

### Meaningful Connections:

Supporting Patient-Centered Medical Care Through Connected Health IT

David C. Kibbe, MD MBA for Maine PCMH Pilot, February 11, 2010



### Agenda

- The professional and policy views of patient-centeredness: Prescriptive models for health IT use within PCMH, Meaningful Use
- The new context for care delivery: The cost crisis, and the call for new care delivery and payment models that transfer clinical and financial risk to providers. What this implies about health IT objectives.
- The innovations: How technical advances are enlarging our opportunities for improving patient-centeredness while also managing provider risk

# Some big but under-appreciated issues

- Cross-boundary health data exchange issues: how do we assure that transfer-of-care summaries, et. al, can be shared across the continuum of care, beyond my organization?
- Who gets the data on patient care? what do the data include, who owns them, what will they be used for? Payors, or providers?
- Who owns the coding sets and vocabularies? Should the government purchase these and create a new, single set of codes for all major medical concepts?
- Who will be forced to be transparent, and who not?
- How can health IT resources be both patient-centered and capable of managing provider risk?

# What I'm going to assume you already know

- Basic definition of the PCMH model, and it's goals and objectives, e.g. care coordination.
- NCQA PCMH accreditation criteria
- PCMH map of pilots and demonstrations across the country
- The basic concepts behind Accountable Care Organizations and the various levels of configuration being contemplated, and how these relate to PCMH

# The Patient-Centered Medical Home (PCMH) is a Model of Health Care Delivery

The PCMH would be responsible for all of the patients' health care needs: acute care, chronic care, preventive services, and end of life care working with teams of health care professionals.

The PCMH would "coordinate the care" of its patients with specialists, lab/x-ray facilities, hospitals, home care agencies, and all other health care professionals on the patient care team.

The PCMH would use health information systems to provide data and reminder prompts such that all patients receive needed services.



# NCQA PPC-PCMH: Included in the standards are 10 "must-pass" elements.

PPC-1A: Written standards for patient access and patient communication

PPC-1B: Use of data to show standards for patient access and communication are met

PPC-2D: Use of paper or electronic charting tools to organize clinical information

PPC-2E: Use of data to identify important diagnoses and conditions in practice

PPC-3A: Adoption and implementation of evidence-based guidelines for three chronic or important conditions

- 6. PPC-4B: Active support of patient selfmanagement
- 7. PPC-6A: Systematic tracking of tests and follow up on test results
- 8. PPC-7A: Systematic tracking of critical referrals
- 9. PPC-8A: Measurement of clinical and/or service performance
- 10.PPC-8C: Performance reporting by physician or across the practice

To achieve Level 1 Recognition, practices must successfully comply with at least 5 of these elements. Achieving Level 2 or Level 3 depends on overall scoring and compliance with all 10 must pass elements: <a href="http://www.ncqa.org/tabid/631/Default.aspx">http://www.ncqa.org/tabid/631/Default.aspx</a>



#### **PCMH Pilot Map**

UnitedHealth Group PCMH Demonstration Program (AZ)

Colorado Multi-Stakeholder Multi-State PCMH Pilot (CO)

Wellstar Health System (GA)

Quality Quest Medical Home (IL)

Louisiana Health Care Quality Forum Medical Home Initiative (LA)

Maine Multi-Payer Patient-Centered Medical Home Pilot (ME)

Aligning PCMH Stakeholders in Michigan (MI)

Blue Cross Blue Shield of Michigan Physician Group Incentive Program (PGIP) (MI)

CIGNA and Dartmouth-Hitchcock Patient-Centered Medical Home Pilot (NH)

NH Multi-Stakeholder Medical Home Pilot (NH)

Patient-Centered Medical Home—Diabetes Management (ND)

MediQhome Quality Project: Patient-Centered

Advanced Medical Home Quality Improvement Initiative (ND)

CDPHP Patient-Centered Medical Home Pilot (NY)

Emblem Health Medical Home High Value Network Project (NY)

New York Hudson Valley p4p/Medical Home Project (NY)

Cincinnati Medical Home Pilot Initiative (OH)

