



Welcome to the AHRQ Medicaid and CHIP TA Web-based Workshop

***Practical Approaches to Using Health IT to Improve Quality and Business Processes in Medicaid/CHIP Agencies***

Tuesday, October 27, 2009, 1:30 – 3:30 pm Eastern

Presented by

**Charles Schade**, MD, MPH, West Virginia Medical Institute (WVMI) and Quality Insights

**Sarah Chouinard**, MD, Chief Medical Advisor of the Community Health Network of West Virginia (CHNWV) & Medical Director for Primary Care Systems, Inc.

Moderated by

**Cindy Brach**, MPP, Center for Delivery, Organization, and Markets (CDOM), Agency for Healthcare Research and Quality (AHRQ)

# Overview

- **Welcome** – Cindy Brach, MPP, Center for Delivery, Organization, and Markets, Agency for Healthcare Research and Quality (AHRQ)
- **Introduction** – Cindy Brach
- **Icebreaker** – Cindy Brach
- **Presentations**
  - **Module 1:** Electronic Health Records: Can They Improve Quality of Care?
    - Presented by Charles Schade, MD, MPH, West Virginia Medical Institute and Quality Insights
  - **Module 1:** Discussion
  - **Module 2:** The Open Source Approach to Quality Improvement: A West Virginia Health Improvement Initiative
    - Presented by Sarah Chouinard, MD, Chief Medical Advisor, Community Health Network of West Virginia (CHNWV) & Medical Director for Primary Care Systems, Inc.
  - **Module 2:** Discussion
- **Closing Remarks** – Cindy Brach



## Module 1: Electronic Health Records

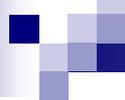
### *Can They Improve Quality of Care?*

Presented by:

Charles Schade, MD, MPH, West Virginia  
Medical Institute and Quality Insights



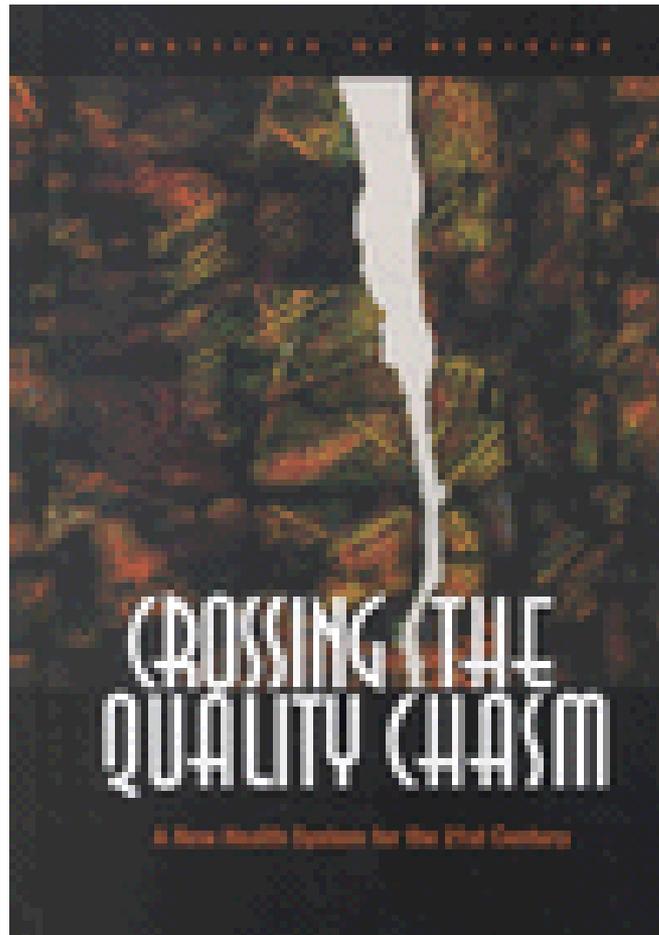
**Yes.**



# This Presentation

- How have researchers studied the impact of electronic health records (EHRs) on quality?
- What are some of the limitations of the studies?
- Why do we think EHRs will improve quality anyway?

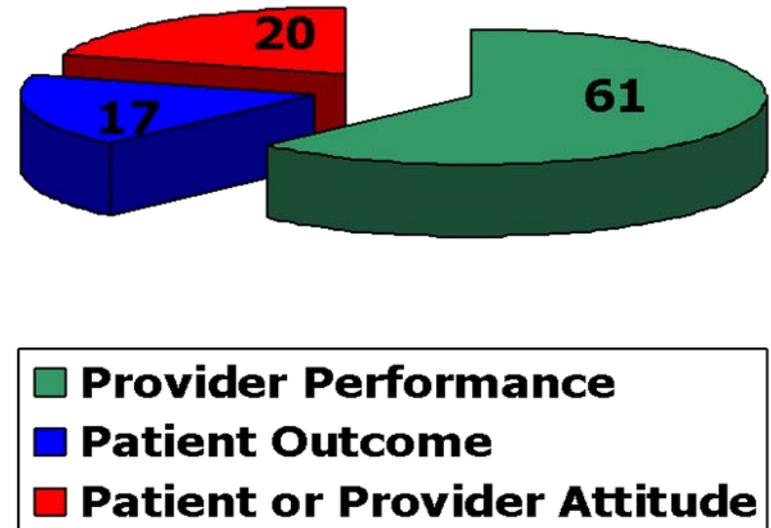
# Institute of Medicine, 2001



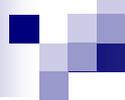
- Automated order entry systems
- Computerized reminders
- Computer-assisted diagnosis and management

# Mitchell and Sullivan, 2001\*

- Reviewed literature (1980-97) on impact of computers on primary-care consultations
- Eighty-nine studies met inclusion criteria

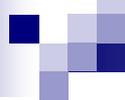


\* Mitchell E, Sullivan F. A descriptive feast but an evaluative famine: systematic review of published articles on primary care computing during 1980-97. *BMJ* 2001;322(7281):279-82.



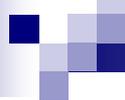
# Mitchell and Sullivan Findings: Content of Consultation

- Consultation length increased 48–130 seconds (6 studies)
- Doctors spent more time on computerized records (2 studies)
- Increased doctor-centered speech vs. patient-centered speech
- Decreased interaction with patients



# Mitchell and Sullivan Findings: Care Quality

- Improved immunization rates (9 studies)
- Better preventive care (22 studies)
- Better management of diabetes and HIV
- More efficient prescribing of less costly drugs
- More efficient targeting of lab procedures



# Mitchell and Sullivan Findings: Patient Outcomes

- Better hypertension control, but little effect on anticoagulation therapy
- Reduced referrals, more community management
- More efficient utilization of health care services
- No effect on patient satisfaction

# Delpierre et al., 2004\*

- Systematic review of studies (2000–2003) of computers in medical decision making
- EHR had to offer “online advice, or information or reminders specific to clinicians during the consultation”

\* Delpierre C, Cuzin L, Fillaux J, Alvarez M, Massip P, Lang T. A systematic review of computer-based patient record systems and quality of care: more randomized clinical trials or a broader approach? *Int J Qual Health Care* 2004;16(5):407-16.



# Delpierre et al., 2004: Results

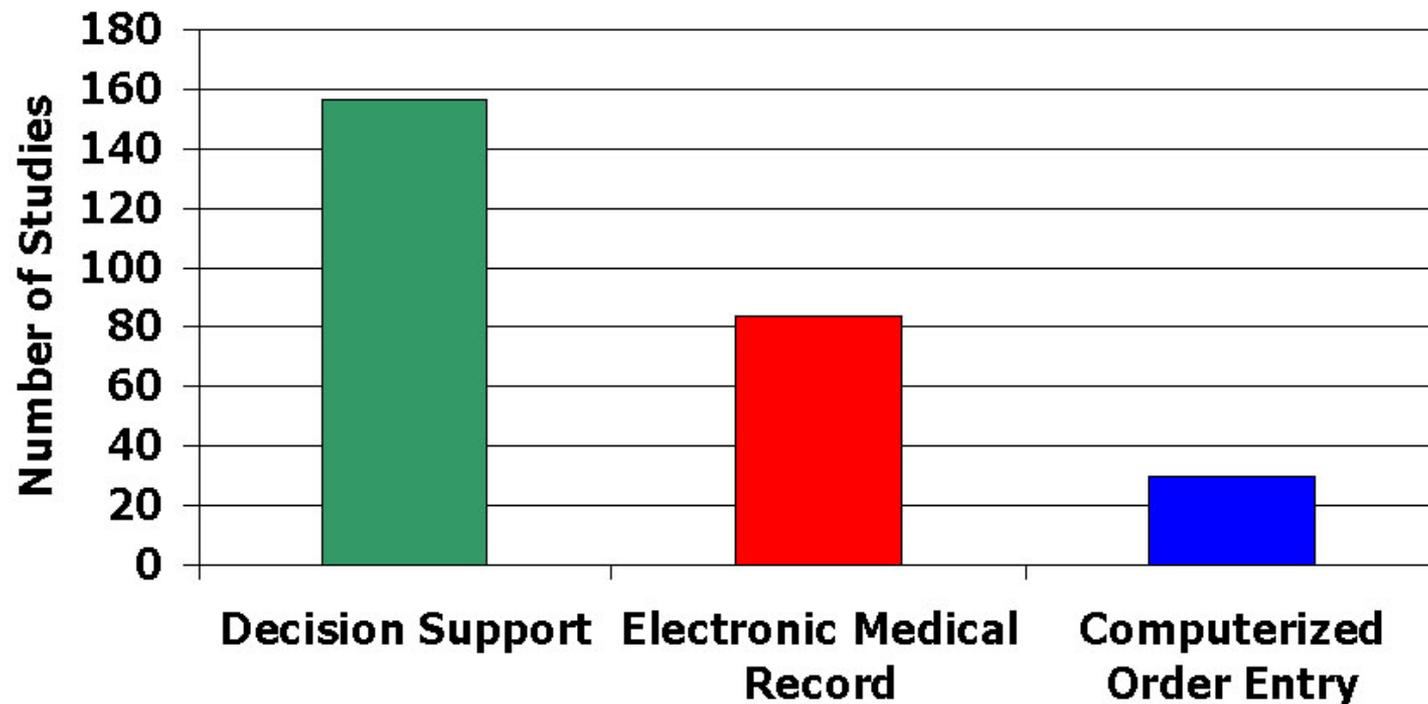
- Twenty-six articles
- Positive impact on
  - Preventive care (3/3 studies)
  - Practice and guidelines (6/12 studies)
  - Patient outcomes (0/6 studies)
- Increased user and patient satisfaction

