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 uninsured and more underinsured)

• 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. Adapted from Perlin, Dr. Jonathan B, Healthcare 1015 & beyond: Some Thoughts on Planning Ahead, p. 95
Transforming Health and Care: Moving from Treating to Preventing to Predicting

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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**

**To Err is Human:**
98,000 patients die from avoidable errors

**Quality Problems**

**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]

- Fully Functional: 13%
- Comprehensive System: 4%

Hospital EHRs [2008]

- Basic System: 7.6%
- Comprehensive System: 1.5%


The Nationwide Health Information Network

Health Bank or PHR Support Organization

Community Health Centers

State and Local Gov

Community #1

Integrated Delivery System

Community #2

Labs

Pharmacies

The Internet

CDC

VA

DoD

IHS

SSA

Mobilizing Health Information Nationwide

Standards, Specifications and Agreements for Secure Connections
Will the U.S. eHealth Agenda Survive Beyond November 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
<table>
<thead>
<tr>
<th>Phase</th>
<th>Leader</th>
<th>Time Period</th>
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<tbody>
<tr>
<td>Phase 1</td>
<td>Dr. David Brailer</td>
<td>(Apr 2004 - May 2006)</td>
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<tr>
<td>Phase 2</td>
<td>Dr. Robert Kolodner</td>
<td>(Sep 2006 - Apr 2009)</td>
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<tr>
<td>Phase 3</td>
<td>Dr. David Blumenthal</td>
<td>(Starting Apr 2009)</td>
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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
- Timely
- Patient-Centric
- 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”
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!
Uses a Chart Metaphor - Combining Text and Images

Single longitudinal health record is immediately available in:
- Outpatient
- Inpatient & Long-term care settings
**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

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

“Remote Physiological Monitoring”

Flexible Sensor Connectivity

- Thermometer
- Blood pressure
- Digital Scale
- Blood sugar
- Stethoscope
- ECG
- Pulse O₂
- Camera
My HealtheVet

URAC Award for Best Practices in Consumer Empowerment and Protection

March 26, 2008
Transforming Health Care

The “point of care" has changed.
This is NOT about technology…

It is about RESULTS:

• Improved Health Care Quality
• Improved Health Outcomes
• Containing Health Care Costs
Best Health Care Anywhere

Military Might
TODAY’S VA HOSPITALS ARE MODELS OF TOP-NOTCH CARE

PHILLIP LONGMAN
Foreword by Timothy Noah

The Best Medical Care In the U.S.
Reprinted from the July 17, 2006 Issue of BusinessWeek magazine.

Best Health Care Anywhere

U.S.News

BusinessWeek

August 20, 2009
MUHC-ISAI -- Kolodner -- Improving Health Care Delivery Beyond VHA in the U.S.

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Quality evidence
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 healthcare providers on the ways in which such records can support the provision of coordinated, evidence-based medical care.
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

<table>
<thead>
<tr>
<th>Change in Performance</th>
<th>1995</th>
<th>2006</th>
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<tbody>
<tr>
<td>Colorectal Cancer Screening</td>
<td>34%</td>
<td>76%</td>
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<tr>
<td>Hypertension: BP $\leq 140/90$</td>
<td>45%</td>
<td>75%</td>
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<tr>
<td>Immunizations: influenza</td>
<td>27%</td>
<td>71%</td>
</tr>
</tbody>
</table>
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
Clinician Pharmacy Direct Order Entry Trend Data
Jul-Sep in Fiscal Year 2001 (baseline), 2002, 2003 & 2004

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.*
## VHA Care Compares Favorably With Others

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<tbody>
<tr>
<td>Breast cancer screening</td>
<td>87%</td>
<td>86%</td>
<td>69%</td>
<td>67%</td>
<td>50%</td>
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<tr>
<td>Cervical cancer screening</td>
<td>92%</td>
<td>91%</td>
<td>82%</td>
<td>n/a</td>
<td>65%</td>
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<tr>
<td>Colorectal cancer screening</td>
<td>79%</td>
<td>78%</td>
<td>56%</td>
<td>50%</td>
<td>n/a</td>
</tr>
<tr>
<td>LDL Cholesterol &lt; 100 after AMI, PTCA, CABG</td>
<td>66%</td>
<td>62%</td>
<td>59%</td>
<td>56%</td>
<td>38%</td>
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<tr>
<td>Diabetes: DM control HbA1c ≤ 9.0%</td>
<td>84%</td>
<td>84%</td>
<td>71%</td>
<td>71%</td>
<td>52%</td>
</tr>
<tr>
<td>Diabetes: LDL-C&lt;100</td>
<td>68%</td>
<td>64%</td>
<td>44%</td>
<td>47%</td>
<td>31%</td>
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<tr>
<td>Diabetes: Eye Exam</td>
<td>86%</td>
<td>85%</td>
<td>55%</td>
<td>63%</td>
<td>50%</td>
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<tr>
<td>Diabetes: Renal Exam</td>
<td>93%</td>
<td>91%</td>
<td>81%</td>
<td>86%</td>
<td>74%</td>
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<tr>
<td>Diabetes: BP &lt; 140/90</td>
<td>78%</td>
<td>77%</td>
<td>64%</td>
<td>59%</td>
<td>56%</td>
</tr>
<tr>
<td>Hypertension: BP &lt; 140/90</td>
<td>75%</td>
<td>76%</td>
<td>62%</td>
<td>58%</td>
<td>53%</td>
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<tr>
<td>Smoking Cessation Counseling (3)</td>
<td>89%</td>
<td>83%</td>
<td>76%</td>
<td>n/a</td>
<td>70%</td>
</tr>
<tr>
<td>Smoking : Medications offered (3)</td>
<td>84%</td>
<td>n/a</td>
<td>51%</td>
<td>n/a</td>
<td>39%</td>
</tr>
<tr>
<td>Smoking: Referral/strategies (3)</td>
<td>92%</td>
<td>n/a</td>
<td>48%</td>
<td>n/a</td>
<td>39%</td>
</tr>
<tr>
<td>Immunizations: influenza</td>
<td>84%</td>
<td>72%</td>
<td>49%</td>
<td>72%</td>
<td>72%</td>
</tr>
<tr>
<td>Immunizations: pneumococcal</td>
<td>94%</td>
<td>90%</td>
<td>n/a</td>
<td>67%</td>
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</tbody>
</table>
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

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

Annals of Surgery 1998;228:491-507
Discovering New Knowledge:
Seasonal Variation in Blood Pressure in Hypertensive Patients
Seasonal Variation in Blood Pressure in Hypertensive Patients by Age

Percent Hypertensives Returning to Normal

Seasonal Variation in Blood Pressure by Age:
- <55
- 55-70
- 70.01-80
- >80
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.!
“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**
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