Beyond VHA – Opportunities to Improve Health Care Delivery Across the U.S.

2nd Annual Conference of the McGill University Health Centre's Institute for Strategic Analysis and Innovation

August 20, 2009

Robert M. Kolodner, MD

Topics For My Brief Remarks

I. The USA eHealth Agenda & Health Reform

- Why is health Information Technology (IT) foundational to health reform?

II. How Did the US Department of Veterans Affairs Transform Itself

III. Closing Caveats

Direction of Impending Transformation of the Health Care "Sector" in the U.S.

- **Predominate health care model in U.S.**
  - "Disease Industrial Complex"
    - Pay for interventions
    - Provider-centered
  - (47+ million people *un*insured and more *under*insured)

- **Future**
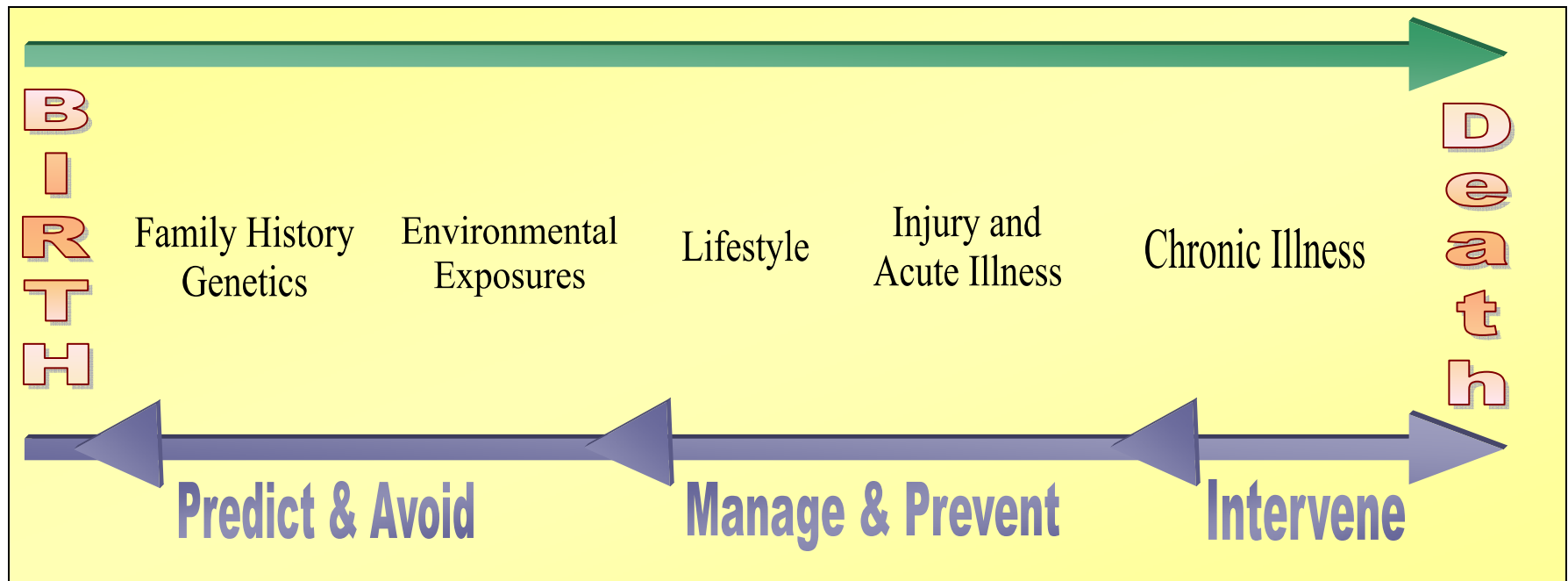 - HEALTH (and care)
    - Pay for results
    - Person-centered
      - Transformed models of care delivery
      - Reaches beyond the care delivery system
    - Health care as a "right"
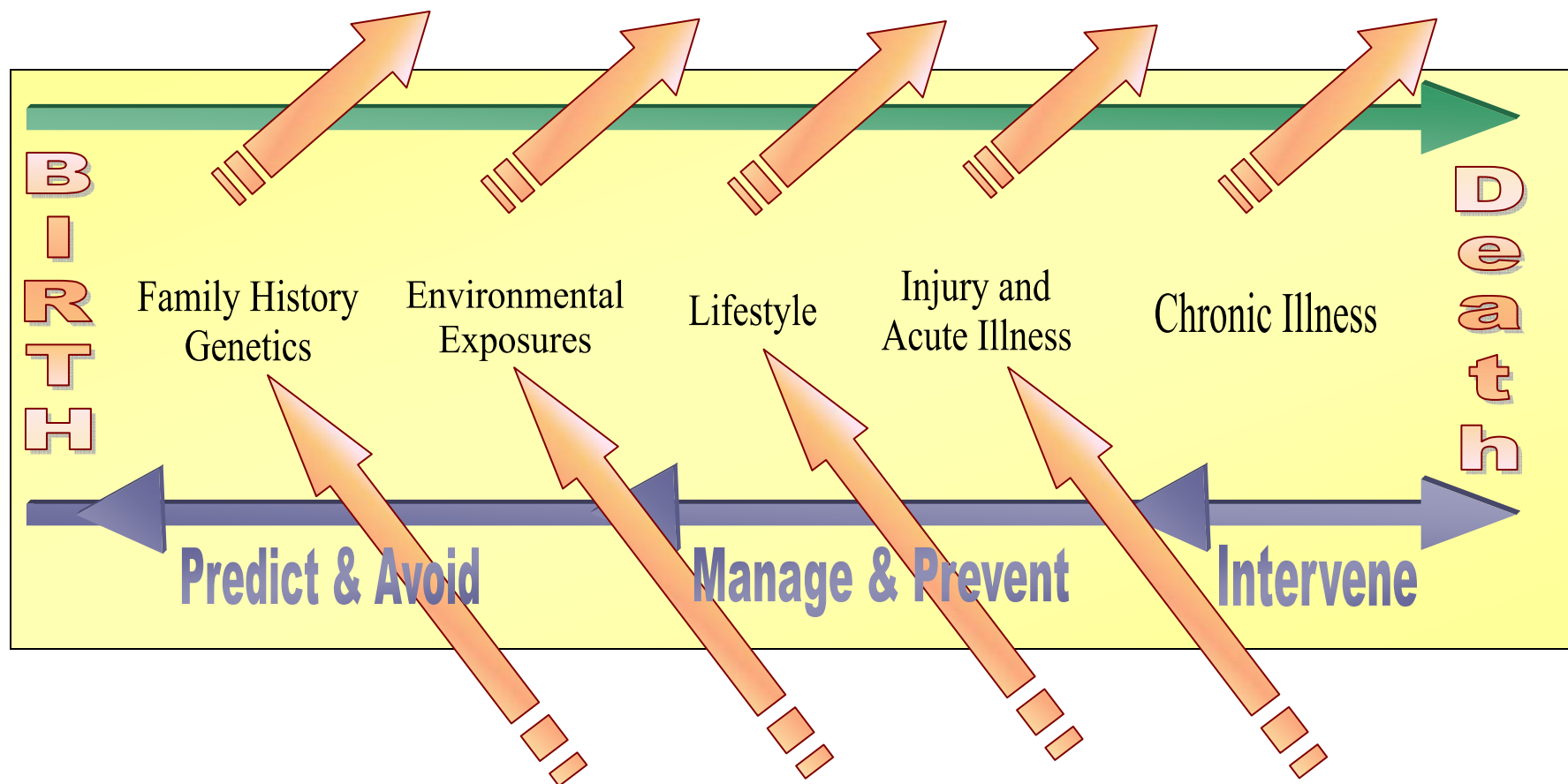
Perspective of Individuals on Future Health and Care

- ## Better Health
  - **Prevention**

- ## Increased Self-Care
  - **Personal Health support**

- ## Convenient Care
  - **Tele-care**
  - **Tele-monitoring**

- ## Coordinated Care
  - **Enable care at multiple sites**

Transforming Health and Care:
Moving from Treating to Preventing to Predicting[1]

BIRTH

Family History
Genetics

Environmental
Exposures

Lifestyle

Injury and
Acute Illness

Chronic Illness

Death

Predict & Avoid   **Manage & Prevent**   **Intervene**

1. Adapted from Perlin, Dr. Jonathan B, *Healthcare 1015 & beyond: Some Thoughts on Planning Ahead, p. 95*

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Population Health / Public Health

1. Adapted from Perlin, Dr. Jonathan B, *Healthcare 1015 & beyond: Some Thoughts on Planning Ahead, p. 95*

Section 1

The USA eHealth Agenda

Why is Health IT a Central Strategy for Health Care?