# Shekelle, Morton, and Keeler, 2006\*

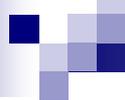
- Systematic review 1995–2003
- Costs, benefits, and barriers to implementing HIT
- Limited generalizability of results
- Ongoing database on AHRQ Web site

\* Shekelle PG, Morton SC, Keeler EB. Costs and benefits of health information technology. Evidence Report/Technology Assessment No. 132. (Prepared by the Southern California Evidence-based Practice Center under Contract No. 290-02-0003.) AHRQ Publication No. 06-E006. Rockville, MD: Agency for Healthcare Research and Quality. April 2006.

# Shekelle, Morton, and Keeler: Frequent Study Topics\*

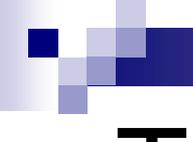


\* There were 256 studies; topics are not mutually exclusive.



# Shekelle, Morton, and Keeler: Results

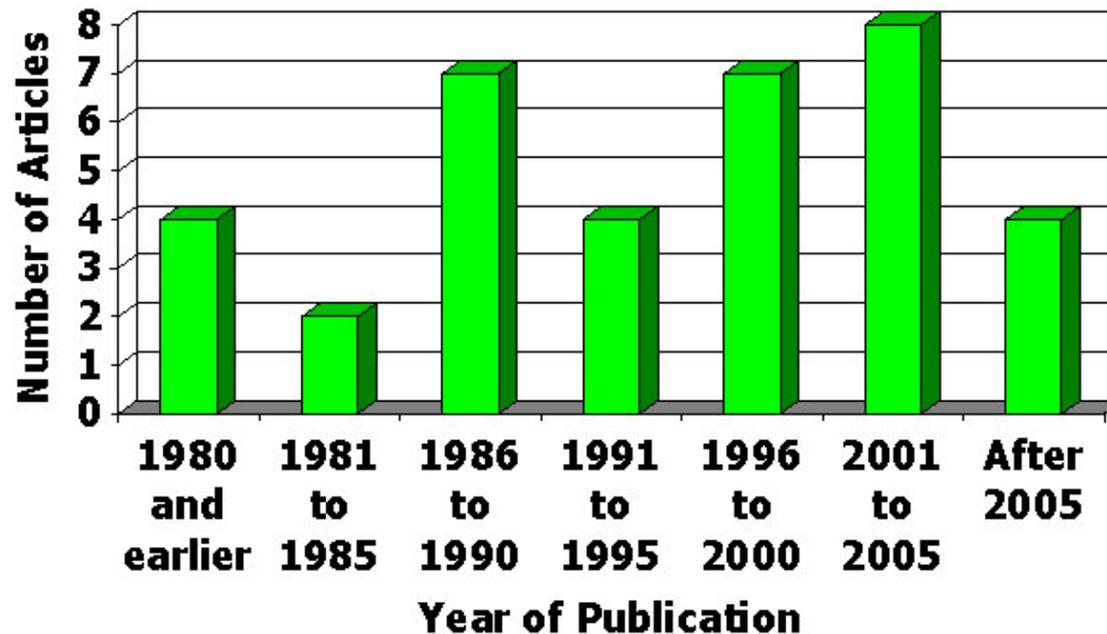
“...we identified no study or collection of studies, outside of those from a handful of HIT leaders, that would allow a reader to make a determination about the generalizable knowledge of the system’s reported benefit.”



# The AHRQ Interactive Database of HIT Evidence

- <http://healthit.ahrq.gov/tools/rand>
- As of 9/17/2009, it has 625 studies
- Searchable by study design, HIT topic, IOM functionality, outcome
- Thirty-six citations of randomized controlled trial (RCT) or cost–benefit analysis (CBA) studies of EHR impact on quality or safety in ambulatory setting

# AHRQ HIT Evidence Database: EHRs in Ambulatory Care\*



\* Articles included in database as of 9/15/2009 about impact of EHRs on quality or safety in the ambulatory setting using RCT or CBA methodology.

# Examples of Studies

Implementing clinical guidelines in the treatment of hypertension in general practice. Evaluation of patient outcome related to implementation of a computer-based clinical decision support system

Assessment of decision support for blood test ordering in primary care—a randomized trial.

General practitioner records on computer—handle with care.

Effect of computerised evidence-based guidelines on management of asthma and angina in adults in primary care: cluster randomised controlled trial.

A controlled trial to improve delivery of preventive care: physician or patient reminders?

Electronic medical record reminder improves osteoporosis management after a fracture: a randomized controlled trial.

Improving hypertension control: impact of computer feedback and physician education

Effectiveness of computer-generated reminders for increasing discussions about advance directives and completion of advance directive forms. A randomized, controlled trial.

# Examples of Studies

Can computer-generated evidence-based care suggestions enhance evidence-based management of asthma and chronic obstructive pulmonary disease? A randomized, controlled trial.

The effect on test ordering of informing physicians of the charges for outpatient

Evaluation of laboratory monitoring alerts within a computerized physician order

ent Randomised trial of monitoring, feedback, and management of care by telephone to improve treatment of depression in primary care.

Improving residents' compliance with standards of ambulatory care: results from the VA Cooperative Study on Computerized Reminders.

A randomized trial of electronic clinical reminders to improve quality of care for diabetes and coronary artery disease.

Computerized display of past test results.

Effect on outpatient testing

Improving blood pressure control through provider education, provider alerts, and patient education: a cluster randomized trial.

Delayed feedback of physician performance versus immediate reminders to perform preventive care. Effects on physician compliance.

# Examples of Studies

Use of reminders to increase compliance with tetanus booster vaccination.

Randomised controlled trial of computer-held medical records in hypertensive patients.

Physician response to computer reminders.

A computerized intervention to decrease the use of calcium channel blockers in hypertension.

Using electronic patient records to inform strategic decision making in primary care.

A randomized trial using computerized decision support to improve treatment of major depression in primary care.

Computerized reminders to encourage cervical screening in family practice.

Comparison of three methods of recalling patients for influenza vaccination.

Evaluation of computer-based clinical decision support system and risk chart for management of hypertension in primary care: randomised controlled trial.

# Examples of Studies

Requiring physicians to respond to computerized reminders improves their compliance with preventive care protocols.

Reminders to physicians from an introspective computer medical record. A 2-year randomized trial.

Effects of computer reminders for influenza vaccination on morbidity during influenza epidemic

Use of a computer to detect and respond to clinical events: its effect on clinician behavior.

Randomized controlled trial of an informatics-based intervention to increase statin prescription for secondary prevention of coronary disease

The effect of a computer-generated, patient-held medical record summary and/or a written personal health record on patients' attitudes, knowledge and behaviour concerning health promotion.

A randomized outpatient trial of a decision-support information technology tool.

Protocol-based computer reminders, the quality of care and the non-perfectability of man.

A randomized trial of computerized reminders for blood pressure screening in primary care.



# As Previously Noted...

- Studies frequently dealt with impact of specific components of EHRs
  - decision support
  - clinical reminders
- And particular topics
  - hypertension
  - prevention
  - depression

# Example: Montgomery et al., 2000\*

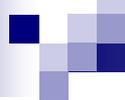
- There were 614 patients with high blood pressure
- British primary care practices
- Computerized decision support did not appear to reduce cardiovascular risk compared with manual chart
- But *all patients already had an EHR*

\* Montgomery AA, Fahey T, Peters TJ, MacIntosh C, Sharp DJ. Evaluation of computer based clinical decision support system and risk chart for management of hypertension in primary care: randomised controlled trial. *BMJ* 2000;11:686-90.

# Example: Palen et al., 2006\*

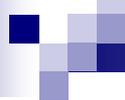
- Physician-level randomized trial of “nonintrusive” alerts
- Existing EHR/CPOE system in managed care organization
- No differences between intervention and control physicians in ordering recommended monitoring

\* Palen TE, Raebel M, Lyons E, Magid DM. Evaluation of laboratory monitoring alerts within a computerized physician order entry system for medication orders. *Am J Manag Care* 2006;12:389-95.



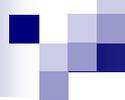
# Does Using an EHR Improve Quality of Care?