Greater Cincinnati Aligning Forces for Quality Medical Home Pilot (OH)

Southeastern Pennsylvania Rollout of the Chronic Care Initiative (PA)

Rhode Island Chronic Care Sustainability Initiative (CSI-RI) (RI)

Memphis Multi-Payer Patient-Centered Medical Home (TN)

Texas Patient-Centered Medical Home Demonstration Project (TX)

Patient-Centered Medical Home—Vermont (VT)



### **Accountable Care Organizations (ACOs)** (Sec. 3022)

- Not later than January 1, 2012, the Secretary establishes a shared savings program that would reward ACOs
  - ACOs that meet quality-of-care targets and reduce costs are rewarded with a share of the savings
- ACOs include groups of health care providers
  - Physician groups, hospitals, nurse practitioners and physician assistants, and others
- ACOs need to
  - promote evidence-based medicine
  - patient engagement
  - report on quality and cost measures
  - coordinate care, such as through the use of Telehealth, remote patient monitoring, and other such enabling technologies





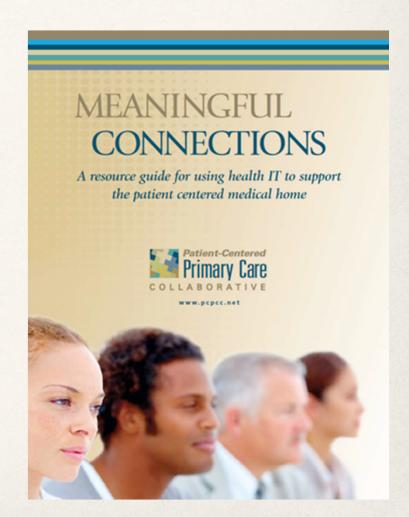
### Rx for Health IT 2005-10

Moving toward patient-centeredness from practice- and enterprise-centeredness

### Kibbe, early 2009, moving away from EHR feature and function list, to describe patient-centered *capabilities* of health IT

"Meaningful Connections" for the Patient Centered Primary Care Collaborative

- The ability to collect, store, manage and exchange relevant personal health information.
- The ability of providers, patients and other members of a person's health team to communicate among themselves and in the process of care delivery.
- The ability to collect, store, measure and report on the processes and outcomes of individual and population performance and quality of care.
- The ability of providers and their practices to engage in decision support for evidence-based treatments and tests.
- The ability of consumers and patients to be informed and literate about their health and medical conditions and appropriately self-manage with monitoring and coaching from providers.



# NCQA PPC-PCMH: Included in the standards are 10 "must-pass" elements that imply health IT uses.

- 1. PPC-1A: Written standards for patient access and patient communication
- 2. PPC-1B: Use of data to show standards for patient access and communication are met
- 3. PPC-2D: Use of paper or electronic charting tools to organize clinical information
- 4. PPC-2E: Use of data to identify important diagnoses and conditions in practice
- PPC-3A: Adoption and implementation of evidencebased guidelines for three chronic or important conditions

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## Stage 1 MU Objectives

#### CORE

Use CPOE
e-Prescribing
Drug-drug & drug allergy checks
Medication list
Allergy list
Problem list
Decision support

Record demographics Smoking Status Vital Signs

Must Do All

Clinical summaries to patient Electronic exchange Health info to patients

**Quality Measures** 

Protect health information

#### **MENU**

Incorporate clinical labs

Medication reconcliation

Implement drug-formulary checks

Generate patient list

Patient electronic access
Send reminder

Patient-specific education

Clinical summaries to provider

Immunization registry
Biosurveillance

**Must Do Five** 



### Stage 1 MU Measurements

#### CORE **Use CPOE** e-Prescribing Drug-drug & drug allergy checks Medication list Allergy list Problem list Must Do All **Decision support** Record demographics Smoking Status Vital Signs Clinical summaries to patient Electronic exchange Health info to patients **Quality Measures** Protect health information

#### **MENU** Incorporate clinical labs Medication reconcliation Implement drug-formulary checks Generate patient list Patient electronic access Send reminder Patient-specific education Clinical summaries to provider Immunization registry Biosurveillance 1 of 5 must be one of these