Current Lack of Information:

Higher Costs

- **Leads to 1 in 7 hospital admissions***
  - When care providers do not have access to previous medical records

- **12% of physician orders are not executed as written***

- **20% of laboratory tests unnecessary***
  - Requested because previous studies are not accessible

Avoidable Errors

- **Drug errors**
  - Complicate 1 in 6.5 hospitalizations
  - Occur in 1/20 outpatient Rxs

* President's IT Advisory Committee (*PITAC)*

Problems with Both Safety and Quality

Safety Problems

Quality Problems

©Uwe Kils. Used with permission.
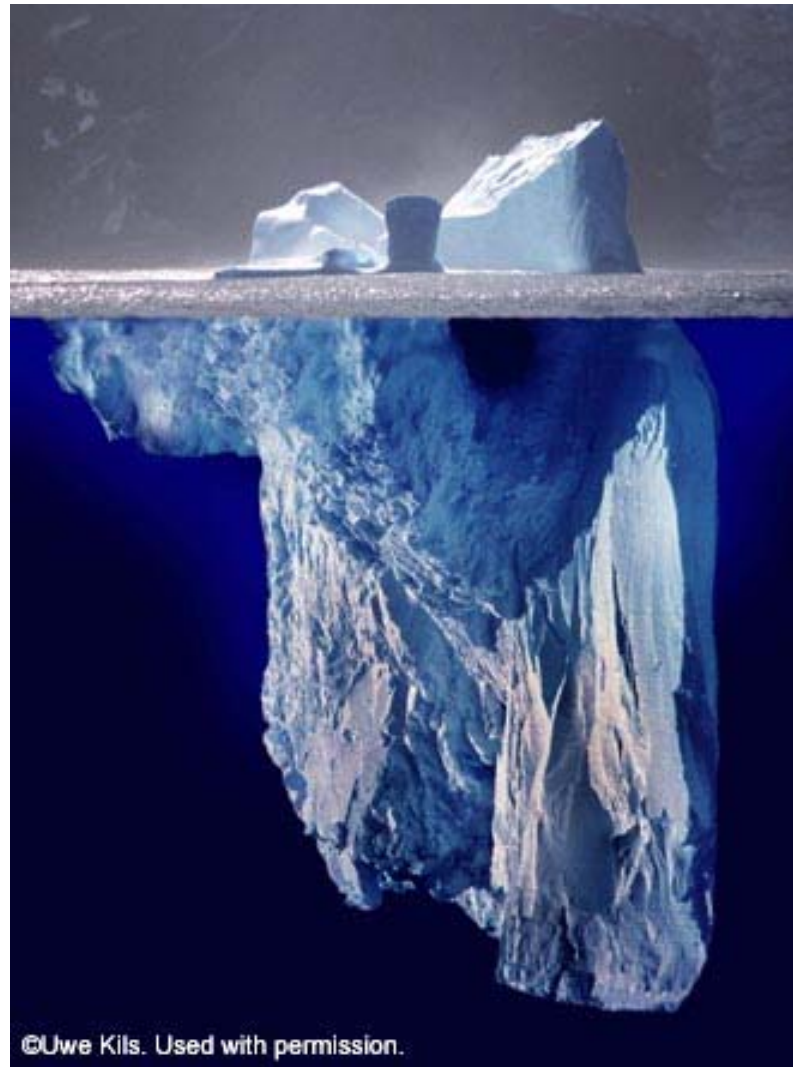
To Err is Human:
98,000 patients die from avoidable errors

The Quality Chasm:
Every Patient
"Crossing the Quality Chasm" 2001: IOM

Americans receive on average 55% of the evidence-based care*

** N Engl J Med 2003;348:2635-45.

Office of the National Coordinator for Health IT (ONC)

Phase 1 **[Dr. David Brailer]** **(Apr 2004 - May 2006)**
Phase 2 [Dr. Robert Kolodner] **(Sep 2006 - Apr 2009)**

Health IT – Role in Health and Care Transformation

Individual and Population Health & Well-being

Health Care Transformation
(Higher Quality, More Efficient, Patient-Focused)

Population Health
(Public Health, R&D, Quality Improvement, Emergency Preparedness)

Health IT solutions must support the needs of
BOTH
"perspectives"

Key Health IT Components to Enable Transformation

A Robust, Interoperable, Health IT Environment that brings together:

- Electronic Health Records (EHR)

- Personal Health Records (PHR)

- Population Health Information
  (Public Health, Biosurveillance, Quality Improvement, Research)

- Standards (Data, Technical and Security)

- Interoperable Health Information Exchange Network
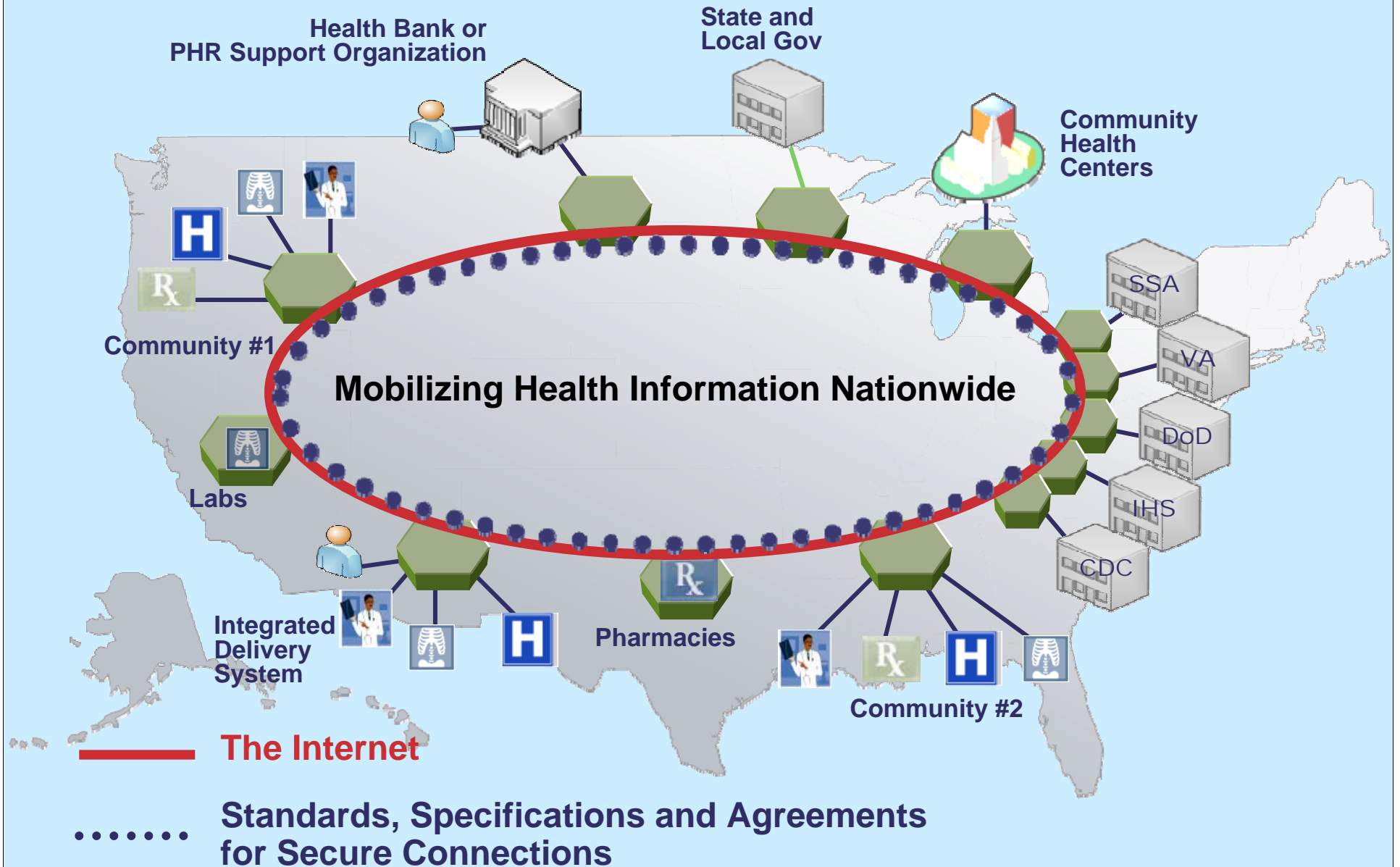 *(Nationwide Health Information Network - NHIN)*

Current State of EHR Adoption in the U.S.