- Apparently, no study addressing the broad question has been published
- With reasonably high-quality methodology
- And some degree of generalizability



# What is “Quality of Health Care?”

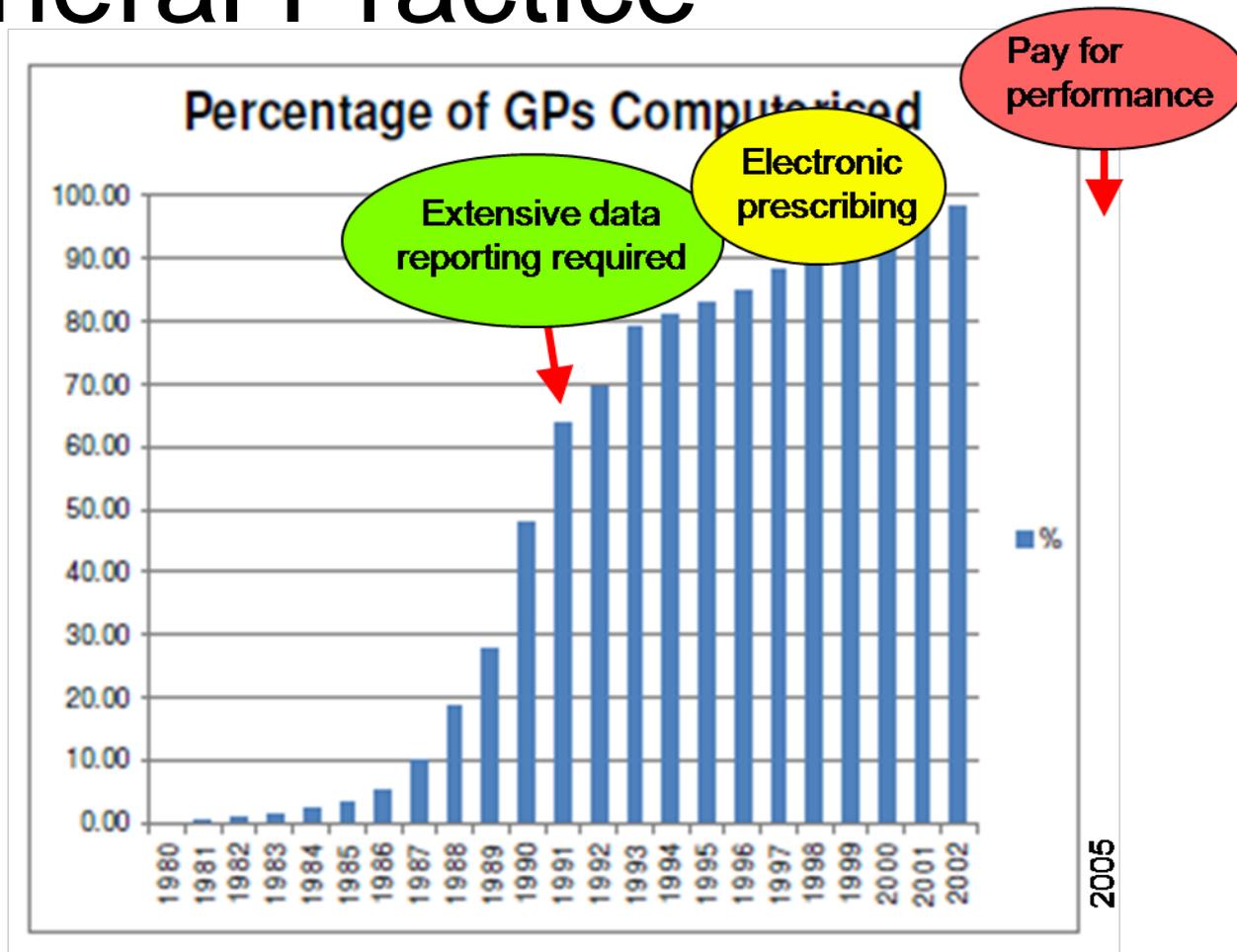
- Pub Med (NIH) definition: The levels of excellence which characterize the health service or health care provided based on accepted standards of quality
- National Quality Forum: no definition, but seems to be related to measurement
- IOM: health care should be safe, effective, patient centered, timely, efficient, and equitable



# The Best Current Evidence that EHRs Improve Quality

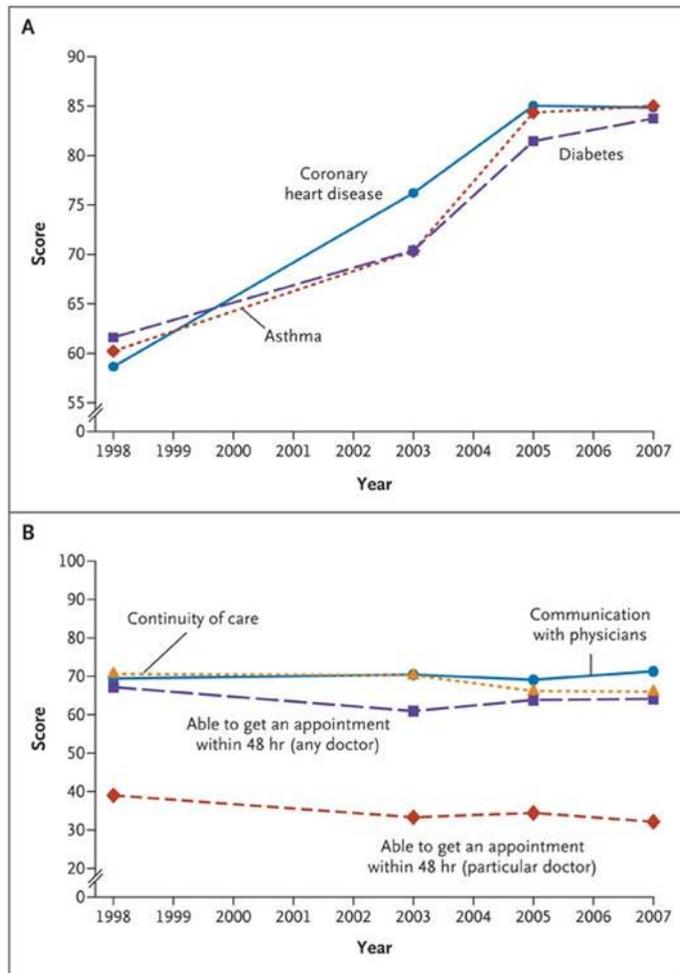
- Observations on large health care systems
- Multiple measures of quality
- Correlated with outcome information
- Examples: the U.K. National Health Service and the U.S. Department of Veterans Affairs

# National Health Service: EHRs in General Practice\*



\* Source: Hayes G, Shepherd I, Humphries R, Beer G, Carpenter GI, Asbridge J, et al. Independent review of NHS and Social Care IT. London: Conservative Party; 2009.

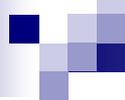
# United Kingdom: Measured Quality of Care



Campbell SM, Reeves D, Kontopantelis E, Sibbald B, Roland M. Effects of pay for performance on the quality of primary care in England. *N Engl J Med* 2009;361(4):368-78.

# Did EHRs Cause Improvement in Quality in the United Kingdom?

- No, but they were a *sine qua non*
- And use of EHRs helped bring improvements in practice that improved communication and safety
  - Electronic prescribing
  - Improved legibility
  - Standardized coding
  - Notes and e-mail



# UK Pay-for-Performance Scheme

## Quality Indicators for Family Practitioners in the United Kingdom

**2004/5**

Clinical Indicators:

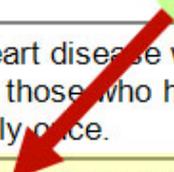
Coronary heart disease and heart failure  
Stroke and transient ischaemic attack  
Hypertension  
Diabetes  
Chronic obstructive pulmonary disease  
Epilepsy  
Hypothyroidism  
Mental health  
Asthma  
Cancer

# Examples of Quality Indicators

## Secondary Prevention in Coronary Heart Disease (CHD)

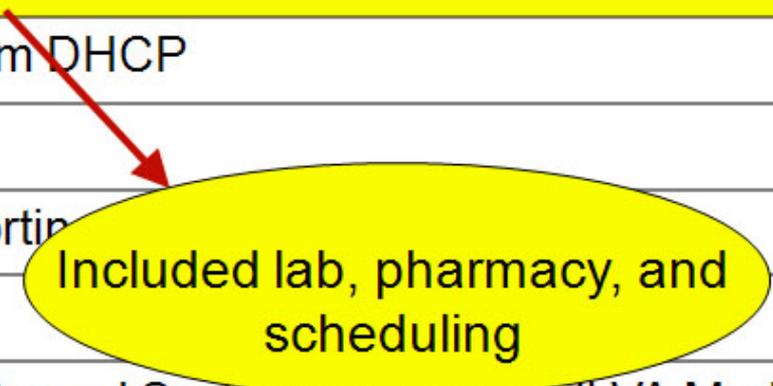
Indicator	Points	Payment Stages
<b>Records</b>		
CHD 1. The practice can produce a register of patients with coronary heart disease.	6	
<b>Diagnosis and Initial Management</b>		
CHD 2. The percentage of patients with newly diagnosed angina (diagnosed after 1 April 2003) who are referred for exercise testing and/or specialist assessment.	7	15–90%
<b>Ongoing Management</b>		
CHD 3. The percentage of patients with coronary heart disease whose notes record smoking status in the past 15 months, except those who have never smoked where smoking status need be recorded only once.	7	25–90%
CHD 4. The percentage of patients with coronary heart disease who smoke, whose notes contain a records that smoking cessation advice or referral to a specialist service, where available has been offered within the last 15 months.	4	25–70%
CHD 5. The percentage of patient with coronary heart disease whose notes have a record of blood pressure in the previous 15 months.	7	25–90%

How can a practice provide clinical documentation at this level of detail without an electronic record?

