maleate oral)	1 tablet(s) by mouth 2 times p
Glimepiride 4 mg Tab (glimepiride oral)	1 tablet(s) by mouth daily
Lancets (lancets misc.(non-drug; combo route))	test twice a day every other d
multivitamins w-minerals oral Tablet (Antioxidant Vitamins, ...)	1 DLY
nifedipine oral tablet,sustained action 60mg (Adalat CC, Afeditab CR...)	1 tab(s) PO QDAY
nitroglycerin sublingual tablet,sublingual 0.4mg (NitroQuick, Nitrostat)	1 sl prn chest pain (MR q5 mi
One Touch Ultra Test Strips (blood sugar diagnostic in vitro)	test twice a day every other d
Plavix 75 mg Tab (clopidogrel bisulfate oral)	1 tablet(s) by mouth daily
Simvastatin 80 mg Tab	1/2 TAB DAILY

Leveraging Health IT:
Real time research with patient

Leveraging Health IT: ***Hospital to Home***

Leveraging Health IT:

Web Portal

CLINIC | HEALTH PLANS

MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS

HOME | ABOUT US | FIND A DOCTOR | CAREERS | CONTACT US

Clinic

- Medical Departments
- Physician and Provider Search
- Family Care Network
- Tri-State Occupational Health
- Tri-State Surgery Center
- Business Office
- 24-Hour HELP Nurse
- Optical Shop
- Welcome Center

Health Plans

- my e-Link
- Members
- Employers
- Providers
- Agents
- Health & Wellness
- Rx Formulary
- My Flex

What's New

Classes & Events

Autism: Learning to be a Cool Teen

Free Head and Neck Cancer Screening

Clinic Awarded "Patient-Centered Medical Home" Recognition >>learn more

Medical Associates is one of only 16 practices in the nation, and the first in the Midwest, to receive this prestigious distinction.
What is a Patient Centered Medical Home? >>watch video

Medical Associates Breast Health Center Offers New Digital Mammography Services

Medical Associates builds on decades of medical excellence by offering the Tri-states most advanced techniques available for diagnosing and treating breast cancer, including digital mammography.
>>learn more

New Patient Welcome Center

Looking for a doctor?

24-Hour Help Nurse

my eLINK

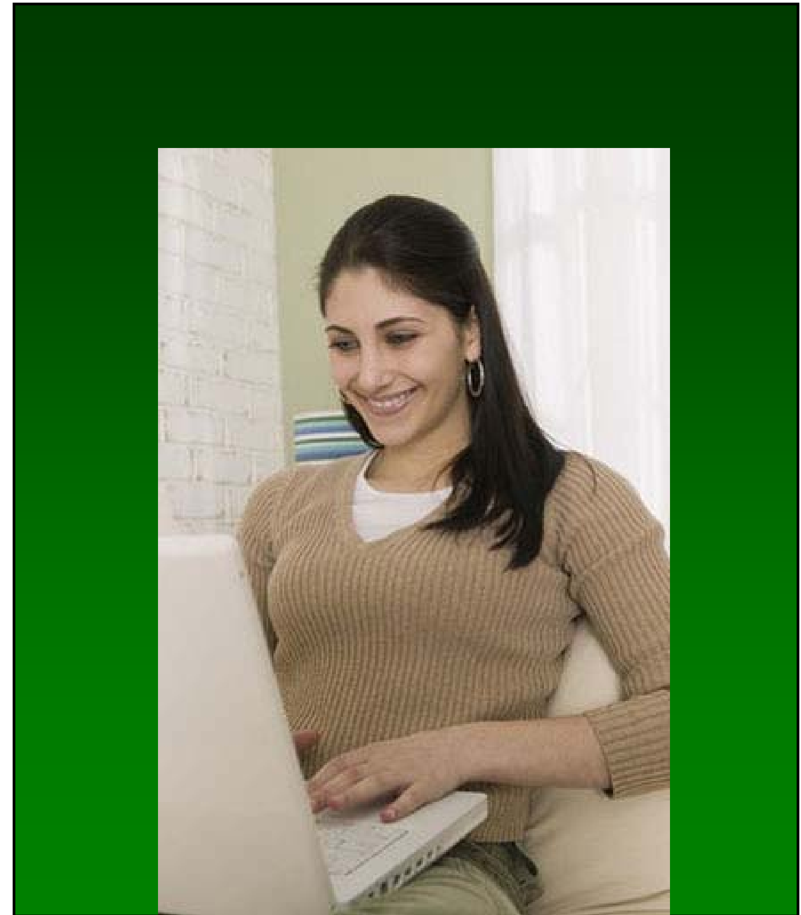
Well Child Guide

careers

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Leveraging Health IT:

- Email
- Scheduling



MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Leveraging Health IT:
Web Portal

- Pre-visit questionnaire
  - Pre-populates visit note
  - Patient Health Questionnaire (PHQ)2
    - Link PHQ9
  - + Cig
    - Link smoking cessation
  - At risk drinking
    - Link alcohol counseling

MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA
AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Leveraging Health IT: ***Web Portal***

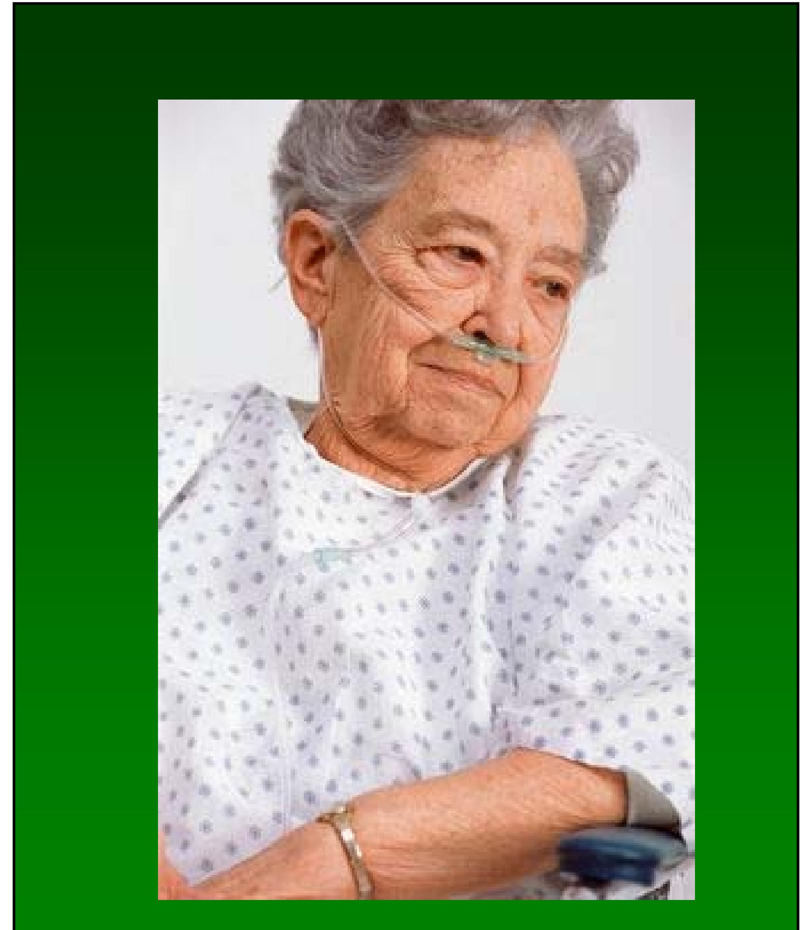
- Lab results
  - Link Med. diet
  - Link community exercise
- Medication lists
  - Link to drug info

Result Name	Ref Range	Oct 17 2008 07:43	Jun 27 2008 07:12	Feb 22 2008 07:10	Jan 11 2008 07:20	Jan 11 2008 07:20	Oct 5 2007 07:47	Jul 13 2007 07:10	Apr 6 2007 07:40
Comment:									
Gluc	65-99 mg/dl	101 *	155 *	99	109 *		144 *	146 *	166 *
A1cHgb	4.0-6.0 %	6.0	6.5 *	6.6 *	6.9 *		7.1 *	8.0 *	6.2 *
Retic Count	25-75 thou/ul								
Microalb/Creat	0.0-30.0 mg/g					6.1			
Microalb, Rand U	0.0-1.9 mg/dl					0.8			
Creatinine, Urine	- mg/dl					131.0			
Cholesterol	-<=199 mg/dl		148		164			147	
LDL	-<=99		85		101 *			90	
HDL	40-60 mg/dl		47		45			43	
Triglyceride	-<=149 mg/dl		80		92			72	
AST	11-41 iu/l		19		17			18	

MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Leveraging Health IT:
Hospital Family Portal



MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Thank you!

csinsky1@mahealthcare.com

MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

myPreventiveCare™

Helping you take care of your health

A Personalized Portal to Promote Patient-Centered Preventive Care

Alex Krist M.D., M.P.H.