50%



40%

Five

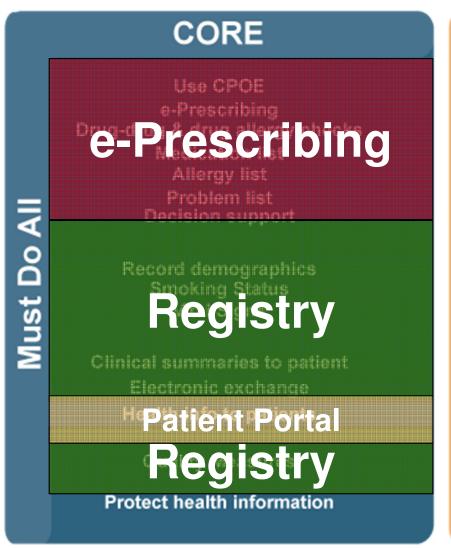
Must Do

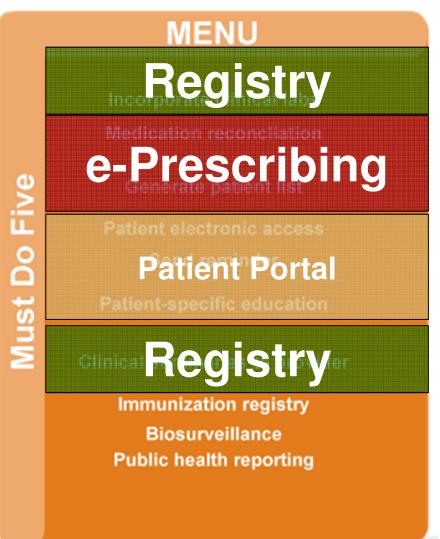


30%



### Stage 1 MU EHR Modules







# Stage 2 MU Objectives Will Stress Patient Engagement, Care Coordination, and Health Data Exchange

- ✓ EPs: 20% of patients use a personal health record (includes patient portal) to access their information (for an encounter or for the longitudinal record) at least once. Exclusions: patients without ability to access the Internet.
- EPs: 30% offered secure patient messaging online
- EPs: connect to at least 3 providers in "primary referral network," or establish an ongoing bidirectional connection to at least one HIE. (30% for Stage 3)
- Patient preferences for communication medium recorded for 20% of patients
- 80% of patients offered the ability to view and download, within 36 hours of discharge, relevant information contained in the record about EH inpatient encounters. Data are available in a uniformly human-readable form (HITSC to define; e.g., use of PDF or text).

# The ideal: Kibbe's summary of the professional and policy views

- Patient-centeredness demands the use of health IT to
  - Encourage patient participation and engagement in care
  - Coordinate care across organizational boundaries and across time
  - Measure quality, effectiveness, and efficiency of care in order to continuously improve the patients' experience