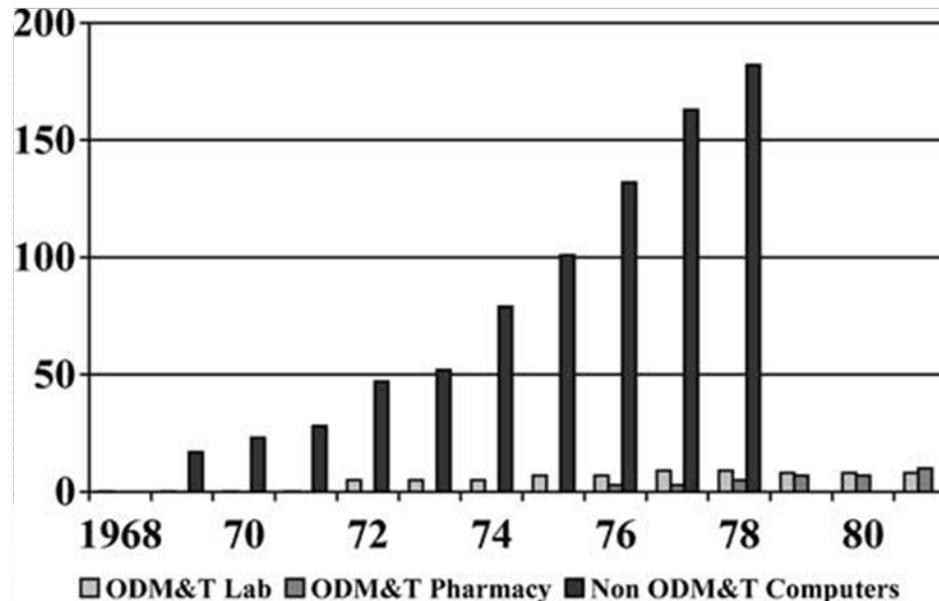


# Department of Veterans Affairs: VistA EHR

Year	Event
1978	"Underground railroad" of early enthusiasts
1982	Decentralized Hospital Computing Program (DHCP)
1988	DOD/CHCS derived from DHCP
1992	<u>VistA</u> imaging
1994	Order entry/results reporting
1996	DHCP becomes <u>VistA</u>
1997	Computerized Patient Record System (CPRS) in all VA Medical Centers
1998	CPRS graphical user interface (GUI)
2000	Bar code medication administration (BCMA)



# Growth of Medical Computing in the VHA 1968–1980



Source: Brown SH, Lincoln MJ, Groen PJ, Kolodner RM. VistA--U.S. Department of Veterans Affairs national-scale HIS. *Int J Med Inform* 2003;69(2-3):135-56.  
[http://www1.va.gov/cprsdemo/docs/VistA\\_Int\\_Jrnl\\_Article.pdf](http://www1.va.gov/cprsdemo/docs/VistA_Int_Jrnl_Article.pdf)

# Sources of VistA History Information

Department of Veterans Affairs Office of Enterprise Development. VistA development history. In: VistA-HealthVet Monograph 2008 - 2009; 2008. p. 128.

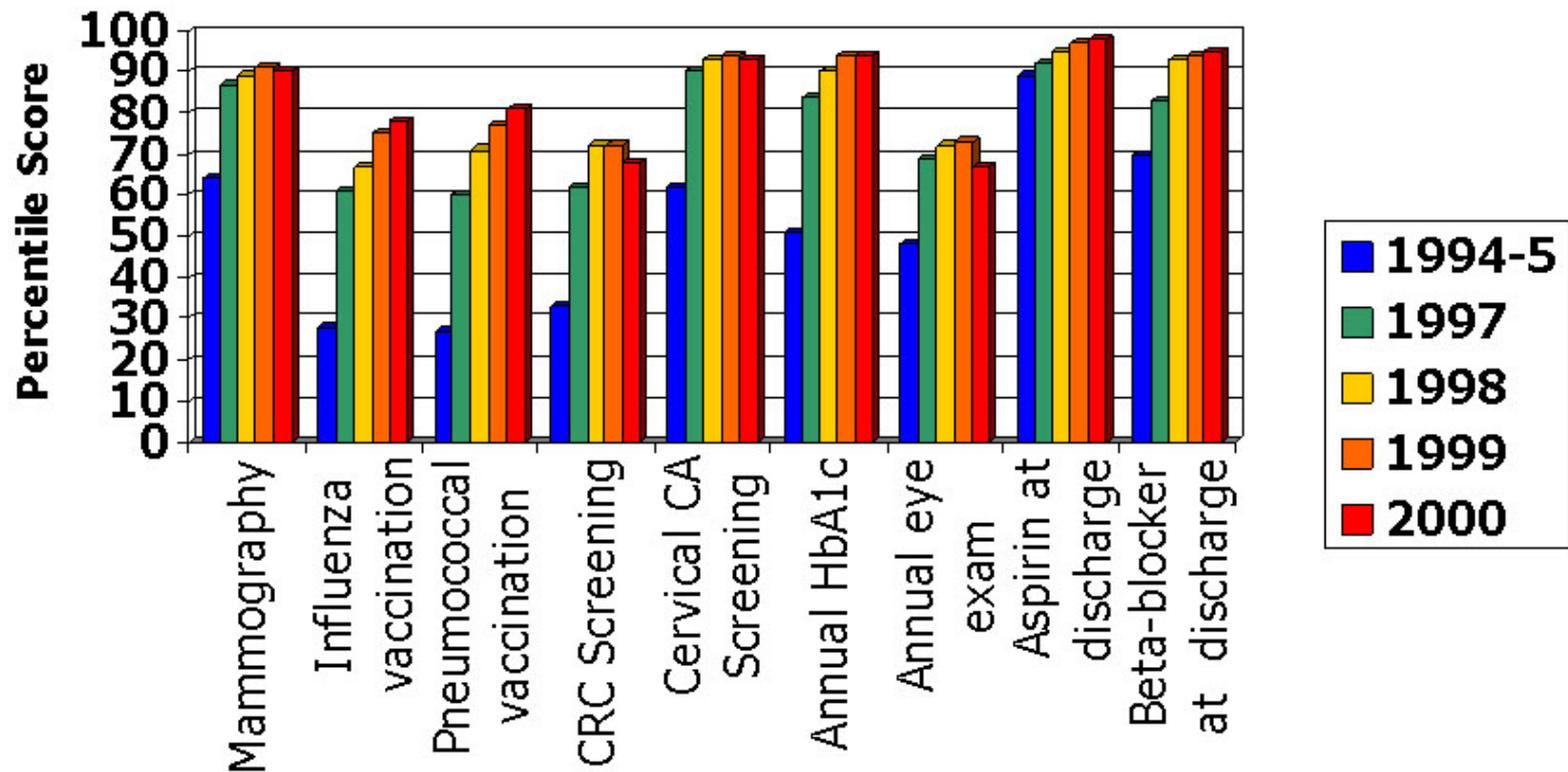
[http://www.va.gov/VISTA\\_MONOGRAPH/docs/2008\\_2009\\_VistAHealthVet\\_Monograph\\_FC\\_0309.doc](http://www.va.gov/VISTA_MONOGRAPH/docs/2008_2009_VistAHealthVet_Monograph_FC_0309.doc)

Rappaport S. Toward the intelligent electronic health record - The VA experience. Accessed on 9/23/2009: Johns Hopkins University School of Medicine, Division of Health Sciences Informatics at

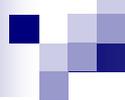
<http://dhsi.med.jhmi.edu/content/ehr.ppt>.

Brown SH, Lincoln MJ, Groen PJ, Kolodner RM. VistA--U.S. Department of Veterans Affairs national-scale HIS. Int J Med Inform 2003;69(2-3):135-56. [http://www1.va.gov/cprsdemo/docs/VistA\\_Int\\_Jrnl\\_Article.pdf](http://www1.va.gov/cprsdemo/docs/VistA_Int_Jrnl_Article.pdf)

# VHA National Quality Indicator Scores 1994–2000



Source: Jha AK, Perlin JB, Kizer KW, Dudley RA. Effect of the transformation of the Veterans Affairs Health Care System on the quality of care. *N Engl J Med* 2003;348(22):2218-27.



# Did EHRs Cause the VHA's Quality Improvement?

- Not by themselves, but it is hard to imagine accomplishing it without VistA
- According to Jha et al. (2003), one possible explanation for performance improvement was: “Critical process improvements, such as an integrated, comprehensive electronic medical-record system, were instituted at all VA medical centers.”

# Rain on the Parade: Linder et al., 2007\*

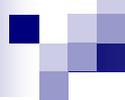
- Studied EHR use associated with quality via a national survey
- 17 quality indicators
- Physician offices self-reported EHR use
- “As implemented, EHRs were not associated with better quality ambulatory care.”

\* Linder JA, Ma J, Bates DW, Middleton B, Stafford RS. Electronic health record use and the quality of ambulatory care in the United States. Arch Intern Med 2007;167(13):1400-5.

# More Rain in the Forecast: Keyhani et al., 2008\*

- Used improved survey that identified components of EHR in physician offices
- Blood pressure control+4 chronic conditions
- Physician offices self-reported EHR use
- “We found no consistent association between blood pressure control, management of chronic conditions, and specific EHR components.”

\* Keyhani S, Hebert PL, Ross JS, Federman A, Zhu CW, Siu AL. Electronic health record components and the quality of care. *Med Care* 2008;46(12):1267-72.



# Meaningful Use

**A focus on use, not technology.** The ability to achieve health and health care transformation requires a focus on how EHR technology can be used in a meaningful way. It is one thing to attest to having acquired a certified product, and it is quite another matter to reflect that the product is being used in its complete and intended manner to achieve quality outcomes, health status improvement, and control in costs.\*

\* National Committee on Vital and Health Statistics. Observations on “Meaningful Use” of Health Information Technology. Accessed at National Center for Health Statistics at <http://ncvhs.hhs.gov/090428rpt.pdf> on 9/24/2009.