Virginia Commonwealth University (VCU)

Agency for Healthcare Research and Quality

Advancing Excellence in Health Care • www.ahrq.gov

Legend

Personal Health Records (PHRs)

- High perception of value – 79% of Americans believe a PHR could provide major benefit in managing health

- High interest – 47% of Americans expressed interest in using an online PHR

…BUT only 2.7% of adults have an electronic PHR

VCU

2008 Markel Foundation

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

My Preventive Care

- Integrated PHR-Electronic Medical Record (EMR)
- Clinician and patient created for needs and workflow
- Focused on preventive (and chronic disease)
- Clinical decision support logic integrated
  - USPSTF, JNCVII, NCEP, ADA, 2005 Dietary, and ACIP guidelines
- Individually tailored patient messages and educational links
  - Partnered with ODPHP
- Patient and clinician reminders system

Specific Aims

- To evaluate whether an invitation from a patient's primary care clinician to use the interactive preventive health record (IPHR) (versus usual delivery of preventive care) will result in:
  - Increased delivery of age and gender USPSTF recommended clinical **preventive services**;
  - Use of the **IPHR**;
  - Increased **shared decision-making** for preventive services; and
  - Improved **clinician-patient communication** about preventive needs.

VCU

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA

AHRQ Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Study Design

- AHRQ (R18), Enabling patient-centered care through health IT initiative

  (R18 HS17046- 01)
- Randomized controlled trial
- 8 practices using a common EMR (Touchworks)
- 5500 patients
  - 2750 mailed an invitation to visit the IPHR
  - 2750 control patients receiving usual preventive care
- EMR data, IPHR data, and postal surveys to measure increase in preventive care delivery

VCU

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA

AHRQ Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Preventive Services Addressed

- Colon cancer
- Prostate cancer
- Breast cancer
- Cervical cancer
- Chlamydia screening
- Hypertension screening
- Hyperlipidemia screening
- AAA screening
- ASA chemoprophylaxis
- Diabetes screening
- Osteoporosis screening
- Tetanus vaccination
- Influenza vaccination
- Pneumococcal vaccination
- Diet
- Exercise
- Smoking
- Weight loss

VCU

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

1. Patient is instructed to go to *My Preventive Care*

My Preventive Care is openly available on the web at:

www.MyPreventiveCare.com

www.MyPreventiveCare.net

www.MyPreventiveCare.org

Login

Friday, February 13, 2009

myPreventiveCare™

Make healthy choices and improve your life

My Preventive Care

- My Preventive Care
- Get the Prevention You Need
- Helping You Stay Healthy
- Keeping Information Private
- How This Website Works
- NEW USERS - Setup An Account

Interactive Preventive Health Record

My Preventive Care was developed by researchers at Virginia Commonwealth University. The purpose of the website is to help patients and their healthcare providers. The website is not part of a business venture. None of the researchers or developers stands to profit by your using the website.

What Is My Preventive Care?

My Preventive Care is a tool to help you and your doctor work together for prevention. It personalizes information for you. My Preventive Care does not just tell you what people should do to stay healthy --- it is all about what *you* need to stay healthy.

My Preventive Care will...

- Show you your preventive information in your doctor's record – like your blood pressure, when you last had tests, and some of your results.
- Tell you what preventive care you need based on your information and your doctor's recommendations.
- Direct you to information on the Internet that your doctor wants you to see to help you learn more about your prevention needs.
- Give you and your doctor reminders so that you don't have to worry about when you need to do preventive tests again.

"This website let me know what I need now"

"I will use it again. Very informative."

2. Patient establishes a *My Preventive Care* account

- Patient needs to enter
  - MRN (provided by clinician's office)
  - Gender (provided by patient)
  - Date of birth (provided by patient)

  Patient selects a username and password

3. Patient answers a brief health risk assessment

- Because My Preventive Care uses EMR data, the patient only needs to answer a few health risk questions
  - 11 questions for men and 12 for woman
- Questions are about data not stored well in EMRs
  - Race/ethnicity, health behaviors, family history, and some abnormal test results

myPreventiveCare™

Helping you take care of your health

NEW USERS - Setup An Account

Section 3 of 4: Health Interview - Lifestyle Questions

Your health habits (how often you exercise, what you eat, and whether you smoke) all have a big influence on your health.

During the past four weeks, how many servings of fruits and vegetables (combined total) did you usually eat each day? One serving is an average-sized piece of fruit, ½ cup cooked vegetables, or 1 cup of raw vegetables.

- ○ None
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5 or more

During the past four weeks, how many times per week did you participate in any physical activity that lasted for at least 30 minutes, such as walking for exercise, gardening, running, aerobics, or bicycling?

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5
- ○ 6
- ○ 7

Do you now smoke cigarettes?

- ○ Yes
- ○ No

4. *My Preventive Care* pulls the patient's data from the EMR

- 167 EMR data elements that include
  - Demographics, vital signs, diagnoses, orders, results, management plans, medications, and immunizations

5. Patient reviews and updates personal health information

- My Preventive Care presents a summary of the data in the EMR that relates to prevention and chronic disease management
- Patients are given an opportunity to update their information

Medical History
(from your doctor's record)

You have had . . .

Breast cancer	no
Cervical cancer	no
Colon cancer	no
High blood pressure	yes
High cholesterol	yes
Diabetes	yes
Heart disease	no
Asthma Emphysema	no
A hysterectomy	no

You do not take an aspirin daily.

Your Test Dates
(from your doctor's record)

You had . . .

a mammogram on 5/28/2008
a glucose test on 10/22/2008
an A1c test on 9/10/2008

You have never had . . .

a pap smear
a bone density test
a colonoscopy
a sigmoidoscopy
a home blood stool test

Your Test Results
(from your doctor's record)

The most recent date and value of . . .

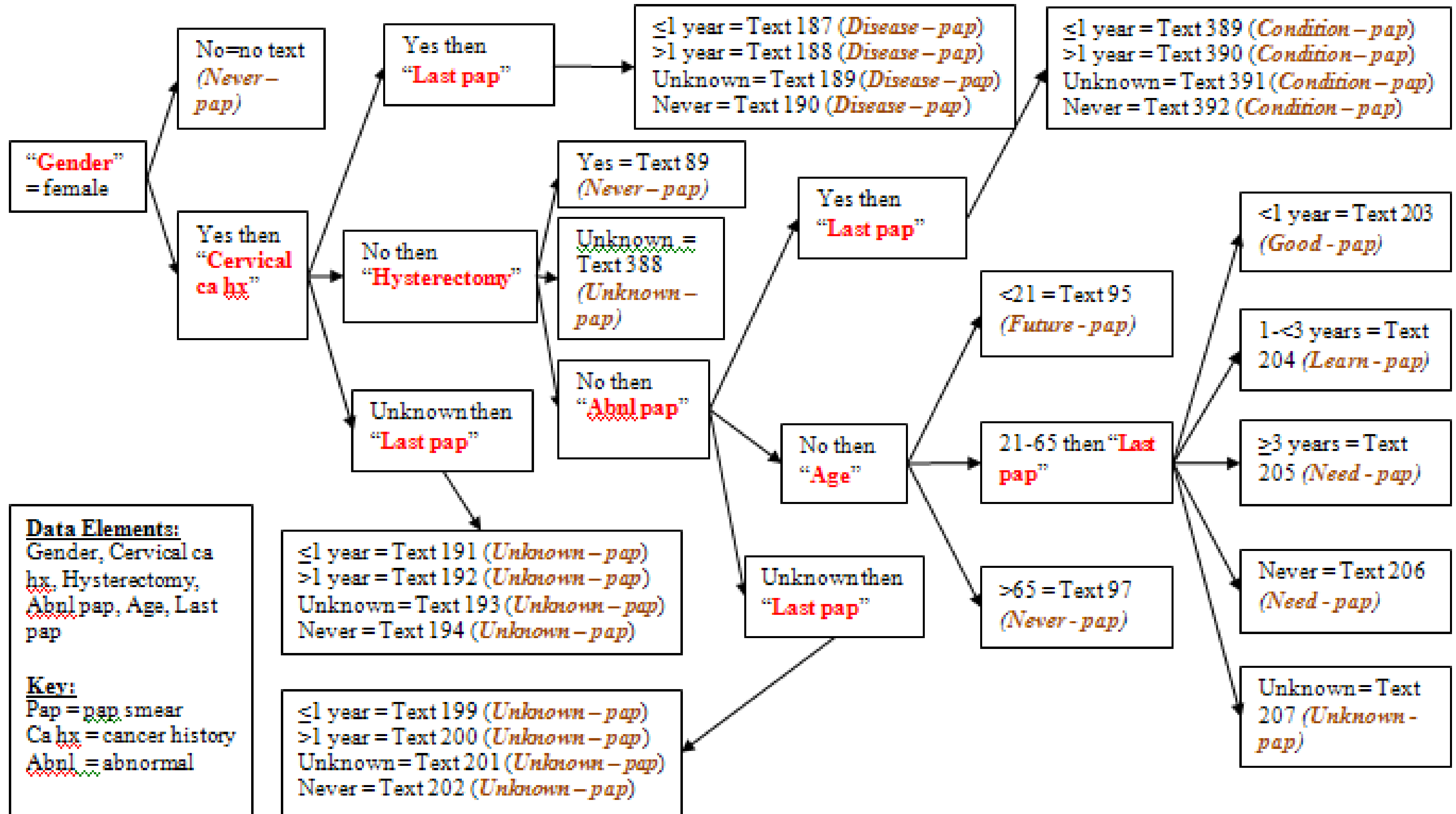
your weight on 12/15/2008 was 299 pounds
your height on 7/14/2006 was 5 feet and 7 inches
your blood pressure on 1/30/2009 was 124/70
your LDL cholesterol on 5/23/2008 was 89
your HDL cholesterol on 5/23/2008 was 36
your glucose on 10/22/2008 was 95
your A1c on 9/10/2008 was 9.1