Ambulatory EHRs [2007]

Basic System
13%

Fully Functional
4%

Percentage (y-axis: 0, 5, 10, 15, 20, 25)
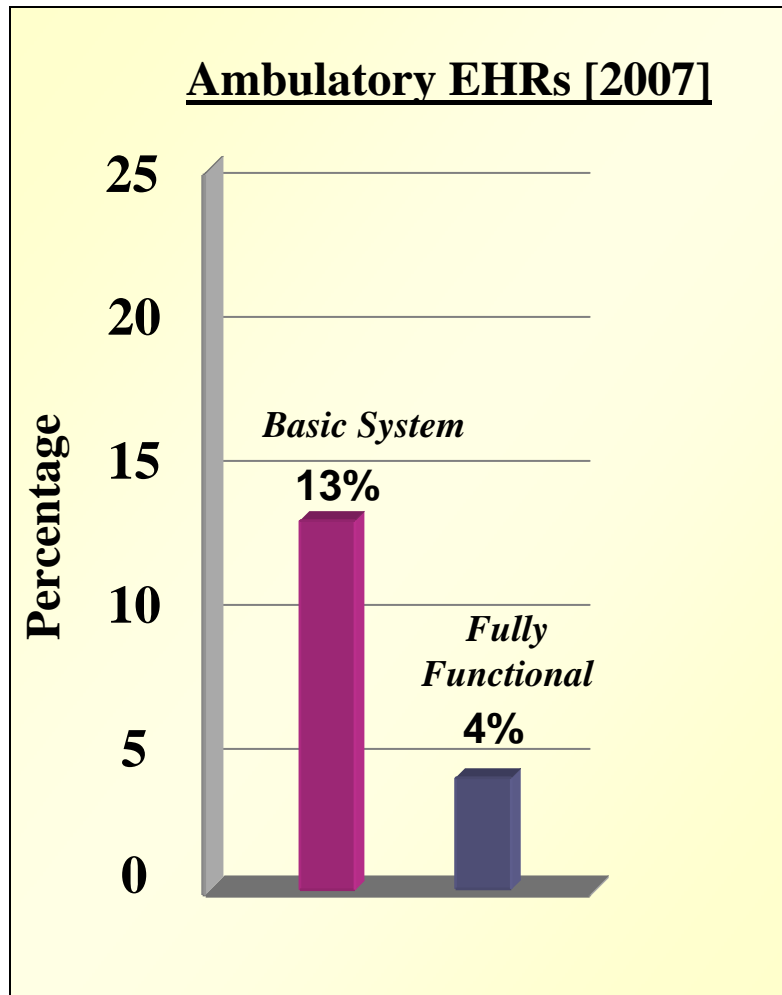
DesRoches CM et al., N Engl J Med 2008;359:50-60.

Hospital EHRs [2008]

Basic System
7.6%

Comprehensive System
1.5%

Percentage (y-axis: 0, 5, 10, 15, 20, 25)
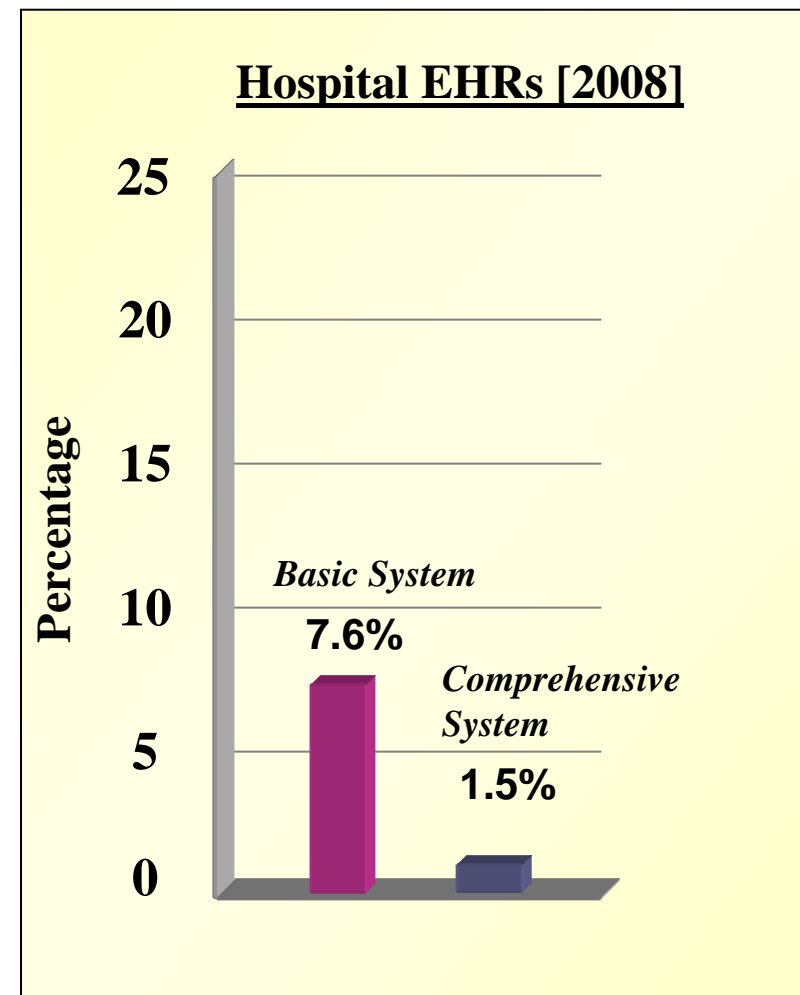
Jha AK et al., N Engl J Med 2009;360:1628-38.

The Nationwide Health Information Network

Health Bank or PHR Support Organization

State and Local Gov

Community Health Centers

H

Community #1

Labs

Mobilizing Health Information Nationwide

SSA

VA

DoD

IHS

CDC

Integrated Delivery System

Pharmacies

Community #2

The Internet

Standards, Specifications and Agreements for Secure Connections

Will the U.S. eHealth Agenda Survive Beyond November 2009?

President Obama's First Weekly Address
Saturday, January 24th, 2009

*"To lower health care cost, cut medical errors, and improve care, **we'll computerize the nation's health records in five years,** saving billions of dollars in health care costs and countless lives."*

The
American Recovery and Reinvestment Act
of 2009

Office of the National Coordinator for Health IT (ONC)

Phase 1
[Dr. David Brailer]

(Apr 2004 - May 2006)

Phase 2
[Dr. Robert Kolodner]

(Sep 2006 - Apr 2009)

Phase 3
[Dr. David Blumenthal]

(Starting Apr 2009)

Dr. David Blumenthal –
National Coordinator for Health IT

"As a primary care physician who has used an electronic record to care for patients every day for 10 years, I understand the enormous potential of this technology.

President Obama has laid out **a vision of health reform** *that is both inspiring and long overdue.*

We cannot make that vision a reality without the help of our most advanced computer technology.*"*

HHS Press Release, March 20, 2009

Health Reform 2009

- Universal coverage
- Payment reform (pay for results)
- Comparative effectiveness
- Cost control

Institute of Medicine's (IOM)
6 Characteristics of Quality Care

Safe

Patient-Centric

Timely

Equitable

Effective

Efficient
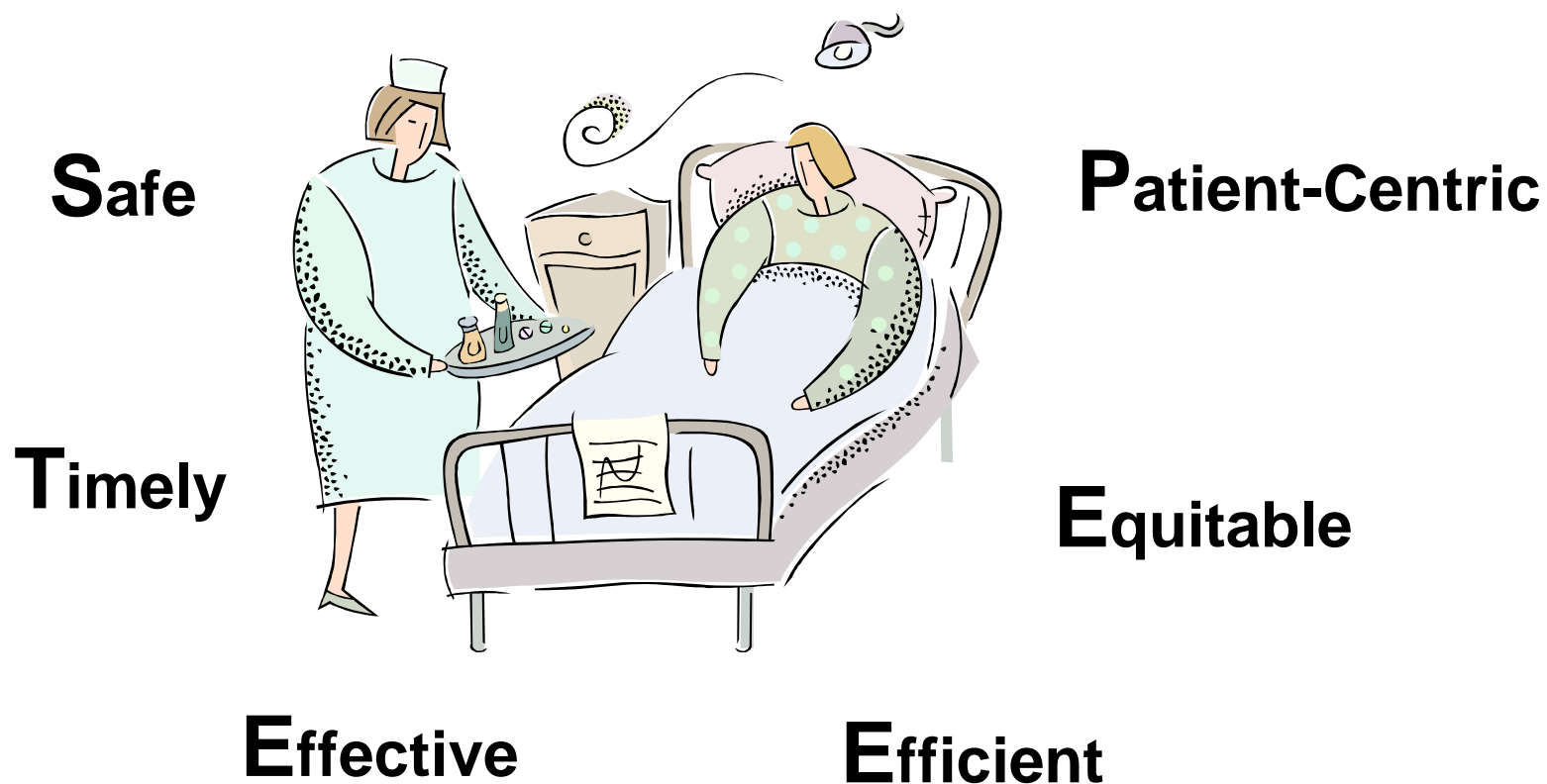
Section 2

A Glimpse at the VA Experience

Enabling Health Care Transformation Through Pervasive Health IT Adoption
is Achievable

Transformation in the Veterans Health Administration

(also occurring in selected other organizations)

(U.S.) VA Motto . . .