# Measuring Quality Data from an EHR

## The Challenge of Measuring Quality of Care From the Electronic Health Record

Carol P. Roth, RN, MPH  
Yee-Wei Lim, MD, PhD  
Joshua M. Pevnick, MD  
Steven M. Asch, MD, MPH  
Elizabeth A. McGlynn, PhD

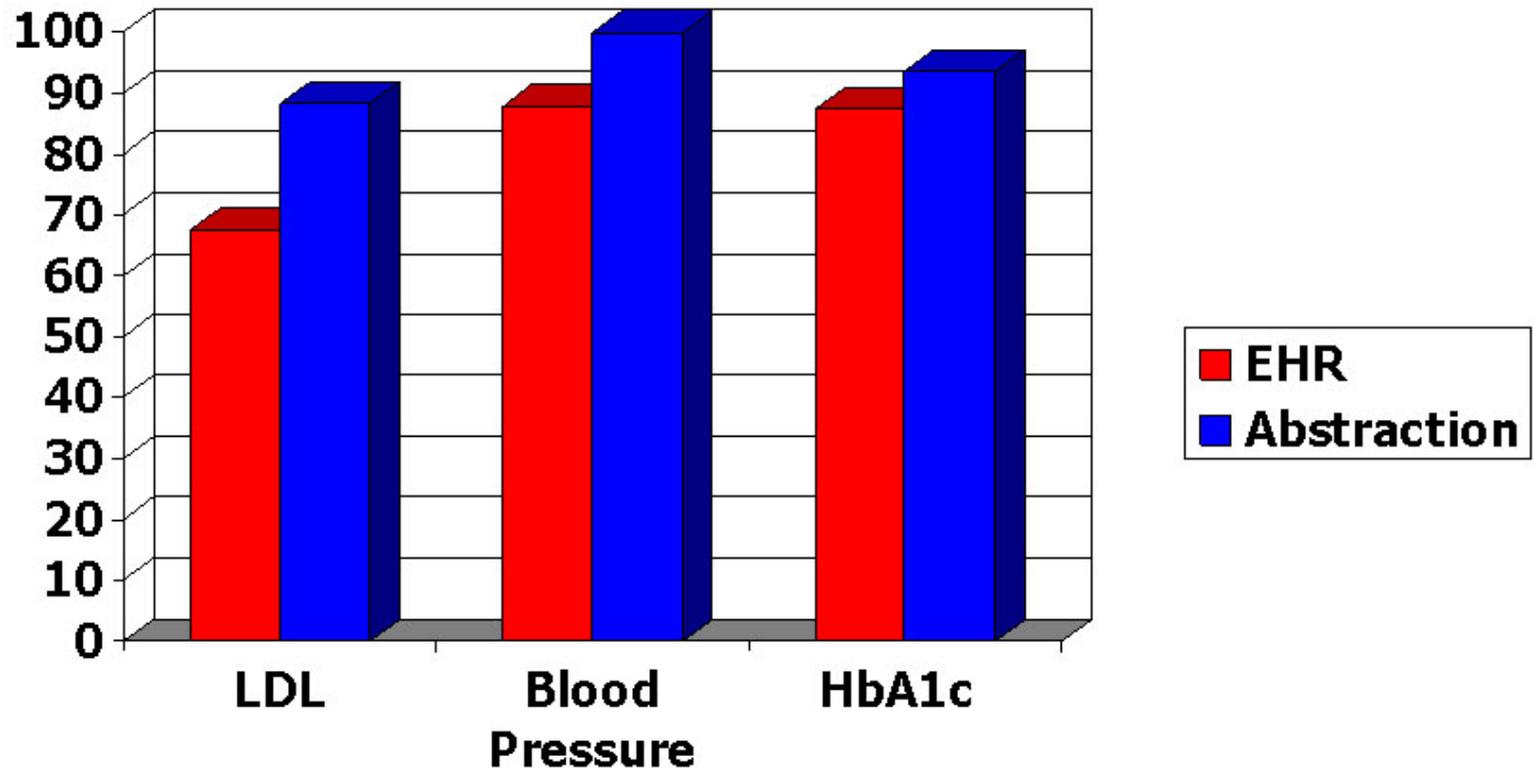
Amer J Med Qual September/October 2009;  
24(5):385-394

The electronic health record (EHR) is seen by many as an ideal vehicle for measuring quality of health care and monitoring ongoing provider performance. It is anticipated that the availability of EHR-extracted data will allow quality assessment without the expensive and time-consuming process of medical record abstraction. A review of the data requirements for the indicators in the Quality Assessment Tools system suggests that only about a third of the indicators would be readily accessible from EHR data. Other factors involving complexity of required data elements, provider documentation habits, and EHR variability make the task of quality measurement more difficult than may be appreciated. Accurately identifying eligible cases for quality assessment

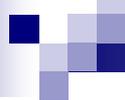
### INTRODUCTION

Recent studies documenting the suboptimal quality of care delivered to pediatric, adult, and geriatric patients demonstrate the need for health care quality improvement.<sup>1-4</sup> Although these studies relied on manual chart review, it is anticipated that clinical data contained in electronic health records (EHRs) will eventually allow automated ongoing comprehensive quality assessment.<sup>5</sup> Automated quality assessment will facilitate real-time clinical decision support, continuous monitoring of quality of care, and ongoing quality improvement. Furthermore, automating this process will drastically reduce the cost of comprehensive health care quality assessment, such that the

# VHA: Percent of Time Specified Item Found



Source: Goulet JL, Erdos J, Kancir S, Levin FL, Wright SM, Daniels SM, et al. Measuring performance directly using the veterans health administration electronic medical record: a comparison with external peer review. *Med Care* 2007;45(1):73-9.

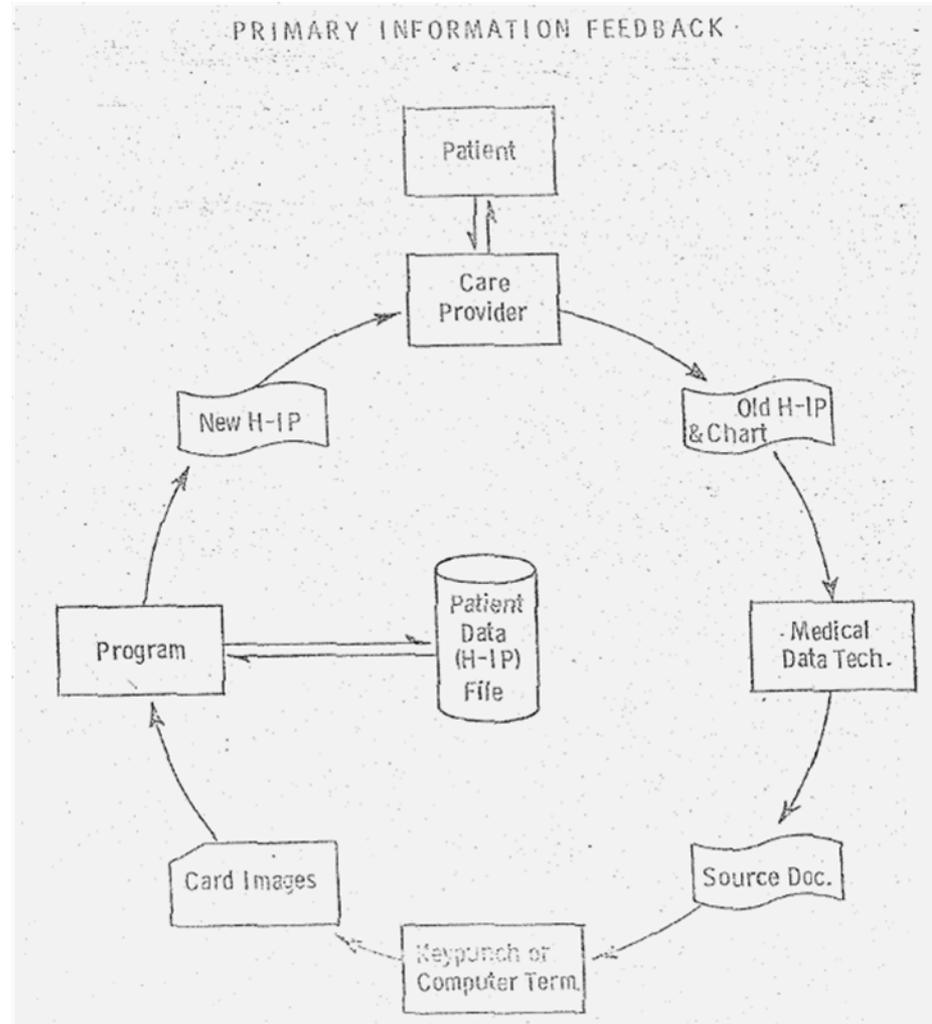


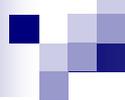
# Why am I Persuaded that EHRs Have Improved Quality?

- **Feedback**

- Improves quality of industrial processes
- A key element of the successful cases I've presented
- Audit and feedback as a QI technique reliably produces improvement, even without an EHR

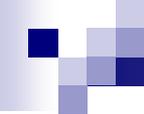
# Feedback in a Primitive EHR System (1974)





# Conclusions

- EHRs are tools that can help improve quality
- But quality improvement requires effective use of an EHR, including attention to coding and population management features
- And may also require an environment where quality is valued and rewarded



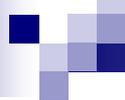
# Questions? Comments?