You have no results for . . .

6. *My Preventive Care* categorizes the patient’s preventive needs

- Categories are linked to an individual patient message
- The logic for this categorization was created with support from the U.S. Preventive Services Task Force
- Categories include “Get these preventive services,” “Keep these illnesses in check,” “Keep up the good work,” “Think about the future,” “Incomplete information,” and “Things you may never need”

CERVICAL CANCER SCREENING: LOGIC (25)



VCU

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA
AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

7. Patient is given a personal list of their care needs

- The list quickly and simply shows patients what they need, what they are doing well with, and what they need to think about in the future

Your Prevention Recommendations

- **Get These Preventive Services**
- Keep These Illnesses In Check
- Keep Up The Good Work
- Think About The Future
- Incomplete Information
- Things You May Never Need

Manage Your Information

< Report Your New Information
< Give Us Feedback

General Information

< Setting Priorities
< Prevention Topics A to Z
< Useful Links
< Dictionary of Medical Terms

Preventive Care You Need Now

Based on your information, these are the preventive services that you may want to do now.

- Get Tested For Cervical Cancer
  Get a Pap test every 1 to 3 years.
- You May Need To Get Tested For Colon Cancer
  Get tested regularly for colon cancer.
- Get More Active
  Get moving for 30 minutes or more everyday.
- Quit Smoking
  Get tips to help you quit -- and live a longer, healthier life.
- Watch Your Weight
  Balance the calories you eat with the calories you burn.
- You Have High Cholesterol
  Get the follow up care you need for your cholesterol.
- Take Aspirin
  Talk with your doctor about taking aspirin every day.
- Your Last A1c Was High
  Find out if you need to do anything to better control your diabetes.

Preventive Care to Learn More About

These are preventive services that are less clear. Depending on your values, you may or may not want to do these now.

- Learn About Getting Tested For Chlamydia
  If you are at risk, get tested for Chlamydia once a year.

8. A patient can learn more about any of their specific needs

- Patients can click on any topic in their summary list to see more detailed information
- Each message is individually tailored to the specific patient's needs
- Each message includes specific patient data
- Messages were created with assistance from the Office of Disease Prevention and Health Promotion

Get These Preventive Services

Your Prevention Recommendations

- Get These Preventive Services
- Keep These Illnesses In Check
- Keep Up The Good Work
- Think About The Future
- Incomplete Information
- Things You May Never Need

Manage Your Information

< Report Your New Information
< Give Us Feedback

General Information

< Setting Priorities
< Prevention Topics A to Z
< Useful Links
< Dictionary of Medical Terms

You Have High Cholesterol

Your Information

You have high cholesterol.
You had a cholesterol test on 5/23/2000.
Your LDL cholesterol was 89.
Your HDL cholesterol was 36.
You have 4 risk factors for heart disease. Your risks include: having diabetes, smoking, having hypertenstion and being overweight.
Given your risks, your goal LDL is less than 100.
You are due to get your cholesterol checked now.

The Basics

Since you have high cholesterol, you should have your cholesterol checked every year. It is good you had your cholesterol checked on 5/23/2000, but you are overdue to have it checked again. Given your risks, your goal LDL cholesterol is less than 100. It is good that your last LDL cholesterol was 89. Too much cholesterol in your blood can cause heart disease or a heart attack and a healthy lifestyle or medication can lower your cholesterol.

The Benefits

The good news is that cholesterol can be easily checked. And if your cholesterol is high, there are things you can do to control it. Lowering your cholesterol can reduce your risk of heart disease, strokes, and clogged arteries in your legs – and can help you live a longer, healthier life.

Your Next Steps

- Talk with your doctor about getting your cholesterol checked again now.
- Work with your doctor to continue to control your cholesterol.
- Live a healthy lifestyle to continue to control your cholesterol. This includes eating foods low in saturated fat, trans fat, and cholesterol, getting active, and controlling your weight.

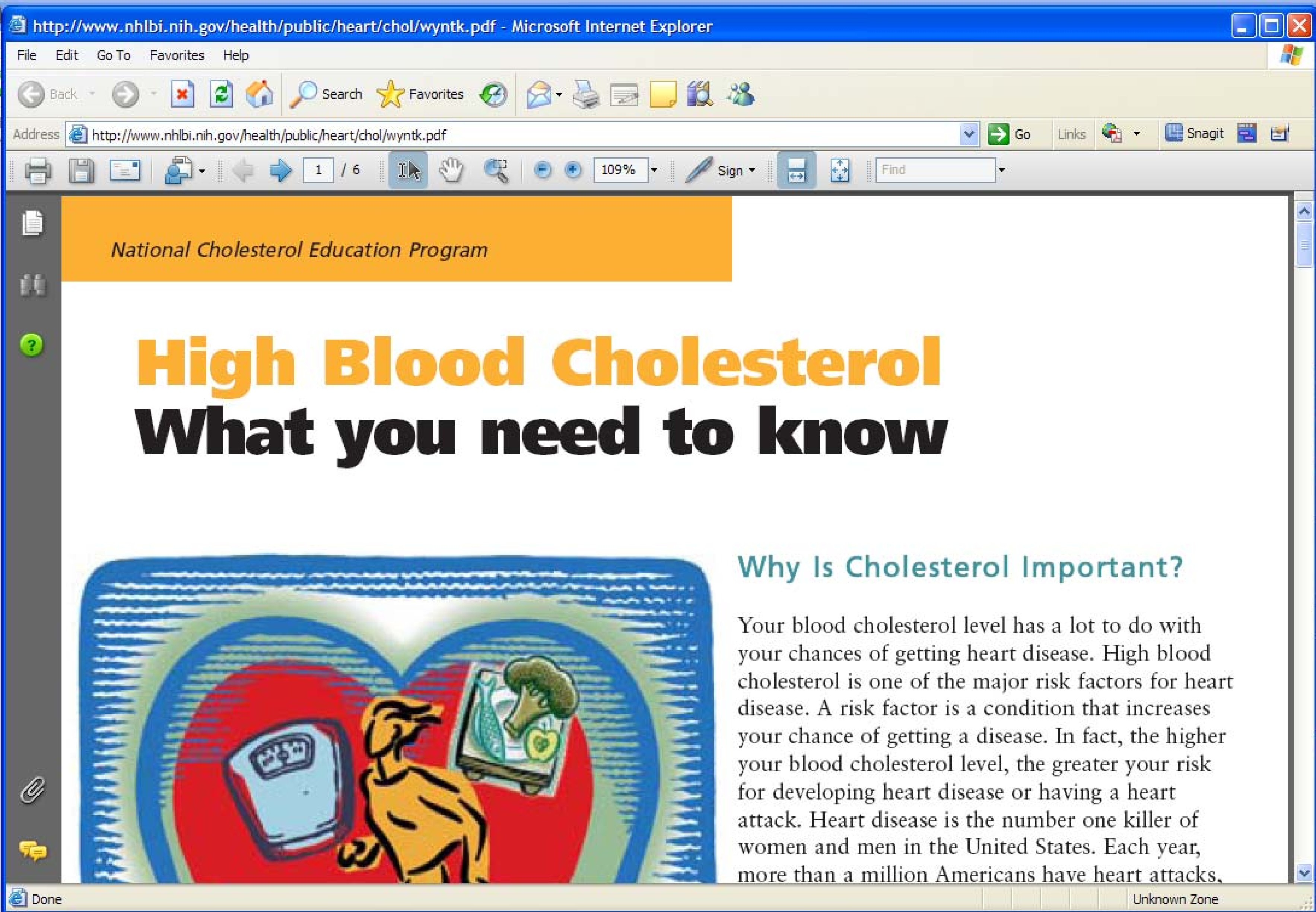
Information to Guide Your Next Steps

See what your past cholesterol levels (HDL values, LDL values) have been.
Learn more about cholesterol.
Learn more about healthy lifestyles to maintain a good cholesterol level.