To Care for Him Who Shall Have Borne the Battle , and for His Widow , and His Orphan . . .

. . . Abraham Lincoln

"To honor America's veterans by providing exceptional health care that improves their health and well-being"

August 20, 2009

MUHC-ISAI -- Kolodner -- Improving Health Care Delivery Beyond VHA in the U.S.

26

VA Patient Characteristics

Patients

- **7.8 M enrollees**
  - 5.5 Million patient treated annually

    62.3 Million outpatient visits

    589,000 admissions

  - **Older:** 49% > age 65 (increasing population > 85)
  - **More illnesses:** Compared to age-matched Americans
  - **Poorer:** Income
    - ~ 70% with annual incomes < $26,000
    - ~ 40% with annual incomes < $16,000
  - Ethnically **Diverse**

VA Statistics

Facilities

- **Almost 1500 sites of care**
  - 153 Hospitals
  - 919 Clinics
  - 183 Long-term care settings

Annual Budget

- **Over $40 Billion**

VHA organized into 21 VISNs (Veterans Integrated Systems Networks
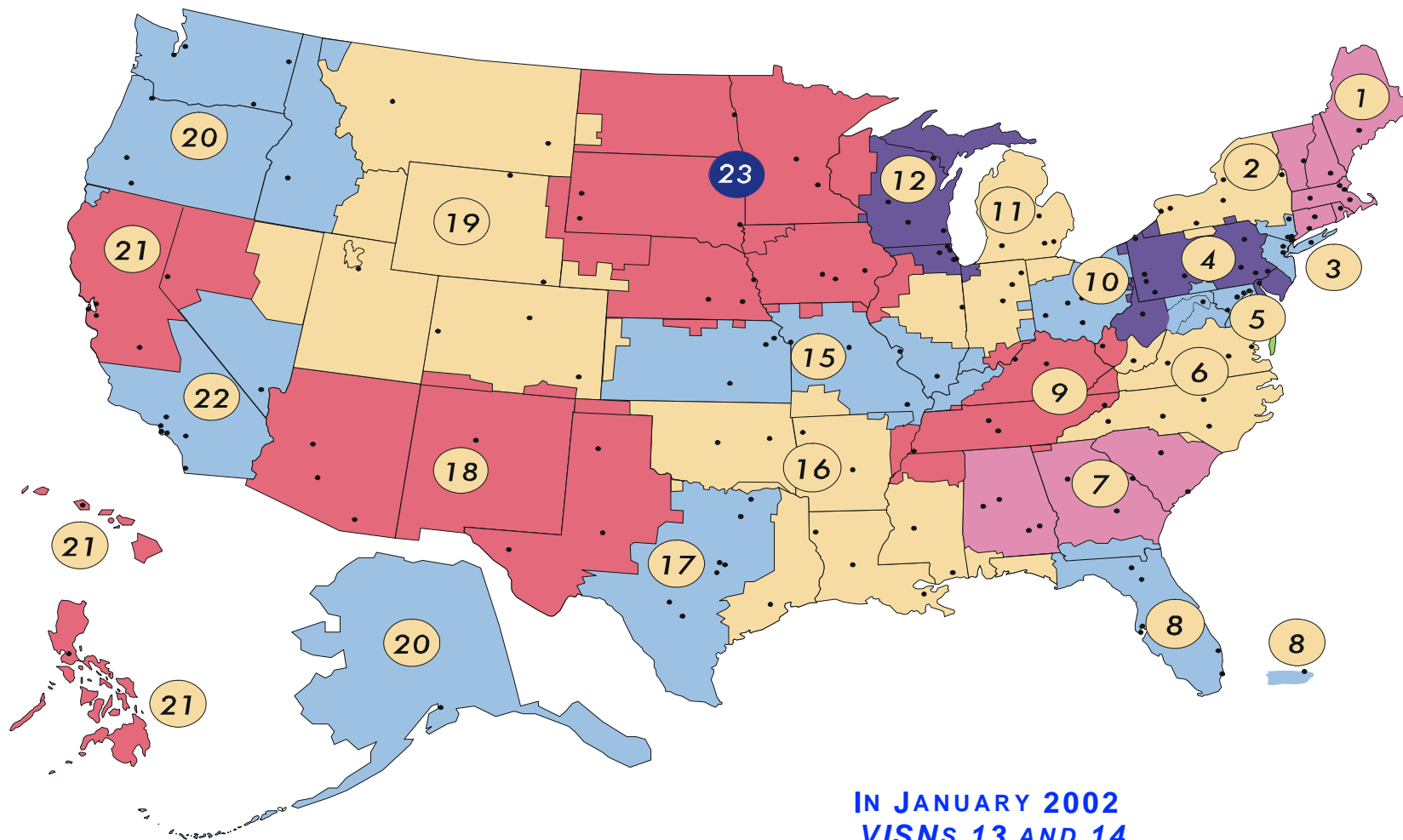
IN JANUARY 2002
VISNS 13 AND 14
WERE INTEGRATED AND
RENAMED VISN 23

Every VA Medical Center has Electronic Health Records !
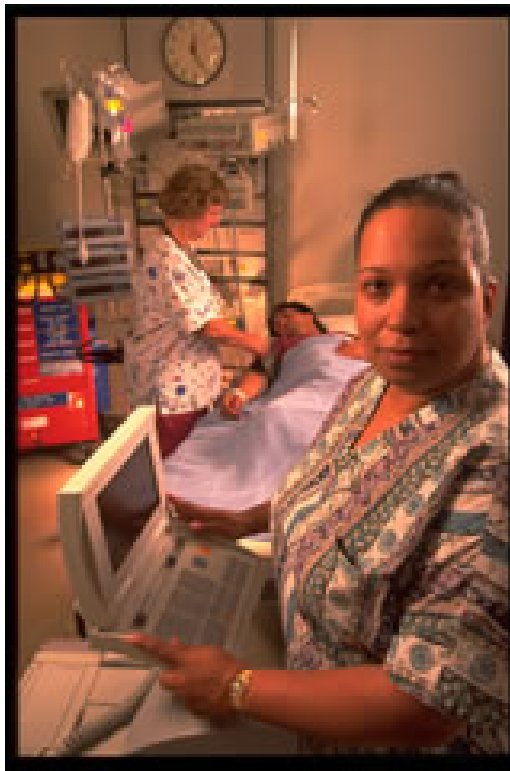
Single longitudinal health record is immediately available in
- **Outpatient**
- **Inpatient &**
- **Long-term care settings**

VistA Clinical Reminders

- ## VistA Clinical Reminders:

  - **Contemporary Expression of Practice Guidelines**
  - **Time & Context Sensitive**
  - **Reduce Negative Variation**
  - **Create Standard Data**
  - **Acquire health data beyond care delivered in VA**

Reminder Resolution: Pneumococcal vaccine (pneumovax)

ORDER PNEUMOCOCCAL IMMUNIZATION:
☐ Order for pneumococcal vaccine placed.
☐ Order for influenza vaccine entered.

PRIOR IMMUNIZATION:
☑ Patient indicated that the pneumococcal vaccine was received previously.
Date/Time: 1997 ... Location: East Orange, NJ
Comment:

REFUSAL/CONTRAINDICATION:
☐ Patient indicates a history of contraindication to pneumococcal vaccination.
☐ Pt. has an acute illness. Vaccinations will be delayed until recovery from same.
☐ Patient has a life expectancy of less than 6 months. Prevention and treatment may not be useful at this time.
☐ Patient refuses pneumococcal immunization.
☐ Patient refuses all immunizations at this time.