*Thank you* for coming to this presentation

Contact info:

[cschade@wvmi.org](mailto:cschade@wvmi.org)

(304) 346 9864 x 2243



# Module 1: Discussion

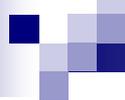
- Do your Medicaid/CHIP agency's health IT capabilities support quality and business improvement?
- If so, what quality and business improvement processes are you working on?
- If not, what plans do you have to enhance your agency's capacity to use health IT to support quality improvement and business improvement?



# Module 2: The Open-source Approach to Quality Improvement: A West Virginia Health Improvement Initiative

Presented by:

Sarah Chouinard, MD, Chief Medical Advisor,  
Community Health Network of West Virginia (CHN WV)  
& Medical Director for Primary Care Systems, Inc.



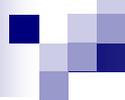
# Please Keep in Mind...

“Every system is perfectly designed to achieve the results it achieves”

–IOM’s Don Berwick, MD

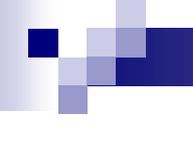
“Attention is the currency of leadership”

–Harvard’s Ronald Heifetz, MD



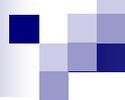
# EHRs—eCharts or Quality Improvement Tools?

- With rare exception, every EHR on the market was designed before policy makers began thinking about meaningful use.
- EHRs have largely been crafted to digitize clinical practice as we have known it for the last few decades.
- Clinicians traditionally have not been trained to function as part of a care team.
- Clinicians have not focused on populations of patients but rather on caring for individuals.



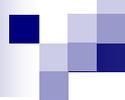
# A *Clinician*-centric EHR Is...

- An integrated patient health record *for provider use*
- Traditional goal of HIT is to e-display what you already should know in a more usable format
  - Health summary
  - Reminders
  - Lab and reference lab interface data
  - Immunizations and state immunization sharing data
  - Pharmacy
  - Allergies



# *A Population and Patient-centered EHR Has/Is...*

- Software views/applications that allow for ‘on the fly’ extraction data for analysis, evaluation, and improved performance
- More powerful than chart auditing
- Includes population and public health measures
- Used for achieving meaningful use



# *Do I Need to Think about Meaningful Use?*

YES!

Twenty-two objectives for EHRs by 2011. The objectives call for qualified EHRs to

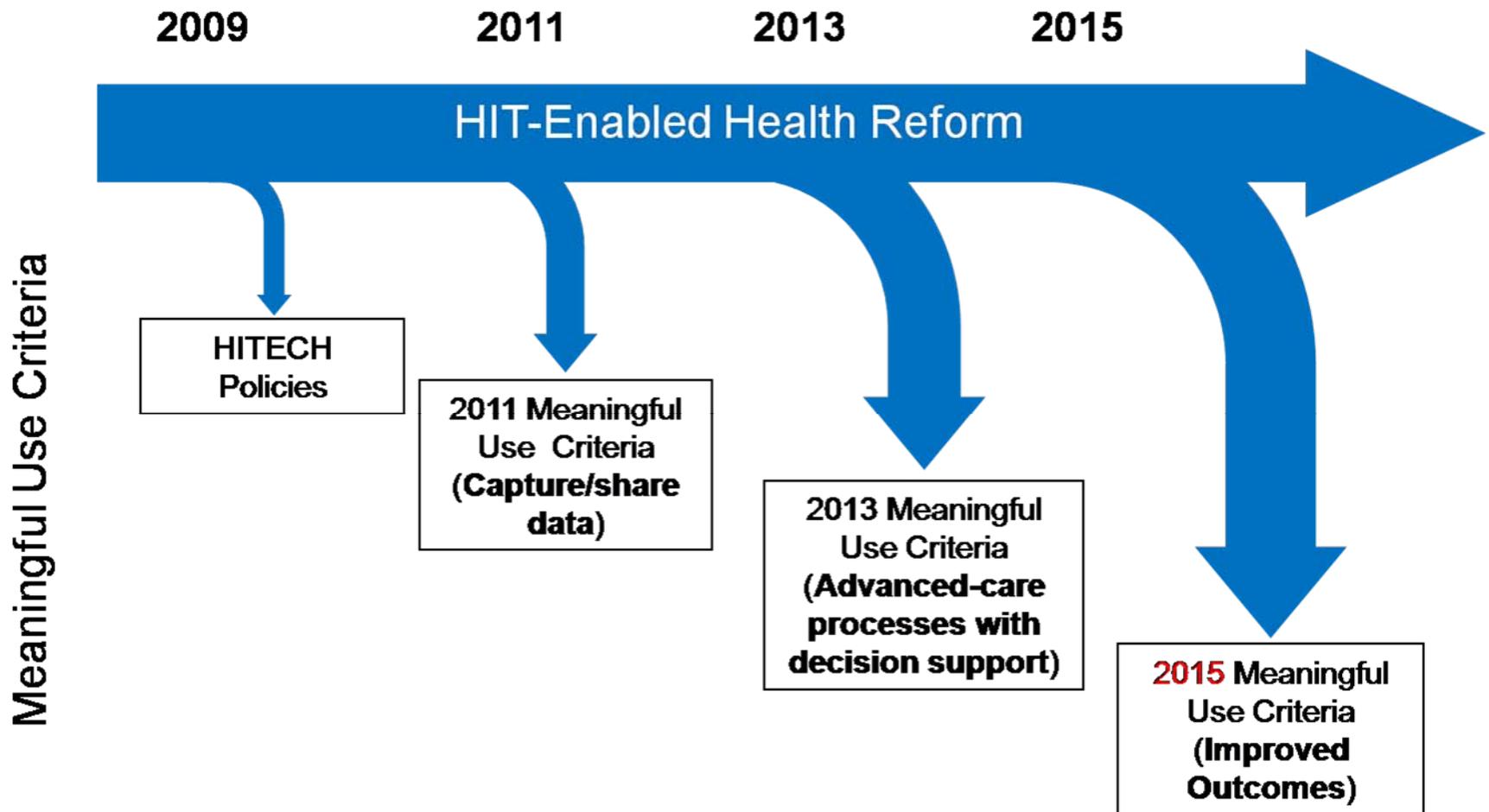
- Allow patients to access clinical information.
- Comply with state and federal privacy, security, and data sharing regulations.
- Document patient progress and provide clinical summaries.
- Exchange critical information with other care providers.
- Implement drug interaction safeguards.
- Send patient reminders about follow-up and preventive care.
- Submit immunization and laboratory data to relevant public health registries.
- Use computerized physician order entry systems to transmit prescriptions.

# HIT-enabled Health Reform

*Achieving Meaningful Use*

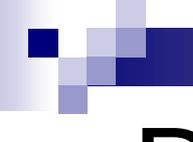
*Paul Tang, Chair*

*George Hripcsak, Co-chair HHS Policy Committee*



# Meaningful Use Matrix: June 16, 2009

Health Outcomes Policy Priorities	Care Goals	2011 Objectives <i>Goal is to electronically capture in coded format and to report health information and to use that information to track key clinical conditions</i>	2011 Measures	2013 Objectives <i>Goal is to guide and support care processes and care coordination</i>	2013 Measures	2015 Objectives <i>Goal is to achieve and improve performance and support care processes and on key health system outcomes</i>	2015 Measures
<b>Improve quality, safety, efficiency, and reduce health disparities</b>	<ul style="list-style-type: none"> <li>• Provide access to comprehensive patient health data for patient's health care team</li> <li>• Use evidence-based order sets and CPOE</li> <li>• Apply clinical decision support at the point of care</li> <li>• Generate lists of patients who need care and use them to reach out to patients (e.g., reminders, care instructions, etc)</li> <li>• Report to patient registries for quality improvement, public reporting, etc</li> </ul>	<ul style="list-style-type: none"> <li>• Use CPOE for all order types including medications [OP, IP]</li> <li>• Implement drug-drug, drug-allergy, drug-formulary checks [OP, IP]</li> <li>• Maintain an up-to-date problem list [OP, IP]</li> <li>• Generate and transmit permissible prescriptions electronically (eRx) [OP]</li> <li>• Maintain active medication list [OP, IP]</li> <li>• Maintain active medication allergy list [OP, IP]</li> <li>• Record primary language, insurance type, gender, race, ethnicity [OP, IP]</li> <li>• Record vital signs including height, weight, blood pressure [OP, IP]</li> <li>• Incorporate lab-test results into EHR [OP, IP]</li> <li>• Generate lists of patients by specific condition to use for quality improvement, reduction of disparities, and outreach [OP]</li> <li>• Send reminders to patients per patient preference for preventive /follow up care [OP, IP]</li> </ul>	<ul style="list-style-type: none"> <li>• Report quality measures, including:               <ul style="list-style-type: none"> <li>- % diabetics with A1c under control [OP]</li> <li>- % hypertensive patients with BP under control [OP]</li> <li>- % of patients with LDL under control [OP]</li> <li>- % of smokers offered smoking cessation counseling [OP, IP]</li> </ul> </li> <li>• % of patients with recorded BMI [OP]</li> <li>• % eligible surgical patients who received VTE prophylaxis [IP]</li> <li>• % of orders entered directly by physicians through CPOE</li> <li>• Use of high-risk medications in the elderly [OP, IP]</li> <li>• % of patients over 50 with annual colorectal cancer screenings [OP]</li> </ul>	<ul style="list-style-type: none"> <li>• Use evidence-based order sets [OP, IP]</li> <li>• Record clinical documentation in EHR [IP]</li> <li>• Generate and transmit permissible prescriptions electronically [IP]</li> <li>• Manage chronic conditions using patient lists and decision support [OP, IP]</li> <li>• Provide clinical decision support at the point of care (e.g., reminders, alerts) [OP, IP]</li> <li>• Report to external disease (e.g., cancer) or device registries [OP (esp. specialists)] [IP]</li> <li>• Conduct medication administration using bar coding [IP]</li> </ul>	<ul style="list-style-type: none"> <li>• Additional quality reports using HIT-enabled NQF-endorsed quality measures [OP, IP]</li> <li>• % of all orders entered by physicians through CPOE [OP, IP]</li> <li>• Potentially preventable Emergency Department Visits and Hospitalizations [IP]</li> <li>• Inappropriate use of imaging (e.g. MRI for acute low back pain) [OP, IP]</li> <li>• Other efficiency measure (TBD) [OP, IP]</li> </ul>	<ul style="list-style-type: none"> <li>• Achieve minimal levels of performance on quality, safety, and efficiency measures</li> <li>• Implement clinical decision support for national high priority conditions [OP, IP]</li> <li>• Medical device interoperability [OP, IP]</li> <li>• Multimedia support (e.g. x-rays) [OP, IP]</li> </ul>	<ul style="list-style-type: none"> <li>• Clinical outcome measures (TBD) [OP, IP]</li> <li>• Efficiency measures (TBD) [OP, IP]</li> <li>• Safety measures (TBD) [OP, IP]</li> </ul>