Back to Previous Page

9. At the end of each detailed message are links to more resources

- Links are meant to be like the patient's clinician showing the patient where to go on the web for more information
- Resources include educational material, risk calculators, health tools, local resources, and decision aids
- Links are individually tailored to each specific patient
- Resources are evidence-based from trusted, non-commercial, national organizations



< Prevention Topics A to Z
< Useful Links
< Dictionary of Medical Terms

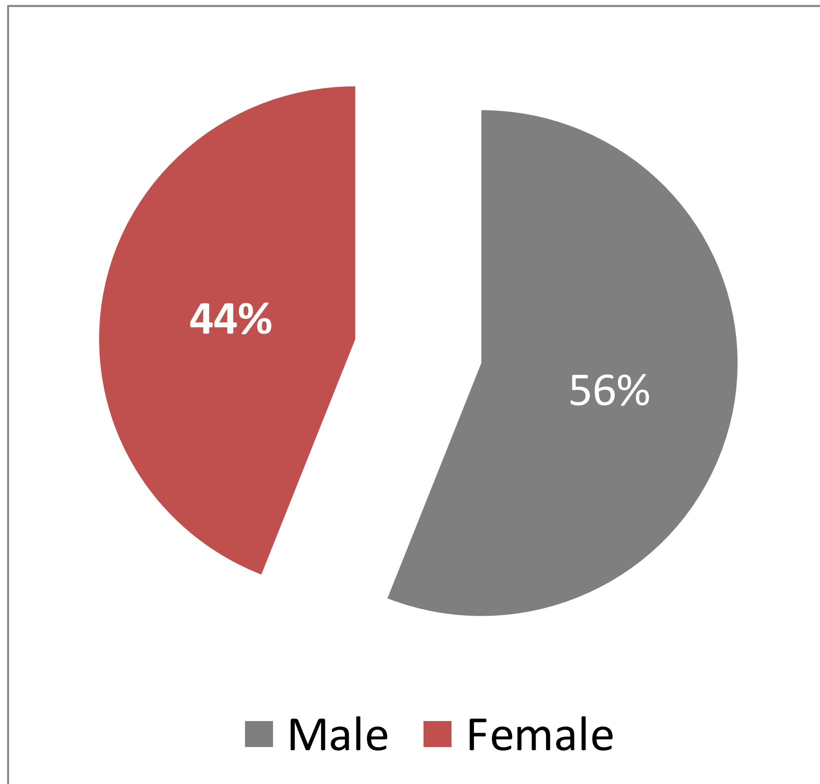
Information to Guide Your Next Steps

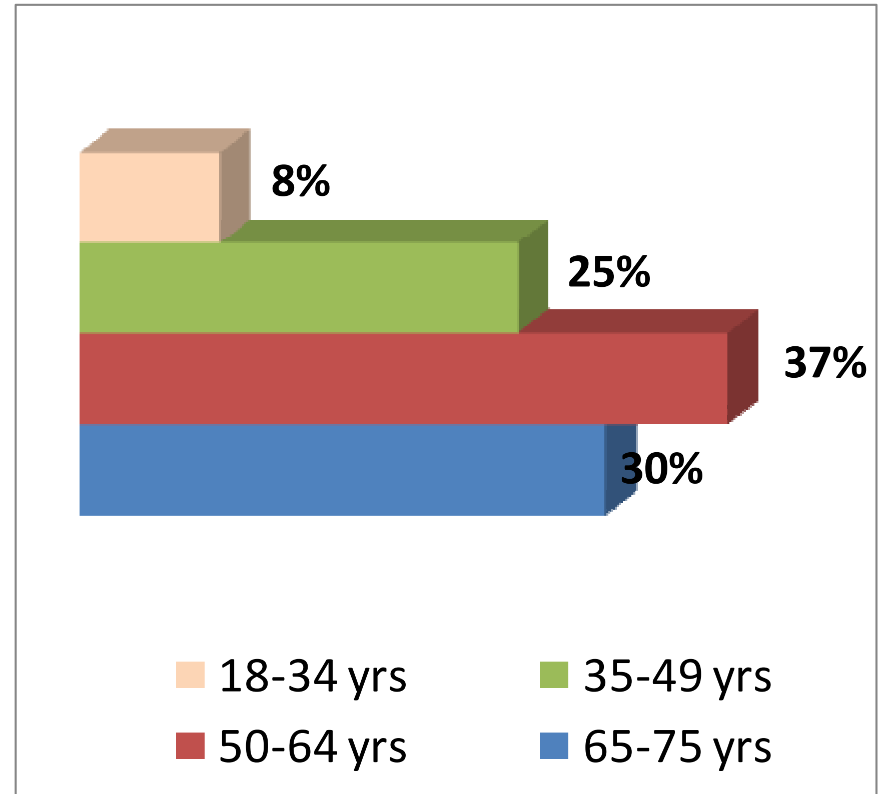
See what your past cholesterol levels (HDL values, LDL values) have been.
Learn more about cholesterol.
Learn more about healthy lifestyles to maintain a good cholesterol level.

10. *My Preventive Care* sends a patient summary to the patient's clinician

- Summaries come in the EMR similar to a lab result
- Summary includes
  - Any information that the patient updates
  - A list of the patient's health behaviors
  - A list of the patient's needs