# The current environment

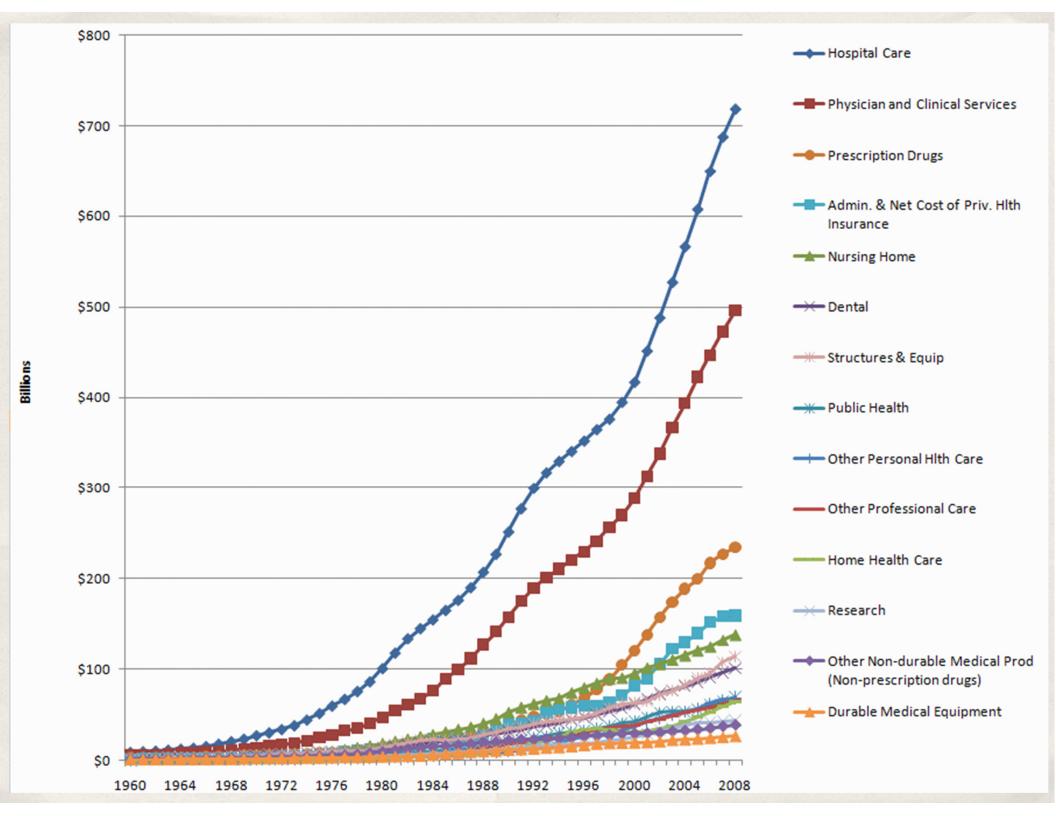
Unsustainable costs for health care
Medicare the largest contribution to debt
Looming cuts in physician fees
Physician and provider organization
assumption of risk.

### Health care's wasted dollars

Here are some of the contributors to the \$1.2 trillion being leaked out of the system.



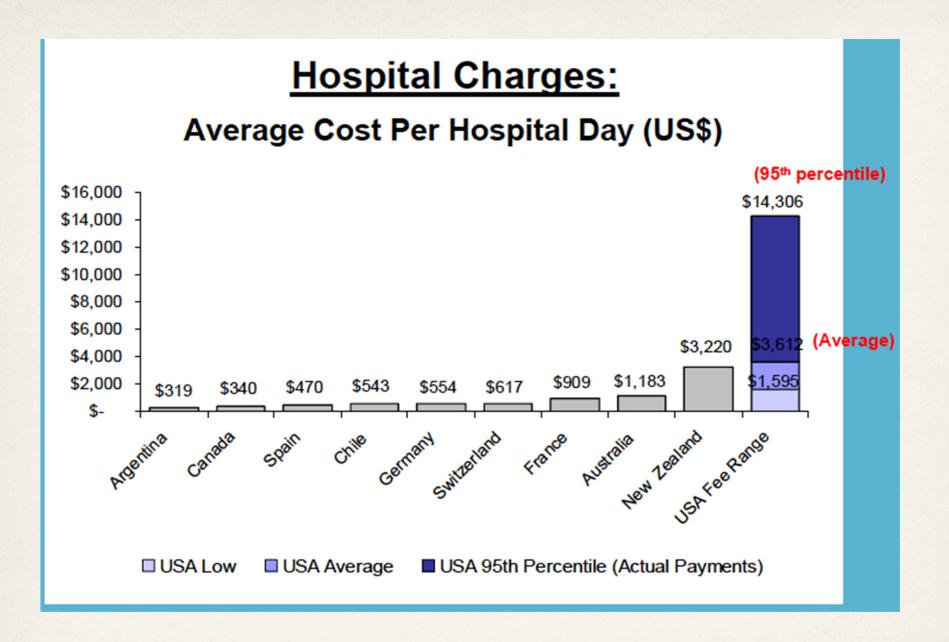
SOURCE: PRICEWATERHOUSECOOPERSUHEALTH RESEARCH INSTITUTE (2008)