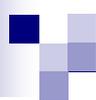
# RPMS for Community Health...our EHR

- Our EHR leverages the work that Indian Health Services has done with their system, Resource and Patient Management System (RPMS), which is based on a VistA platform, with support from Medsphere System Corporation.
- Our network of community health centers (CHCs) is using and adapting that software for our practice setting.



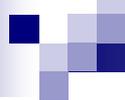
# RPMS (or *any* EHR) Disclaimer

- Software is **not** a solution.
- Software is **only** a *tool* to assist clinicians (and their facility) in better serving their patients.
- Software can **help** clinicians (and patients) identify problems
  - with clinical documentation process,
  - with clinical care and quality measures, and
  - with populations/communities.



# EHR Infrastructure and Reporting

- Common clinical outcomes reporting system
- Common clinical information system
- Predictive modeling and claims-based analytics
- Provider performance monitoring and feedback
- Shared care plan development



# Words of Wisdom (after Learning the Hard Way)

- Focus on outcomes
- Begin with setting goals for the practice
- What are you trying to achieve?
  - Better diabetic control
  - Reduce medication errors
  - Improve patient cycle time
  - Improve patient self-management
  - Reduce tobacco use
  - Improve immunization rates



# Results

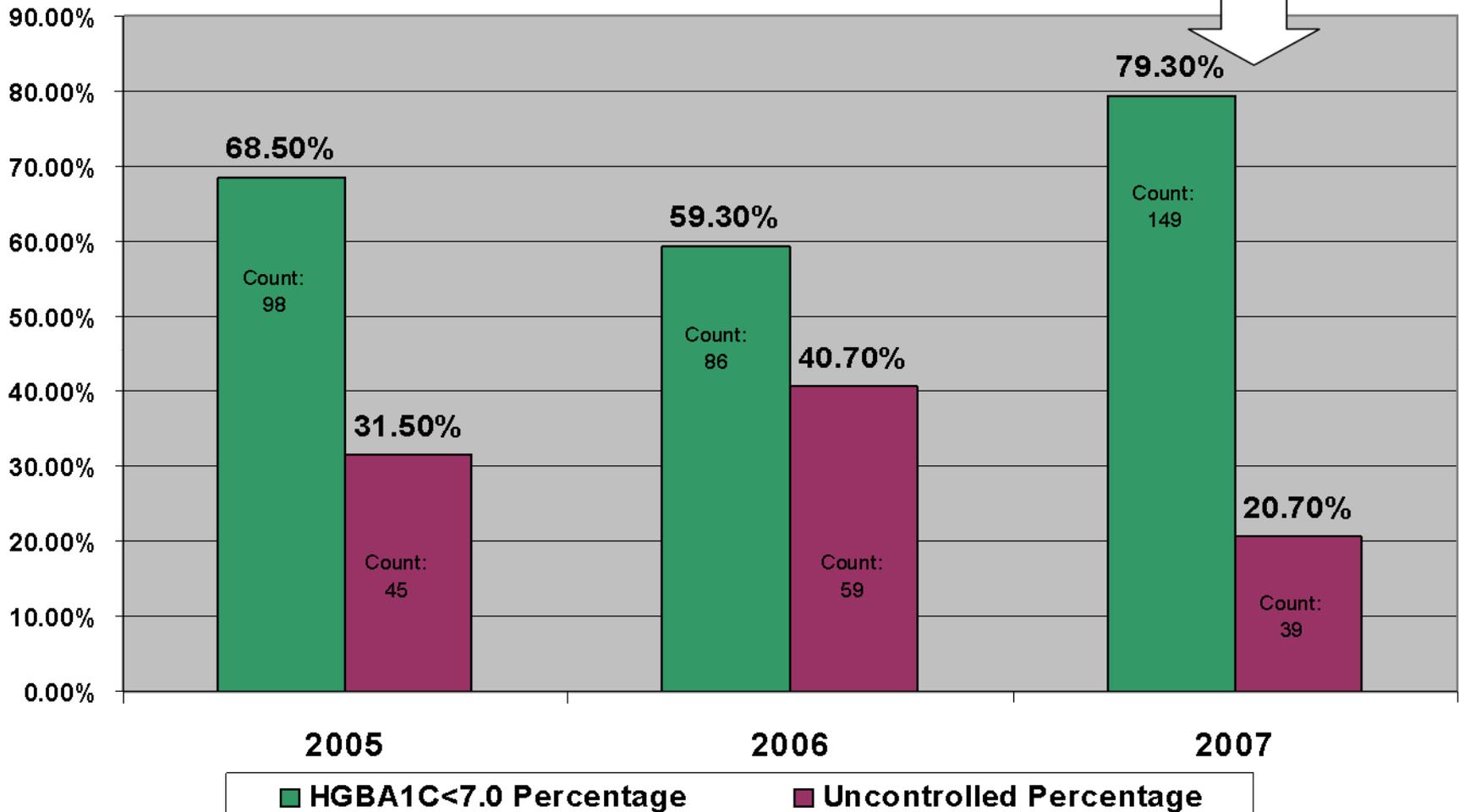
Improved health outcomes and  
Improved practice workflow

How did we get there?

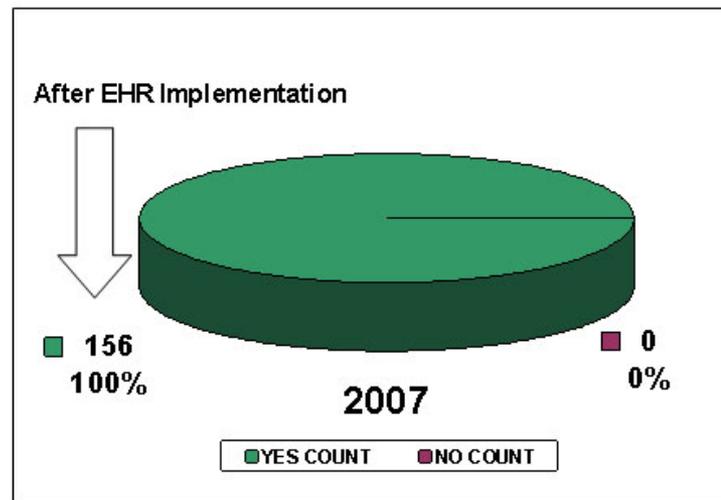
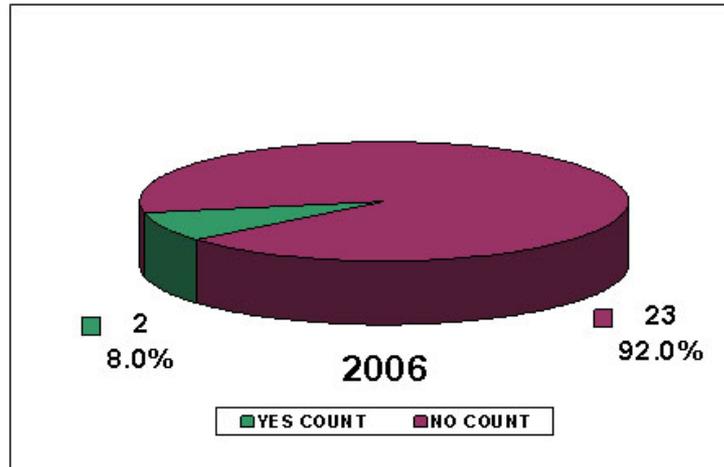
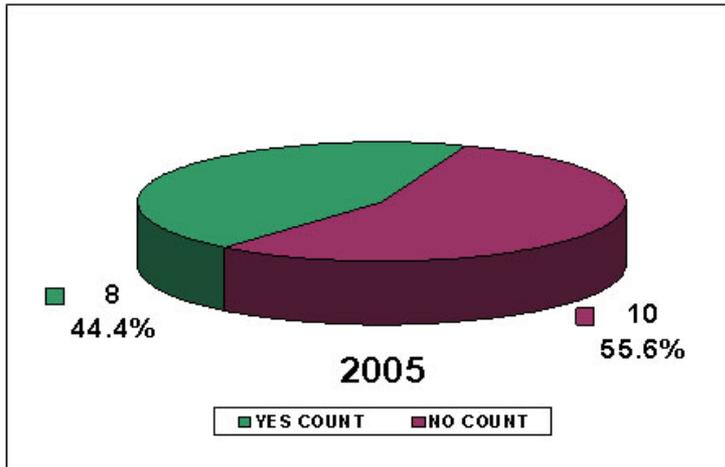
# Clay Primary Care Systems