My Preventive Care Users

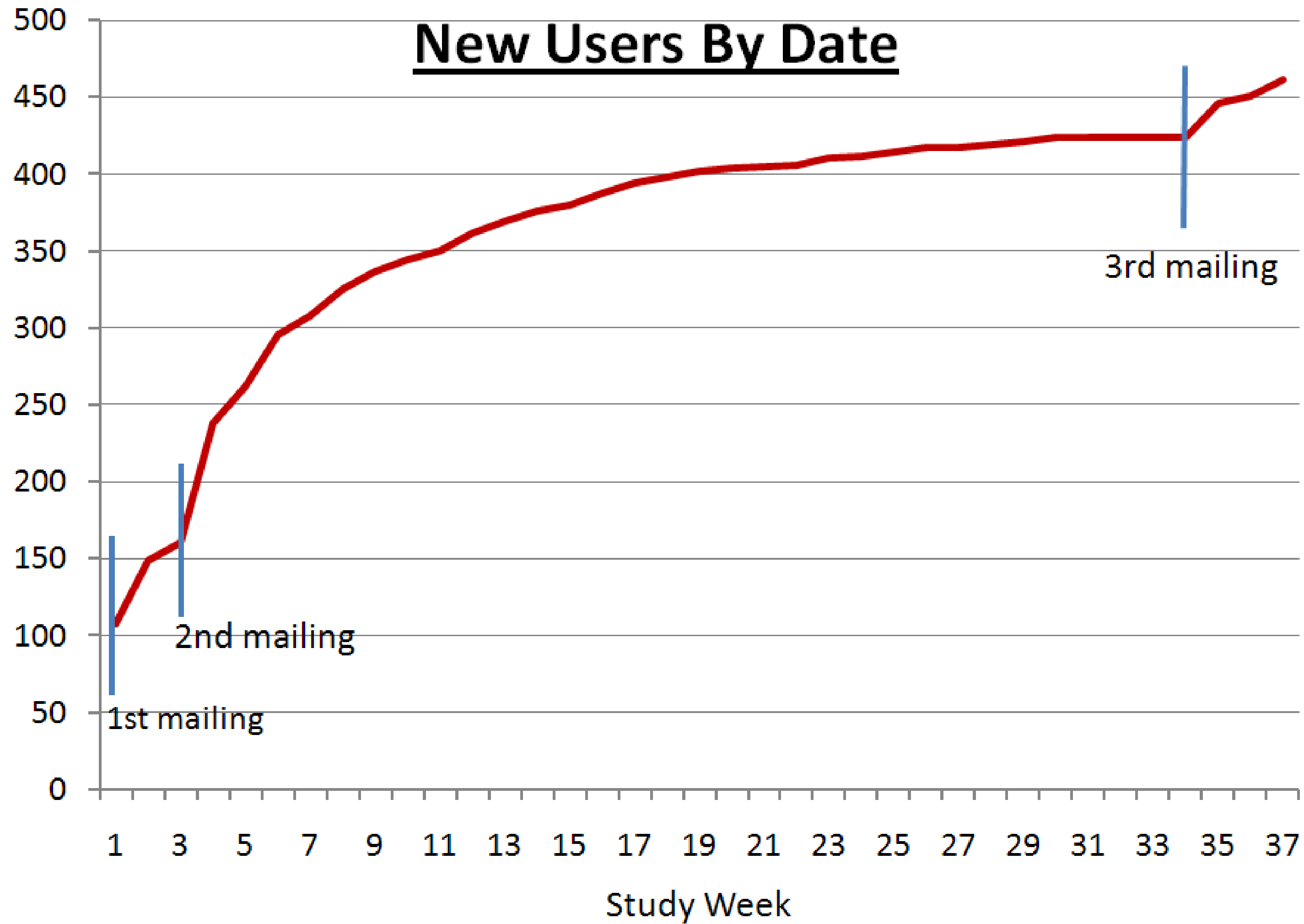




VCU

Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

My Preventive Care Use



VCU

AHRQ Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

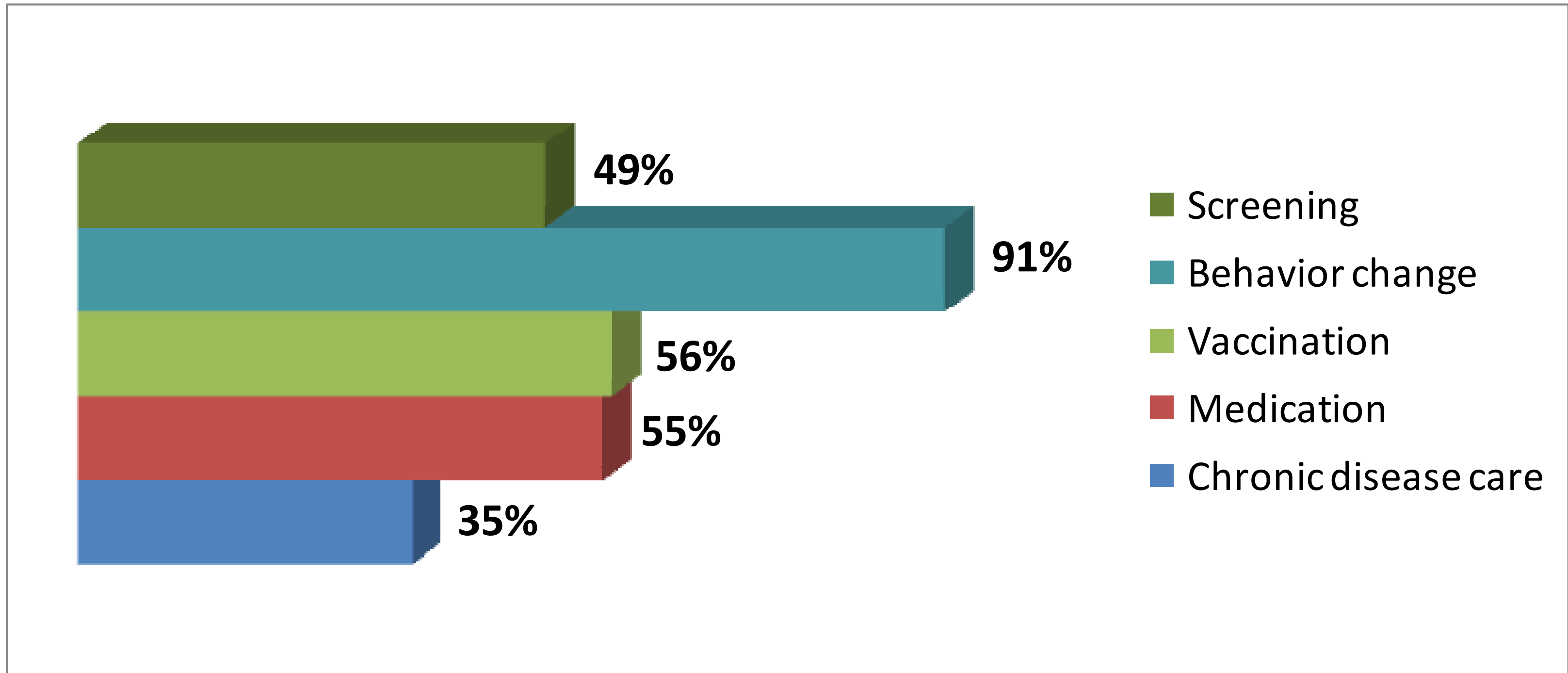
User Characteristics

- 78% of patients had a wellness or chronic care visit in the past year
  - 43% Wellness visit / 46% Chronic care visit

- Co-morbidities were common
  - 9% Diabetes
  - 5% Cancer
  - 12% Coronary artery disease
  - 46% Hyperlipidemia
  - 39% Hypertension

Preventive Care Needs

- Users are up-to-date with 53% of preventive care
- Only 2.2% of users are up-to-date on all services
- Not up-to-date users need an average of 4.6 services



VCU

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

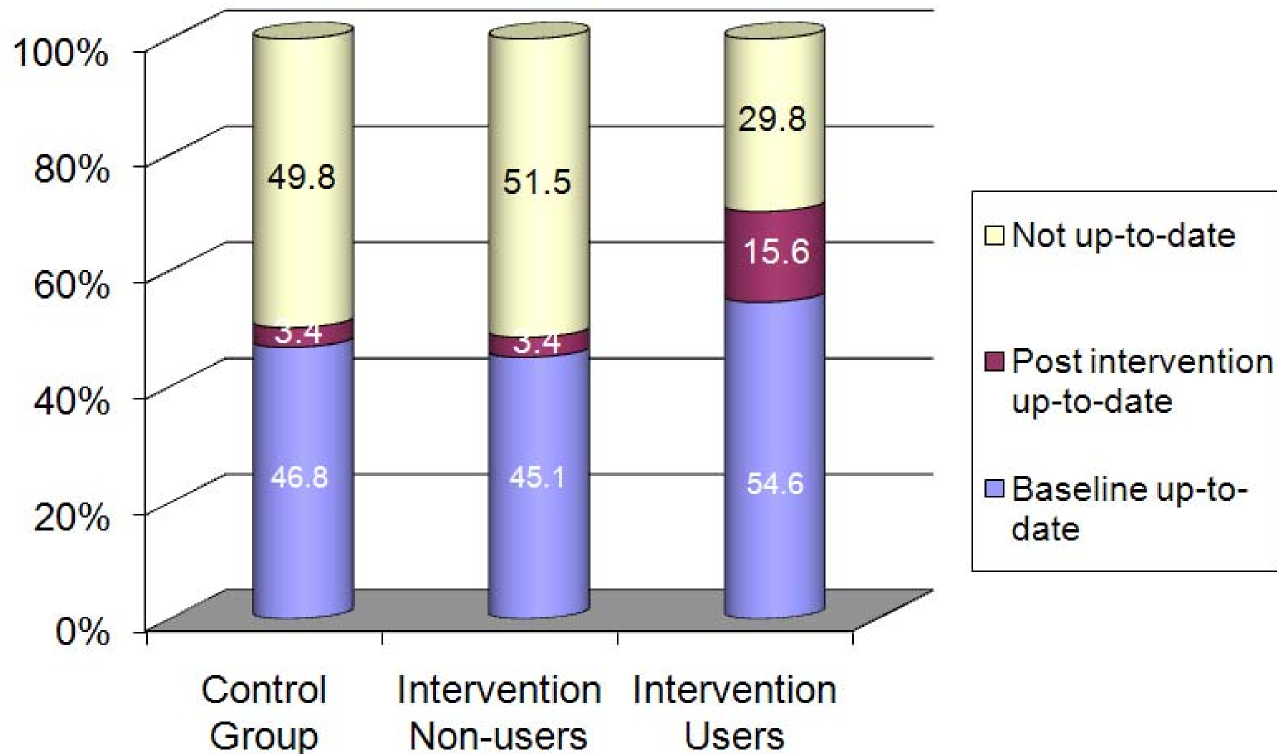
Process Impact of *My Preventive Care*

- Clinician summary led practices to
  - Update 59% of patient's medical records
  - Contact 84% of patients
    - Schedule a wellness visit for 27% of patients
    - Schedule a chronic care visit for 17% of patients
    - Get a specific service for 19% of patients