Clear   < Back   Next >   Finish   Cancel

Pneumococcal vaccine (pneumovax):
  Patient indicated that the pneumococcal vaccine was received previously.
  Location: East Orange, NJ

Immunizations: PNEUMO-VAC (Historical)

Links Reminder With the Action With Documentation

National VistA Statistics (Total…*Daily*)

- ## Documents
  (Progress Notes, Discharge Summaries, Reports)
    - **1.28 Billion**……… ***+846,000*** *each workday*

- ## Orders
    - **2.22 Billion**……..... ***+1,140,000*** *each workday*

- ## Images
    - **1.26 Billion**……… ***+1,560,000*** *each workday*

- ## Vital Sign Measurements
    - **1.49 Billion**………. ***+886,000*** *each workday*

- ## Medications Administered
  with the Bar Code Medication Administration (BCMA) system
    - **1.19 Billion**……… ***+633,000*** *each workday*

Statistics as of June 2009

Home-Telehealth Technologies

TeleVyou 500
Stand-alone Color Videophone

"Remote Physiological Monitoring"

Flexible Sensor Connectivity

Thermometer

Blood pressure

Digital Scale

Blood sugar

Stethoscope

Camera

ECG

Pulse O_2
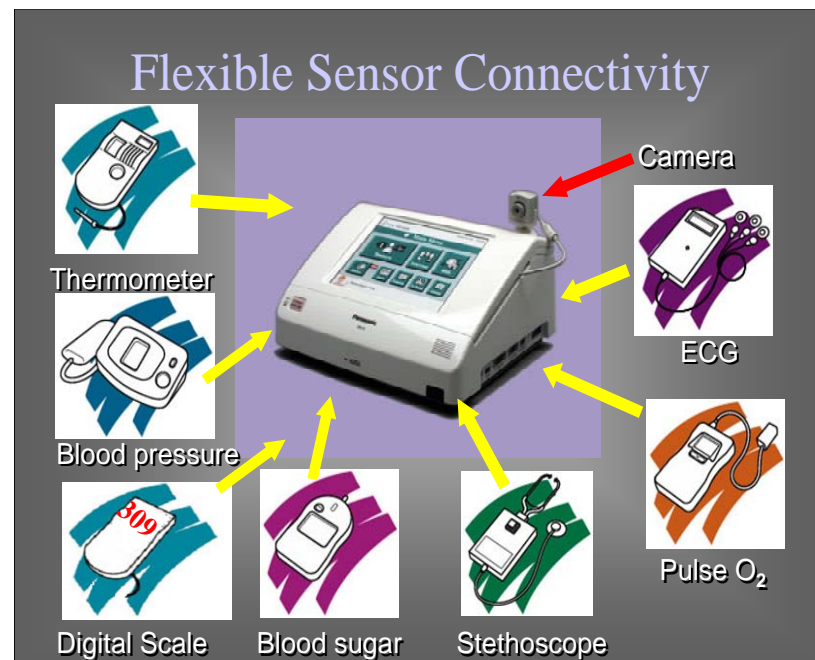
My Health_eVet

URAC Award for Best Practices in Consumer Empowerment and Protection

March 26, 2008

Transforming Health Care

The "point of care" has changed.

However

This is NOT about technology…

It is about RESULTS:

- Improved Health Care Quality

- Improved Health Outcomes

- Containing Health Care Costs

Best Health Care Anywhere

Quality evidence

And Just 2 Days Ago....

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TOPICS
- Ambulatory
- CDC
- Defense
- Disease Surveillance
- Electronic Health Record

Health care industry could learn from VA, says CBO

By Mary Mosquera
Monday, August 17, 2009

From the CBO Report (p. 7):

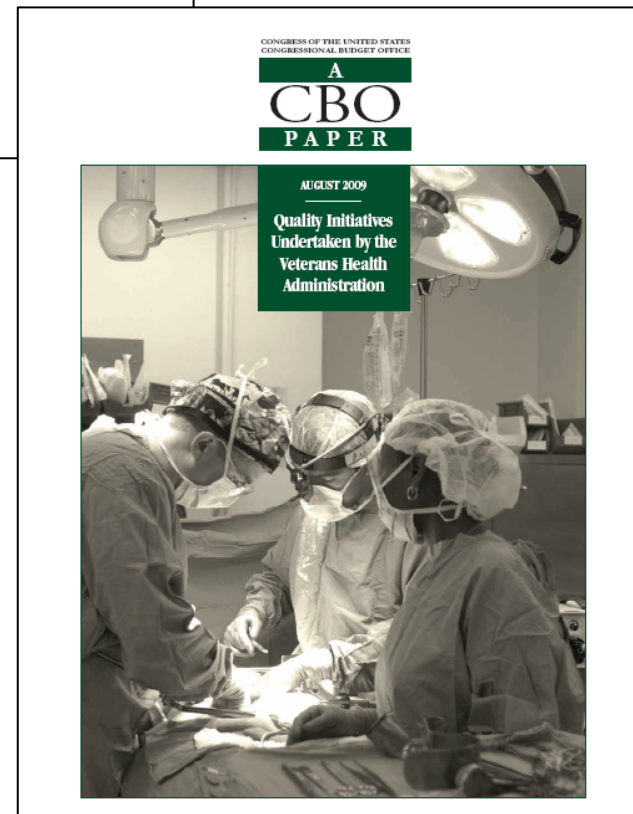VistA plays a key role in the agency's efforts to measure its performance and improve its quality. Researchers have used clinical data in VistA's electronic health records to study the effects of various quality improvement strategies. VHA's experience with EHRs may provide useful lessons for other health care providers on the ways in which such records can support the provision of coordinated, evidence-based medical care.

CONGRESS OF THE UNITED STATES
CONGRESSIONAL BUDGET OFFICE

A CBO PAPER

AUGUST 2009

Quality Initiatives Undertaken by the Veterans Health Administration

Quality evidence

VA's complete adoption of electronic health records and performance measures have **resulted in high-quality, low-cost health care with high patient satisfaction.**

A recent RAND study found that VA outperforms all other sectors of American health care across a spectrum of 294 measures of quality in disease prevention and treatment.

For six straight years, **VA has led private-sector health care** in the independent American Customer Satisfaction Index.

Change in Washington DC VAMC Costs
2000 – 2005
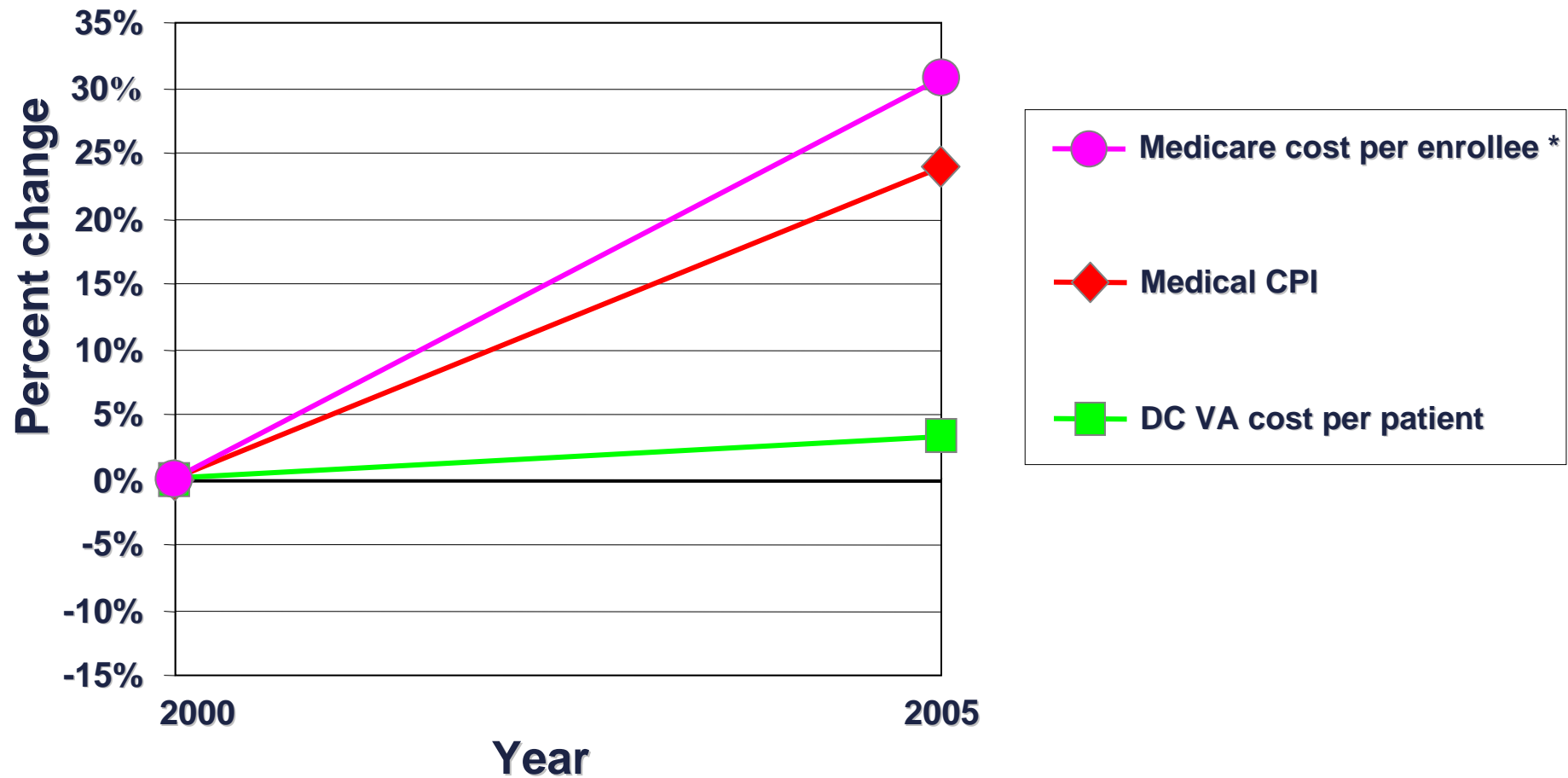
* 2005 values for Medicare were not available, 2004 value used in chart.