## Diabetes HgBA1c

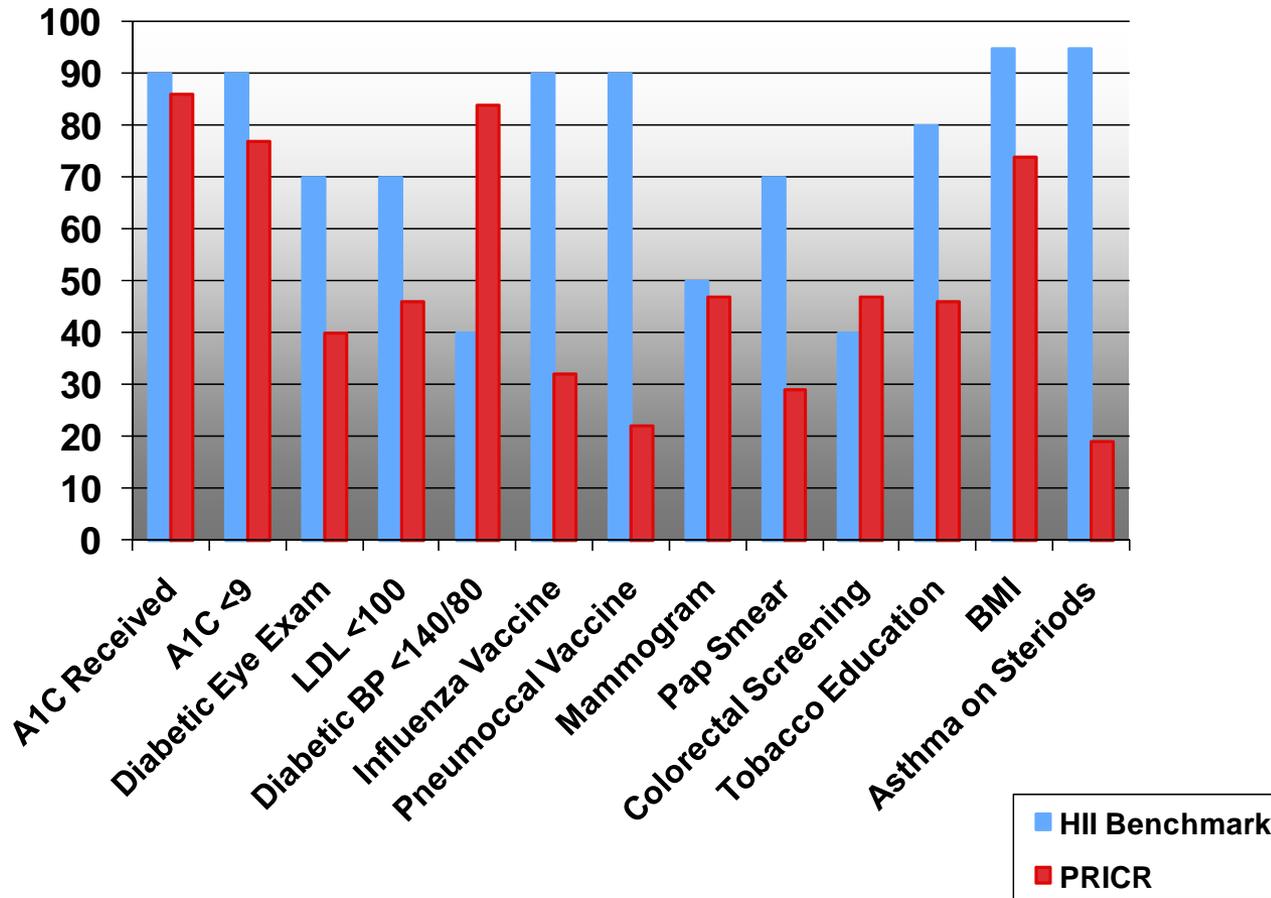
After EHR Implementation



# Obesity DX for Ages 2–19 (with and without counseling) 2005, 2006, and 2007



# Current Outcome Measures against Benchmarks





## Primary Care Diabetic Outcome Report #1A

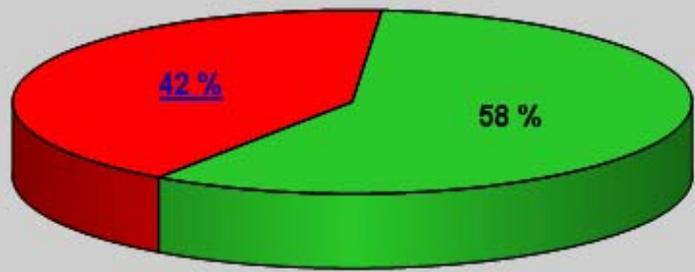
### Percentage of Patients who have had a Foot Exam

Report Selection: July 2009

Parameters

Select Report Date

July 2009



Patients having at least 1 Foot Exam in the last 12 months  
 Patients missing Foot Exam

Total Diabetics	Foot Exam	Missing Foot Exam
848	494	354

Apply

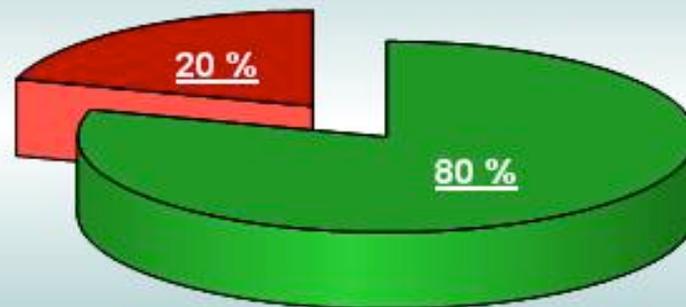
# Provider-specific Data

## Primary Care HII Outcome Report

Report Date: August 2009

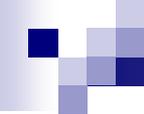
Primary Provider: KLAES,JANE

### Percentage of Patients with documented BMI



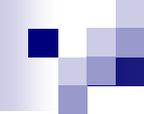
- Patients having documented BMI in the last 12 months
- Patients missing BMI

<u>Total Patients</u>	<u>BMI</u>	<u>Missing BMI</u>
397	316	81



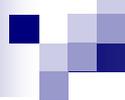
# Getting There...

- The only way we have found to get results is to create a workflow in the office around the concepts of Dr. Ed Wagner's Care Model and The Advanced Medical Home. It is the creation of our CARE TEAMS that drives us to meaningful use of our technology. The hardware and software are necessary tools to get to the desired destination, but it is the people using the technology in a deliberate, cooperative way that matters!



# Dr. Wagner's Care Model

- Improved outcomes...remember meaningful use?
- Productive interactions
- Self-management support
- Clinical decision support
- Clinical information system (EHR)
- Delivery system design



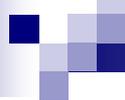
# The Team Approach

## Team Members

- Patient navigator (front desk)
- Work-up nurse
- Care manager
- Clinician
- Health educator for self-management support
- Clinical outreach coordinator
- Support staff—scanning, referrals, facilities

# The Patient-centered Medical Home—NCQA\*

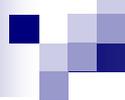
- What does PPC-PCMH measure?
  - Access and communication.
  - Patient tracking and registry functions.
  - Care management.
  - Patient self-management support.
  - Electronic prescribing.
  - Test tracking.
  - Referral tracking.
  - Performance reporting and improvement.
  - Advanced electronic communications.



# Who Does What and When and How?

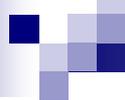
## Examples of Job Duties

- Patient navigator—cycle time
- Work-up nurse—tobacco cessation advice
- Care manager—chronic illness care reminders
- Clinician—delivery of medical care
- Health educator—extended education
- Outreach coordinator—lost to follow-up
- Others—specialists referrals



# Get On Board!

- The real key to success in EHR implementation is getting the people together to develop a plan for improving health outcomes for their patients. Involving the patients through a PHR is a great driver for engaging patients in self-management. Once patients and clinicians see what they can achieve by using technology to improve office efficiency, the health status of the community, and data exchange, we will have achieved the goal of electronic health records. The time is now.



# Module 2: Discussion

- Are providers participating in Medicaid/CHIP using EHRs that support quality improvement measures?
- If so, are any of those measures reported to your Agency?
- If so, how are you using those measures to promote quality improvement?

# Subscribe to the Listserv

- Subscribe to the AHRQ Medicaid—CHIP Listserv to receive announcement about program updates and upcoming TA Webinars and workshops.
- [Click here to subscribe to the listserv](#) – a prefilled message will open; enter your name after the text in the body of the message and send.
- Or follow the instructions below
  - Send an e-mail message to: [listserv@list.ahrq.gov](mailto:listserv@list.ahrq.gov).
  - On the subject line, type: **Subscribe**.
  - In the body of the message type: **sub Medicaid-SCHIP-HIT** and **your full name**. For example: sub Medicaid-SCHIP-HIT John Doe.
- You will receive a message asking you to confirm your intent to sign up.



# Comments and Recommendations for Future Sessions

- Please send your comments and recommendations for future sessions to the project's e-mail address:

[Medicaid-SCHIP-HIT@ahrq.hhs.gov](mailto:Medicaid-SCHIP-HIT@ahrq.hhs.gov)



# Project Information

Please send comments and recommendations to:

[Medicaid-SCHIP-HIT@ahrq.hhs.gov](mailto:Medicaid-SCHIP-HIT@ahrq.hhs.gov)

or call toll-free:

1-866-253-1627

<http://healthit.ahrq.gov/Medicaid-SCHIP>