VCU

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA
AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Impact of *My Preventive Care* on Delivery of Care ($p<0.0001$)



VCU

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Focus Group Findings

Three focus groups of 14 users, *two* focus groups of 14 non-users, *one* focus group of 7 providers

- Major themes included Trust and Functionality
- Trust included trusting security and accuracy of information, personal physician offering was key
- Functionality included expectations, problems, and suggestions
  - A key expectation was for the system to be comprehensive and sophisticated
- Users and non-users expressed similar views

VCU

AHRQ Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Conclusions

- While patients are interested in an integrated PHR-EMR, a simple invitational letter is not enough
- My Preventive Care incorporates many evidence-based tools, but patients and clinicians want even more
- Stereotypes about which patients will use an electronic PHR may not be correct
- Everyone needs something
- *My Preventive Care* appears to increase delivery of preventive services

Future Work

- Integrate survey and EMR data into one analysis
- Look at impact on patient-clinician communication
- Integrate *My Preventive Care* into daily clinical activities and interface *My Preventive Care* with several new EMRs (Epic and Professional) and several PHRs (Medfusion and MyChart)
  - Funded through AHRQ Task Order (#290-07-100113)
- Link *My Preventive Care* claims data from payers
- Become a CMS recognized registry for PQRI reporting

VCU

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA

AHRQ

Agency for Healthcare Research and Quality

Advancing Excellence in Health Care • www.ahrq.gov

Thank you!

ahkrist@vcu.edu

Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

e-Coaching: Interactive Voice Response (IVR)-Enhanced Care Transition Support for Complex Patients

Christine S. Ritchie M.D., M.S.P.H., F.A.C.P.
University of Alabama at Birmingham (UAB)

Care Transition: A High Risk Event

- Approximately 20% of recently discharged patients experience adverse events, often precipitated by ineffective communication

- Almost 12% report new or worsening symptoms within 3 to 5 days of leaving the hospital

- One-quarter of Medicare beneficiaries post hospitalization experienced a complicated care transition within the first 30 days post-discharge

Care Transition: A High Risk Event

- Cost to Medicare of unplanned re-hospitalizations in 2004 was $17.4 billion

- Common deficiencies:
  - preparing caregivers and patients for the transition
  - transferring information across settings
  - supporting self management of chronic conditions

Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

The NEW ENGLAND JOURNAL of MEDICINE

SPECIAL ARTICLE

Rehospitalizations among Patients in the Medicare Fee-for-Service Program

Stephen F. Jencks, M.D., M.P.H., Mark V. Williams, M.D., and Eric A. Coleman, M.D., M.P.H.

From an independent consulting practice, Baltimore (S.F.J.); the Division of Hospital Medicine, Northwestern University Feinberg School of Medicine, Chicago (M.V.W.); and the Care Transitions Program, Division of Health Care Policy and Research, University of Colorado at Denver, Denver (E.A.C.).

N Engl J Med 2009;360:1418-28.
Copyright © 2009 Massachusetts Medical Society.

ABSTRACT

BACKGROUND

Reducing rates of rehospitalization has attracted attention from policymakers as a way to improve quality of care and reduce costs. However, we have limited information on the frequency and patterns of rehospitalization in the United States to aid in planning the necessary changes.

METHODS

We analyzed Medicare claims data from 2003–2004 to describe the patterns of rehospitalization and the relation of rehospitalization to demographic characteristics of the patients and to characteristics of the hospitals.

Table 2. Highest Rates of Rehospitalization and Most Frequent Reasons for Rehospitalization, According to Condition at

Condition at Index Discharge	30-Day Rehospitalization Rate	Proportion of All Rehospitalizations	Most Frequent	2nd Most Frequent
	percent			
Medical				
All	21.0	77.6	Heart failure (8.6)	Pneumonia (7.3)
Heart failure	26.9	7.6	Heart failure (37.0)	Pneumonia (5.1)
Pneumonia	20.1	6.3	Pneumonia (29.1)	Heart failure (7.4)
COPD	22.6	4.0	COPD (36.2)	Pneumonia (11.4)

JENCKS ET AL. N ENGL J MED 009;360:1418-28

Scope of the Problem: UAB Hospital

Over 900 beds

Over 45,000 admissions from across Alabama and the Southeast

Readmission rates for CHF/COPD: 18%

Challenge of Current Care Transition Models

Model	Resources Required
Care Transition Model	NP or RN coaches going into the home
Naylor CHF Care Model	NP in hospital and home
Phoenix Palliative Care Model	Home-based interdisciplinary team (multiple disciplines in the home)

Possible Solutions

- Web-based Care Transition Support
- Home Telemonitoring
- Interactive Voice Response
- Care Partners
- Video or telephone-based counseling
- Internet or IVR-supported Stepped-Care Approach

The Care Transitions Intervention

Preparing Patients and Caregivers to Participate in Care Delivered Across Settings: The Care Transitions Intervention

Eric A. Coleman, MD, MPH,[*†] *Jodi D. Smith, ND, GNP,*[*] *Janet C. Frank, DrPH,*[‡]
Sung-Joon Min, AM,[*] *Carla Parry, PhD, MSW,*[*] *and Andrew M. Kramer, MD*[*†]

OBJECTIVES: To test whether an intervention designed to encourage older patients and their caregivers to assert a more active role during care transitions can reduce rehospitalization rates.

DESIGN: Quasi-experimental design whereby subjects receiving the intervention (n = 158) were compared with control subjects derived from administrative data (n = 1,235).

SETTING: A large integrated delivery system in Colorado.

PARTICIPANTS: Community-dwelling adults aged 65 and older admitted to the study hospital with one of nine selected conditions.

INTERVENTION: Intervention subjects received tools to promote cross-site communication, encouragement to take a more active role in their care and assert their preferences, and continuity across settings and guidance from a transition coach.

patients at risk for transitions who are not acutely ill. J Am Geriatr Soc 52:1817–1825, 2004.

Key words: care transition; care coordination; self-management; chronic illness

Older adults moving between different healthcare settings are particularly vulnerable to receiving fragmented care.[1,2] Healthcare delivery is ostensibly divided into discrete loci of care that often function in isolation of one another. Financial, regulatory, and professional barriers serve to further reinforce these silos of care such that care coordination across settings is often lacking.[2–4] When practitioners in different settings operate independently with no common care plan, older patients may be adversely affect-

Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Four Pillars of the Care Transition Model

- Medication Self-Management
- Patient-Centered Health Record (PHR)
- Primary Care Provider/Specialist Follow-Up
- Knowledge of Red Flags

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Coaching versus Case Management

Case Manager

- **Paradigm**: Doing or Rescuing
- **Goal**: Achievement of clinician—directed goals
- **Focus**: task completion

Coach

- **Paradigm**: Engaging/Empowering
- **Goal**: Sharing of skills that are in line with patient concerns/goals
- **Focus**: coaching to support the patients' skills in self management and interface with healthcare providers