Cost Effectiveness:
Ten Year Cumulative Percentage Change in Cost
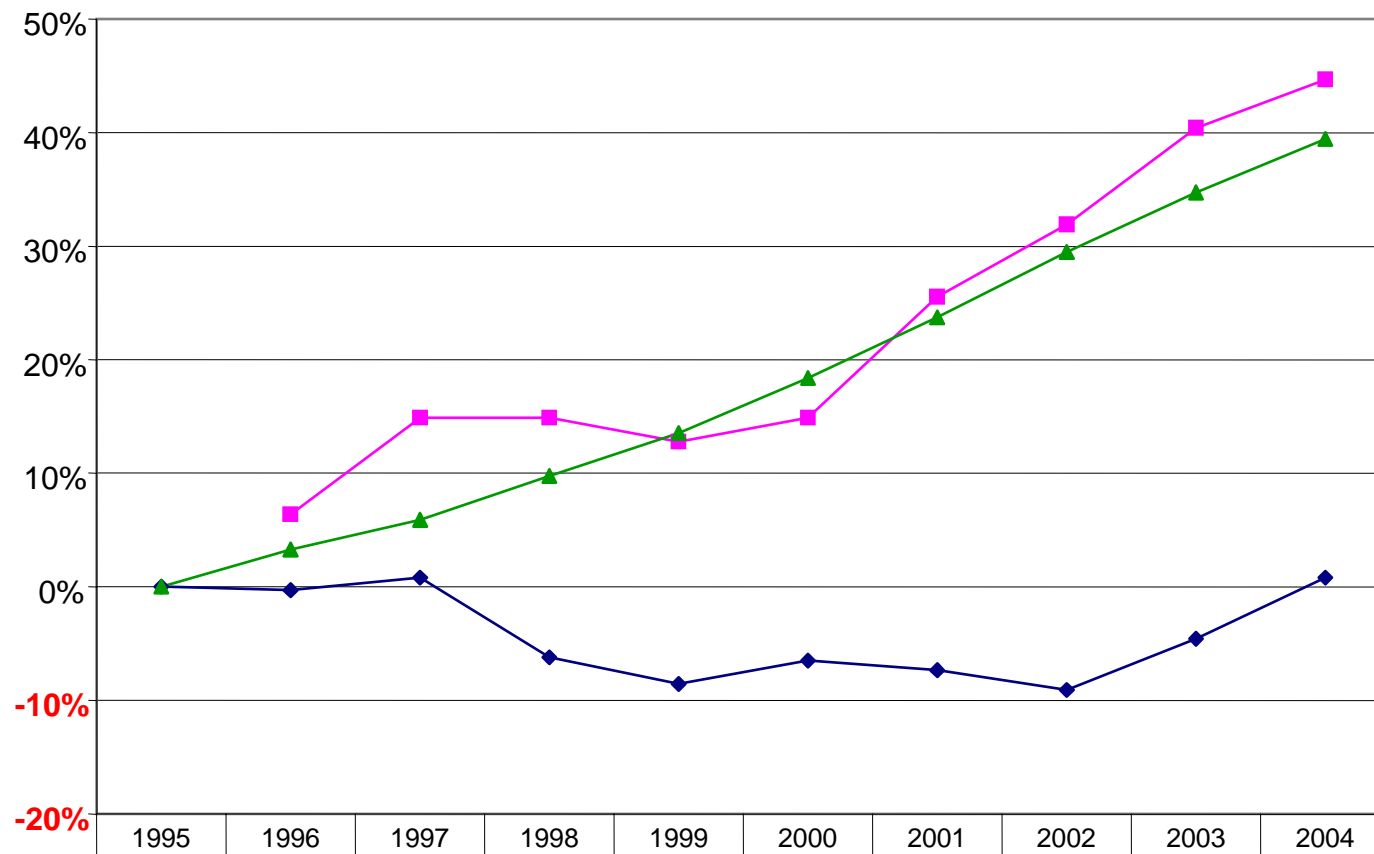
Three Key Quality Measures
1995 vs. 2006

Change in Performance	1995	2006
Colorectal Cancer Screening	34%	76%
Hypertension: BP<= 140/90	45%	75%
Immunizations: influenza	27%	71%

VA Performance Measures, 2009

- **120 Performance Measures**
  - 81 Clinical
  - 29 Access
  - 7 Functional status
  - 3 Patient satisfaction

- **193 Supporting Indicators**
  - 177 Clinical
  - 11 Access
  - 5 Functional

- **Various other monitors**

Performance Measure FY02 and FY03, Moved to a Supporting Indicator FY04

*VISN 13 & VISN 14 were combined to form VISN 23, therefore the FY01 4th Qtr baseline data for VISN 23 is an average of the two.

Legend: FY01 4th Qtr | FY02 4th Qtr | FY03 4th Qtr | FY04 4th Qtr

VISNs
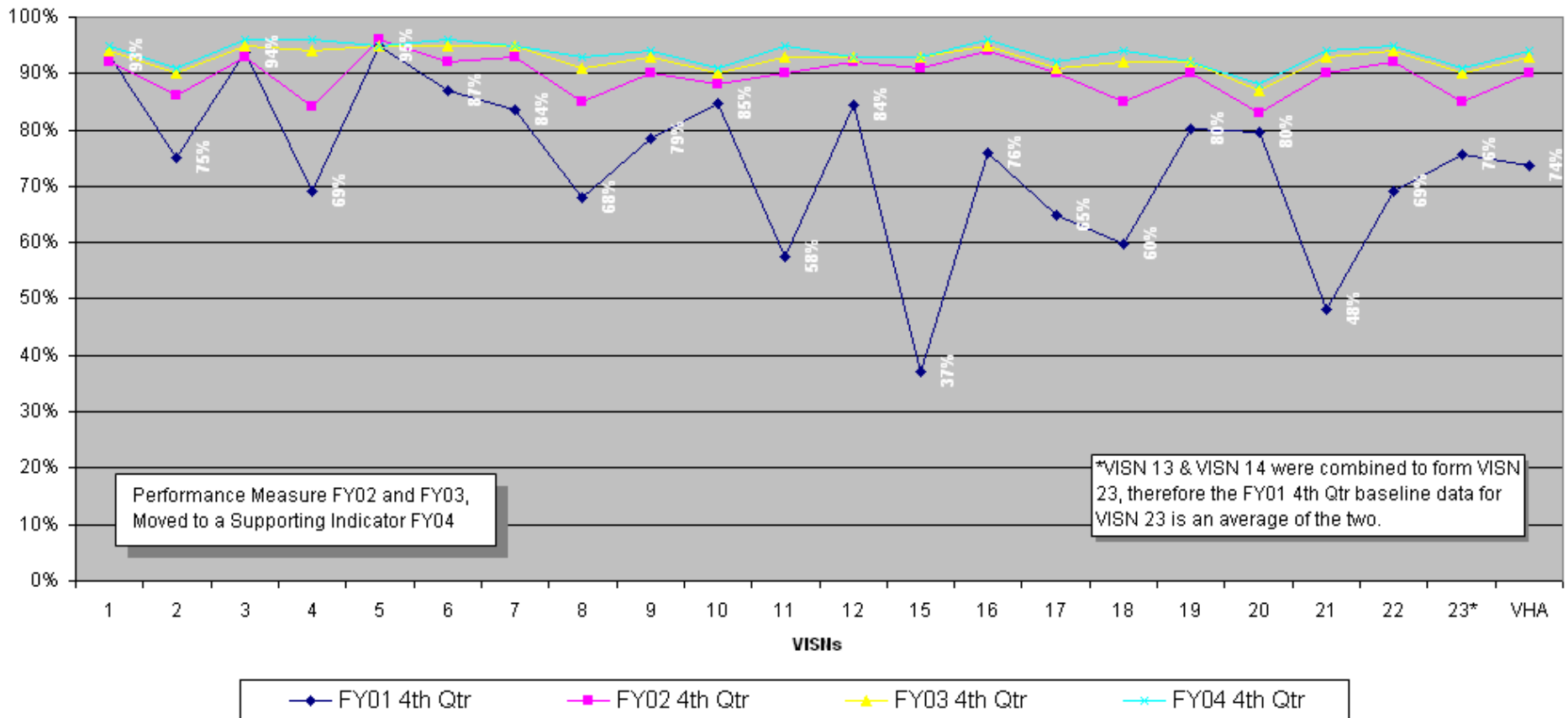
VHA Care Compares Favorably With Others

| INDICATOR	VA 2008	VA 2007	Commercial 2007	Medicare 2007	Medicaid 2007
Breast cancer screening	87%	**86%**	69%	67%	50%
Cervical cancer screening	92%	**91%**	82%	n/a	65%
Colorectal cancer screening	79%	**78%**	56%	50%	n/a
LDL Cholesterol < 100 after AMI, PTCA, CABG	66%	**62%**	59%	56%	38%
Diabetes: DM control HbA1c $\leq$ 9.0%	84%	**84%**	71%	71%	52%
Diabetes: LDL-C<100	68%	**64%**	44%	47%	31%
Diabetes: Eye Exam	86%	**85%**	55%	63%	50%
Diabetes: Renal Exam	93%	**91%**	81%	86%	74%
Diabetes: BP < 140/90	78%	**77%**	64%	59%	56%
Hypertension: BP < 140/90	75%	**76%**	62%	58%	53%
Smoking Cessation Counseling [3]	89%	**83%**	76%	n/a	70%
Smoking : Medications offered[3]	84%	n/a	51%	n/a	39%
Smoking: Referral/strategies [3]	92%	n/a	48%	n/a	39%
Immunizations: influenza	84%	**72%**	49%	**72%**	
Immunizations: pneumococcal	94%	**90%**	n/a	67%	