E-Coach Study Design

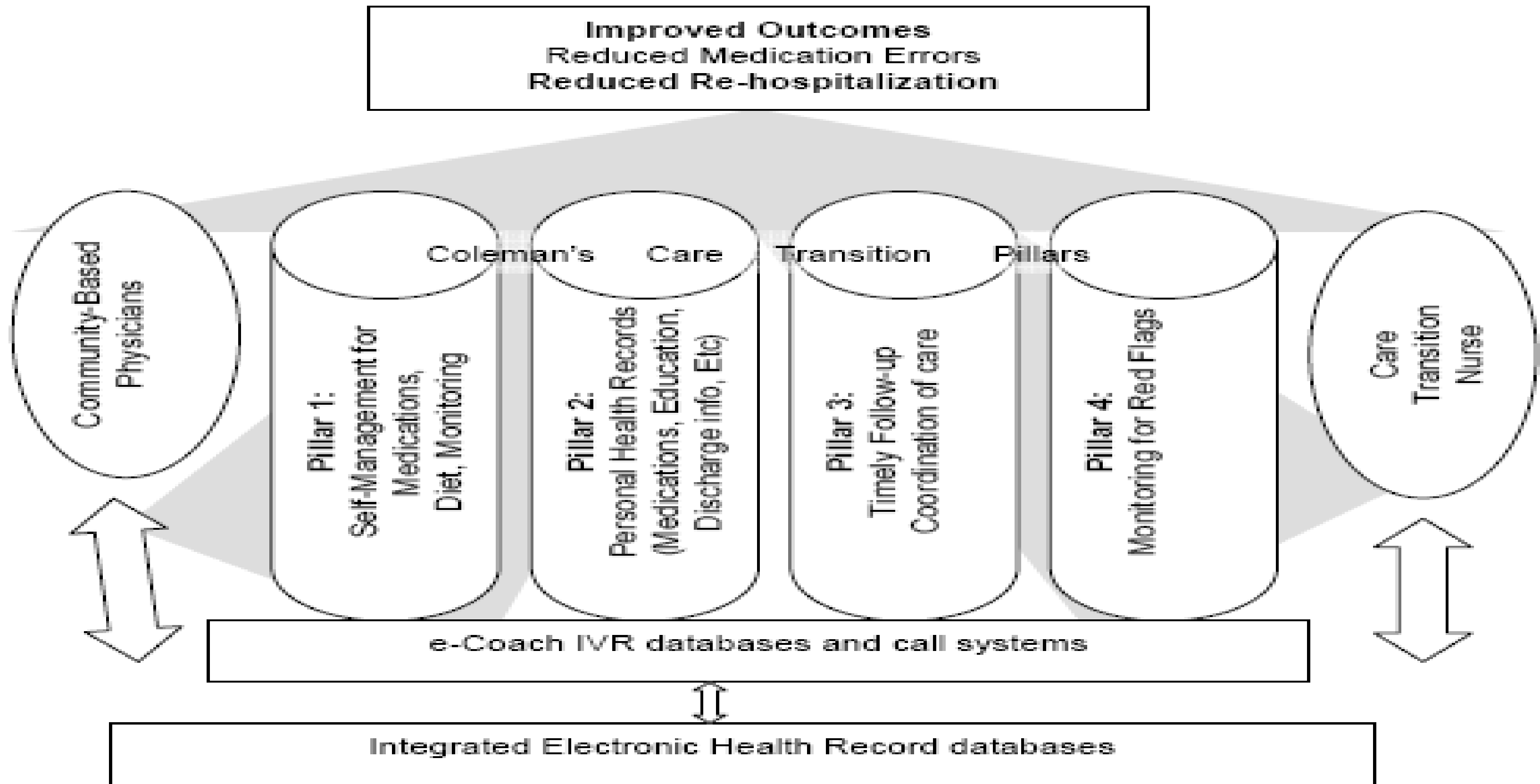
- AHRQ (R18), E-Coaching: IVR-Enhanced Care Transition Support for Complex Patients

  *(*R18 HS017786-01*)*
- Randomized controlled trial
- Hospitalized patients with COPD or CHF who have a prognosis greater than 6 months and are expected to be discharged to home
- Evaluate the efficacy of a Care Transition Intervention (CTI) model that uses an Interactive Voice Response Supported (IVR) care transition coaching intervention

Specific Aims

- Develop an IVR-supported Care Transition program ("e-Coach").
- Evaluate use of e-Coach by patients and healthcare providers through a randomized controlled trial.
- Evaluate the impact of e-Coach (versus comparison) on patient outcomes
- Quantify the cost associated with e-Coach (versus comparison).

Coleman's Care Transition Pillars: Increasing Patient Activation



Coaching Connecting Caring
UAB Back To Home

Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Usual Care

Transition Intervention

-Prepare for discharge
-Receive discharge instruction list

Home

Follow-up Erratic

Medication Discrepancies

Unclear Understanding of Condition or Red Flags

IVR-enhanced Care

Transition Intervention

Hospital Transition Coach:

-Conduct initial hospital visit

-Prepare for discharge

-Introduce IVR, PHR and Intervention Activities Checklist

Home

Follow-up

IVR:

-Initial call 24-72 hours post discharge

-Subsequent automated IVR phone calls daily up to 28 days post-discharge

Transition Coach:

-Follow-up calls if IVR alerts on Dashboard

Role of the Coach

- Educate patients on e-coach IVR and the Care Transition Intervention four pillars
- Monitor patient's symptoms communicated to the e-coach IVR through a web-based dashboard (up to 28 days post discharge)
- Contact patients when alerted by dashboard
- Work with patients/caregivers to resolve questions/concerns

Patient Education Materials: Treatment Information Planner (TIP)

Coaching Connecting Caring
UAB Back To Home

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Individual meeting with a Coach prior to hospital discharge

Coaching Connecting Caring
UAB Back To Home

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA
AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

DASHBOARD

ECOACH
BACK TO HOME SUPPORT PROGRAM

Pre-enrollment | Hold | Active | Patient Stats

Patient ID: ALL

MR# : ALL

DX : ALL

Search

Active Patients

Patient ID	MR#	Name	Proxy	Phone Number	Call Time	Hold
1039	1234534	Richard Wat		123-456-7001	10:00 PM	
1040	741159	Eric John Bodner Gaadner	Richard Watt	333-998-7695	2:00 PM	
1042	321	Jeremy Smith	Richard Watt	205-934-7695	8:30 PM	
1043	345	Amanda Smith		205-317-9038	1:30 PM	
1044	362	Jane Doe	Richard Watt	205-934-7695	5:30 PM	
1046	654321	Joe Smith1		205-934-1234	4:00 PM	

DASHBOARD

ECOACH
BACK TO HOME SUPPORT PROGRAM

Pre-enrollment | Hold | Active | Patient Stats

Enrollment Information

Jane Doe

Patient ID : 1044

MRN :	362
Proxy :	Richard Watt
Address :	133 19th St S Ste 133 Birmingham AL 35294
Phone Number :	205-934-7695 (9,9347695)
Date of Birth :	05/19/1970
Blessed Score :	8
Start Date :	02/17/2010
Call Time :	5:30 PM
Next Survey :	29

PCP Information

Name :	Percy Hugh
Phone Number:	205-555-8741
Address :	123 Anywhere Rd

Edit

DASHBOARD

ECOACH
BACK TO HOME SUPPORT PROGRAM

Pre-enrollment | Hold | Active | Patient Stats

Patient ID : All
MR# : All
DX : CHF
Coach : ALL
Survey From Date: 02/17/2010 (MM/dd/yyyy)
Survey To Date: 03/17/2010 (MM/dd/yyyy)
Status: Reviewed

Search

Patient List

Status	Type	Patient ID	MR#	Name	Survey Number	Call Option	Survey Date	Coach	Results (RedFlag/TIP/MedMgmt/FollowUp)			
✔	CHF	1044	362	Jane Doe	1		02/17/2010	Nive	RF	TIP	MM	FU
✔	CHF	1046	654321	Joe Smith1	1		02/17/2010	Nive	RF	TIP	MM	FU

DASHBOARD

Survey Results

Q.No	Description	Response
Q 1	Let's talk about your overall health. How are you feeling today?	Good
Q 2	Are you feeling the same, better or worse than when you left the hospital?	Same
Q 3	Are you having shortness of breath today?	
Q 4	Are you having shortness of breath at rest?	
Q 5	Are you having shortness of breath during activity?	
Q 6	Which kind of activity best describes when you have shortness of breath?	
Q 7	Is this a change from when you left the hospital?	
Q 8	Have you weighed yourself today?	
Q 9	Have you had weight gain greater than 2 pounds in the past 24 hours?	
Q 10	How much weight have you gained? Use the telephone keypad to enter the number of pounds.	
Q 11	Do you have sewlling in your legs?	
Q 12	Would you say that you have mild, moderate or severe swelling?	
Q 13	Is this a change from when you left the hospital?	
Q 14	Is this a change?	
Q 15	Are you feeling dizzy or light-headed today?	
Q 16	Is this a change from when you left the hospital?	
Q 17	Are you experiencing pain today?	
Q 18	Is your pain mild, moderate or severe?	
Q 19	Is this a change from when you left the hospital?	
Q 20	In the past week, have there been times when you did not take your medicines?	Yes
Q 21	If you missed any of your medicines, do any of these reasons apply?I did not fill my prescriptions.	Yes
Q 22	The medicine costs too much.	Yes
Q 23	I don't understand how to take the medicines.	Yes
Q 24	The medicines make me feel worse.	No
Q 25	I simply forgot to take my medicine	No
Q 26	Are any of your medicines giving you side effects?	Yes
Q 27	Are side effects interfering with your daily activities?	Yes
Q 28	Are any side effects of your medicines so bad that you stopped taking the medication.	Yes
Q 29	Do you feel certain about when you should take your medicines?	No

Pilot Study Feedback

- "It's good to know someone really cares."
- "Everything was great – it was way shorter than I thought it might be. Can I be in the real study? I need something like this."
- "Answering surveys every day would be helpful if I am very sick. If I am doing ok, I think every other day would be ok. I would try this again if you need more feedback."

RCT Update

- RCT start date : February, 2010
- Eligible participants: n = 34
- Enrolled and randomized: n = 26
  - 74% acceptance
  - 26% refusal
  - 85% randomized to intervention are responding to daily scheduled surveys when called
  - Average 1-2 red flags per participant first 4 surveys
  - Average 1 red flag per participant surveys 4-7
  - Average 1 red flag per week per participant post survey 7 (and 2 yellow flags)

Conclusions

- Patient engagement is a critical element of safe care transitions
- Simple, technology-supported monitoring approaches that integrate patient activation into care transition support may be a resource-efficient way to support patients
- Challenges using IVR technology relate to content development and programming

- e-Coaching: Interactive Voice Response (IVR)-Enhanced Care Transition Support for Complex Patients (RFA: HS08-002): Ambulatory Safety and Quality Program: Improving Management of Individuals with Complex Healthcare Needs through Health IT (MCP)
- Funding Sources:
  - AHRQ: Grant Number:R18 HS 017786
  - UAB Hospital and Viva Healthcare

Thank you!

CRitchie@aging.uab.edu

Leveraging Health IT for Patient Empowerment: Barriers and Enablers

Christine A. Sinsky, M.D.

Medical Associates Clinic and Health Plans

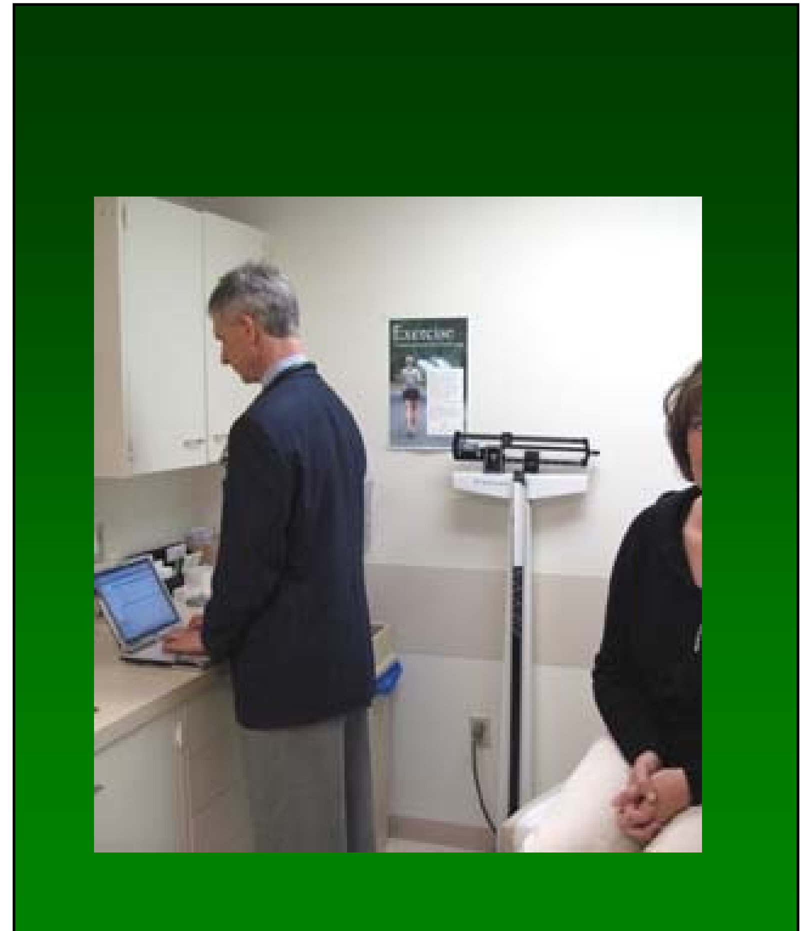
MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Health IT is not completely "there" yet

- Mixed blessing
  - Improved practice in important ways
  - Made work more difficult in other ways



MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

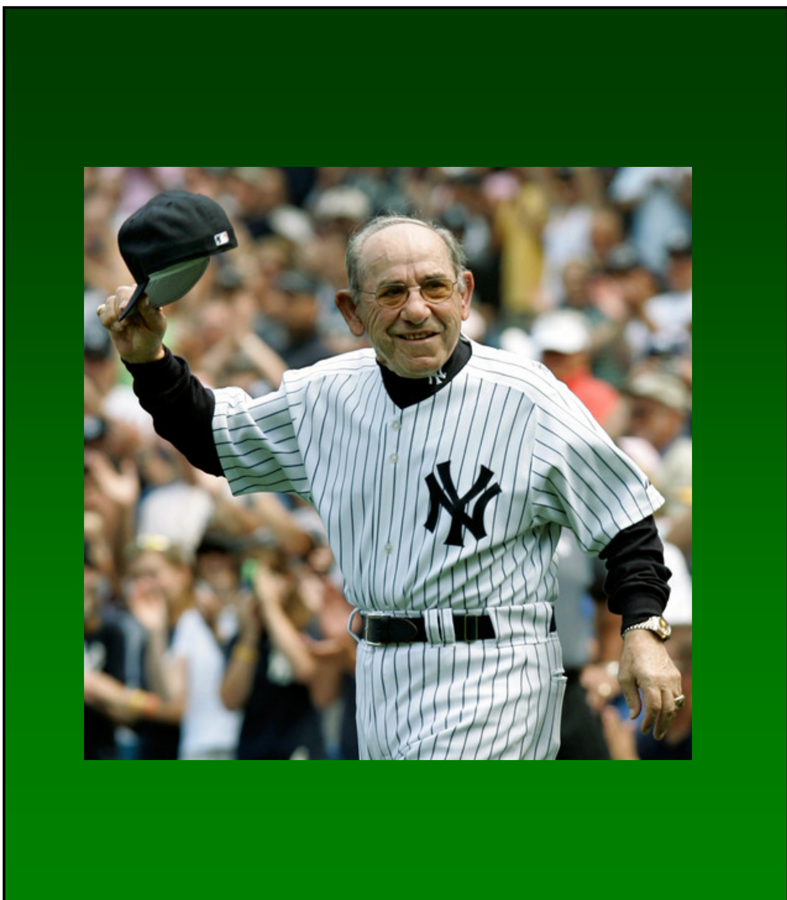
AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

The Devil's in the Details

"In theory, there is no difference between theory and practice.

But, in practice, there is."

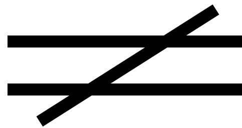
Yogi Berra



MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA
AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Barriers



MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Barriers

- Time
  - 20% more time to day
  - Conceptual vs. operational
- Workflow
  - Increased clerical work to physician
- Quality of interactions
  - Patient-centered care is based on healing relationships

MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Enablers

- Design
  - Minimize clicks, scrolls
- Display
  - Concise, clear, free of clutter
- Implementation
  - Minimize re-work, make-work and mis-directed work
  - Match right task to the right worker
  - Integrate into an efficient workflow

MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Conclusion

- At its best, health IT will help physicians and their teams
  - Take better care of patients
  - Do it more efficiently
  - Remain financially viable
  - Enjoy the work

MEDICAL ASSOCIATES
CLINIC & HEALTH PLANS®

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA
AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

I thought of all the things I should have done for my patients and did not do…the medical home *(and effective health IT)* would give me the vehicle…perhaps I could come home a lot more satisfied and less exhausted knowing that I have delivered the best care possible.

Dr. William Jagiello, Family physician, Iowa. Internal Medicine News 5.1.08 p 54

DEPARTMENT OF HEALTH & HUMAN SERVICES • USA
AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov

Questions & Answers

Our Panel:

Christine Sinsky, M.D., B.S., General Internist at Medical Associates Clinic and Health Plans, Dubuque Iowa.

Alexander Krist, M.D., M.P.H., Assistant Professor in the Virginia Commonwealth University (VCU) School of Medicine's Department of Family Medicine.

Christine Ritchie, M.D., M.S.P.H., Associate Professor at the University of Alabama at Birmingham (UAB) School of Medicine's Center for Palliative Care.

Coming Soon!

Our Next Event

A webinar examining health information technology and health information exchange

Stay tuned for exact date and time and information on how to register

Thank You for Attending

This event was brought to you by the AHRQ National Resource Center for Health IT

The AHRQ National Resource Center for Health IT promotes best practices in the adoption and implementation of health IT through a robust online knowledge library, Web conferences, toolkits, as well as AHRQ-funded research outcomes.

A recording of this Web conference will be available on the AHRQ National Resource Center Web site within two weeks.

http://healthit.ahrq.gov

AHRQ National Resource Center for Health Information Technology

AHRQ
Agency for Healthcare Research and Quality
Advancing Excellence in Health Care • www.ahrq.gov