Since 1996, **Over 6,000 Lives Have Been Saved**
Just Among Veterans with Emphysema

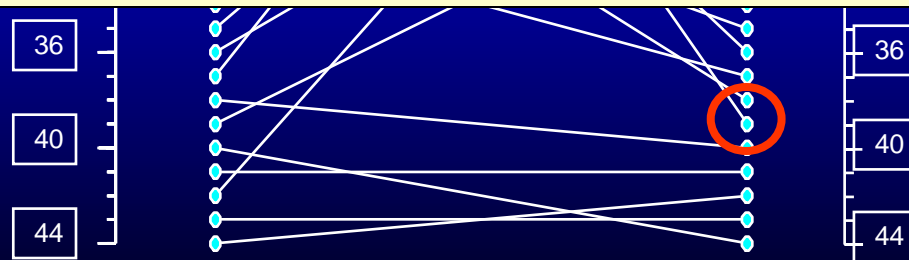From Increased Rates of Pneumococcal Vaccination

Changes in Hospital Ranks After Risk Adjustment for 30-day Mortality
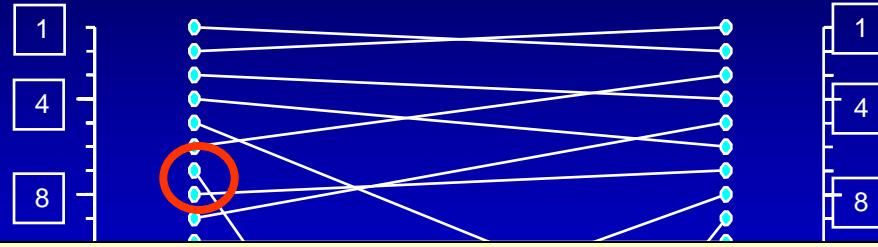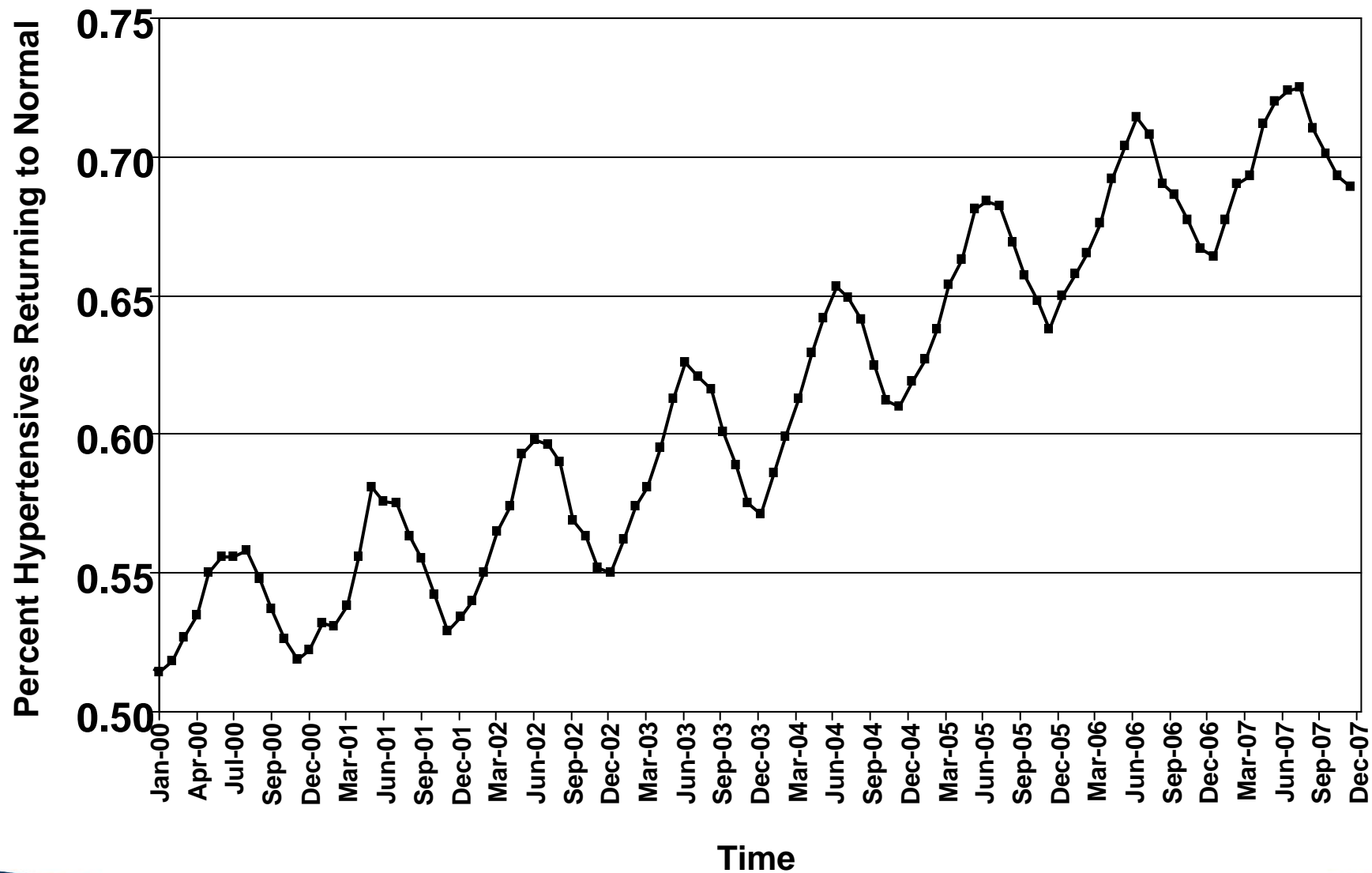

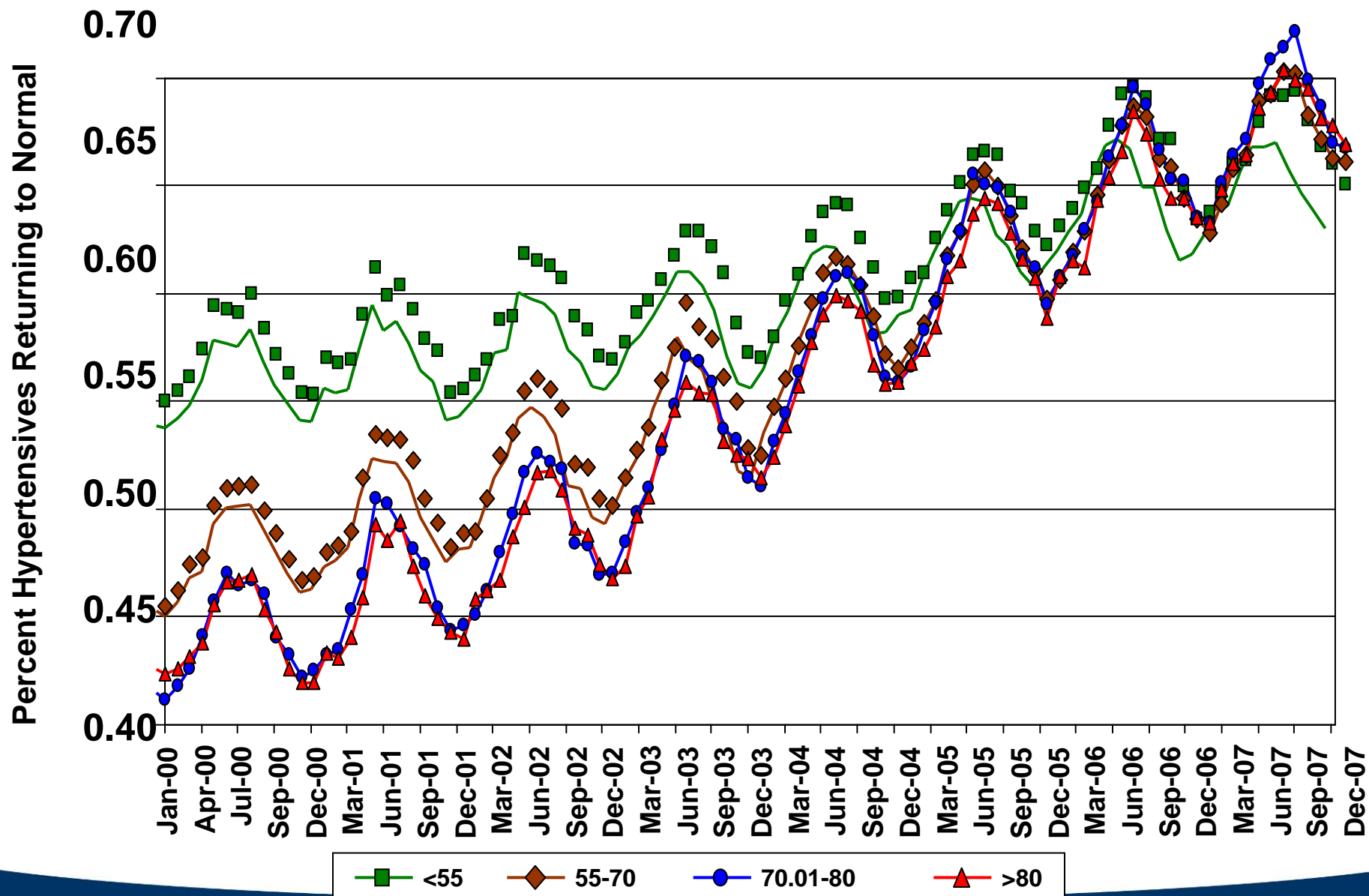*Annals of Surgery 1998;228:491-507*

Identification of outlier status of specific institutions using unadjusted outcomes has an error rate of 60%

Discovering New Knowledge:
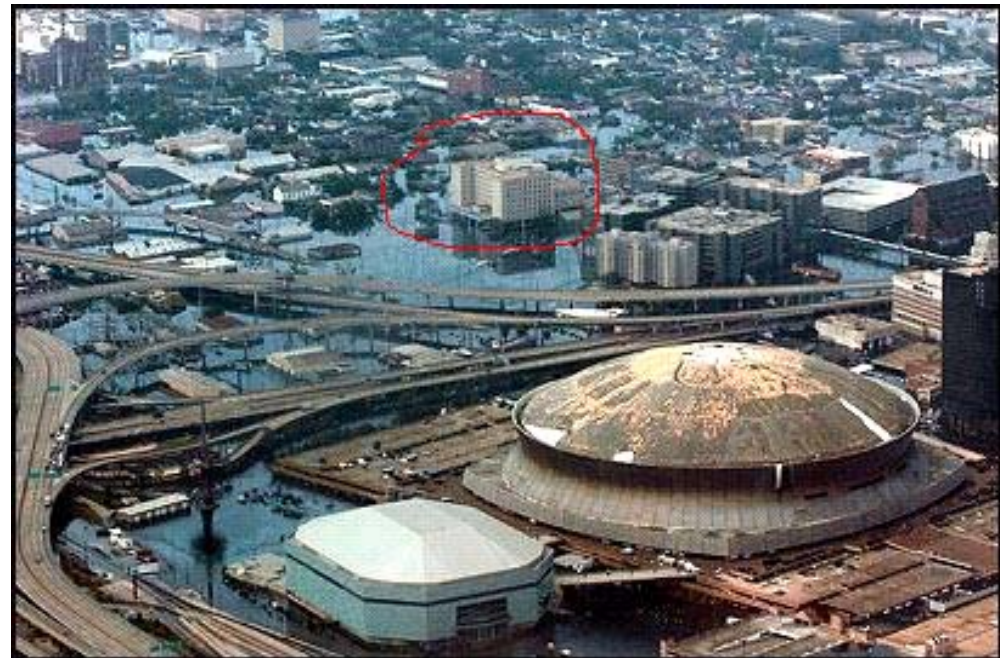## Seasonal Variation in Blood Pressure in Hypertensive Patients

Seasonal Variation in Blood Pressure in Hypertensive Patients by Age

Community Health: Hurricane Katrina Relief

- **50,000 New Orleans VA Patients did not lose their medical records, even when they lost their City**
  - Their VA Electronic Health Records followed them around the U.S.!

Transformational Strategies for VA Health Care

The Veterans Health Administration:
Quality, Value, Accountability, and Information as
Transforming Strategies for Patient-Centered Care

Jonathan B. Perlin, MD, PhD, MSHA; Robert M. Kolodner, MD;
and Robert H. Roswell, MD

"In summary,
electronic health records,
performance management, and
a patient-centric focus
have been critical transformational strategies for the VA.
They have been utilized to support achievement and are
associated with measurable progress in each of the VA's
value domains."

The American Journal of Managed Care, November 2004

Section 3

Closing Caveats

How Transformational Change Occurs

EHR Adoption

Transformational Change in
Health Care Delivery & Health

**Health IT
Tipping
Point**

TIME
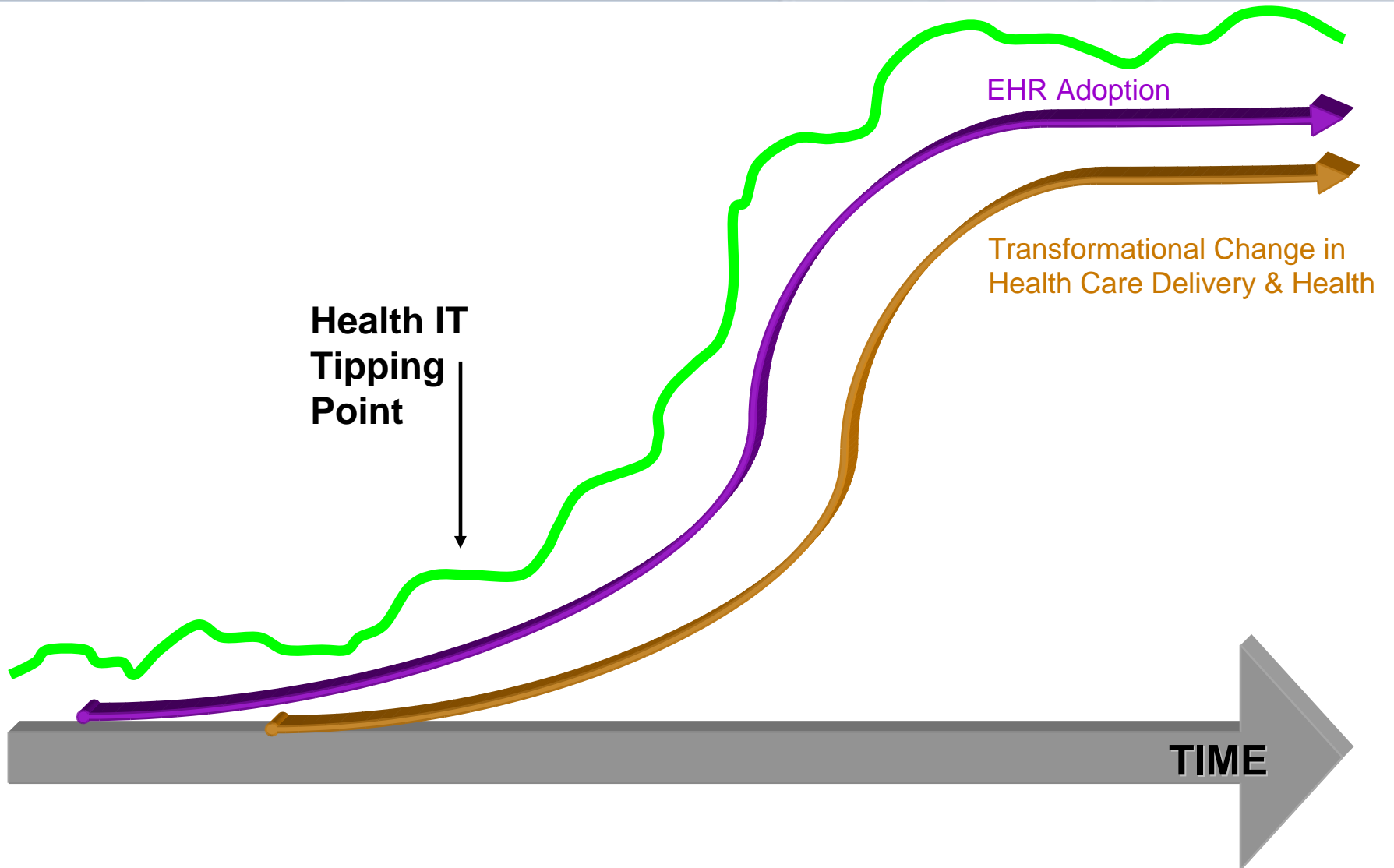
Opportunities Created by the World Wide Web

Disruptive Changes Are the "Norm"

PERSPECTIVE

Disruptive Innovation In Health Care Delivery: A Framework For Business-Model Innovation

Coupling technological advances with appropriately matched business models is the right prescription for our ailing health system.

by Jason Hwang and Clayton M. Christensen

ABSTRACT: Disruptive innovation has brought affordability and convenience to customers in a variety of industries. However, health care remains expensive and inaccessible to many because of the lack of business-model innovation. This paper explains the theory of disruptive innovation and describes how disruptive technologies must be matched with innovative business models. The authors present a framework for categorizing and developing business models in health care, followed by a discussion of some of the reasons why disruptive innovation in health care delivery has been slow. [*Health Affairs* 27, no. 5 (2007): 1329–1335; 10.1377/hlthaff.27.5.1329]

Notable Quote – Larry Wilson *

"Our options are to learn this new game, the rules, the roles of the participants and how the rewards are distributed,

or

to continue practicing our present skills and become the best players in a game that is no longer being played."

Changing the Game: The New Way to Sell

VA Leaders' Role in Fostering Innovation

"If we're not making mistakes, we're not at the edge."

Kenneth W. Kizer, MD
Under Secretary for Health
Department of Veterans Affairs
1995-2000

Questions and Discussion