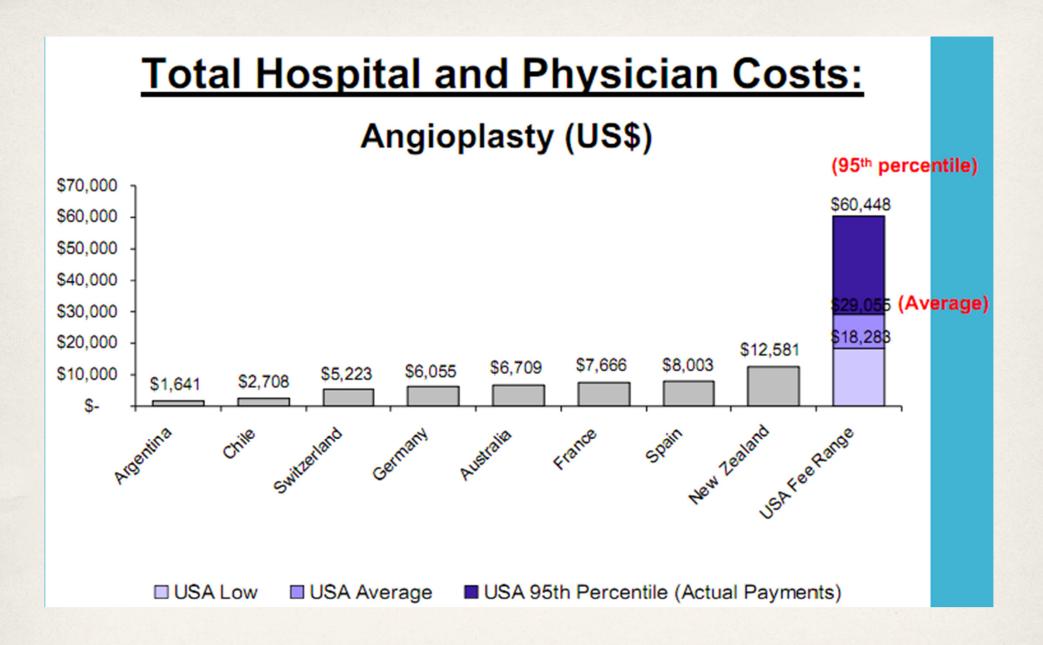


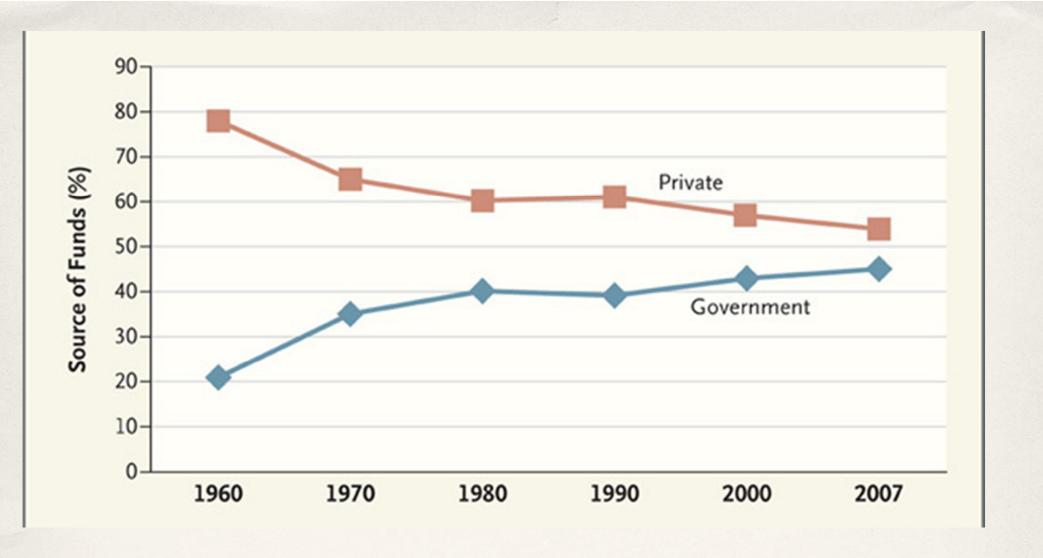
#### Forecasts of National Health Care Spending as a Percent of GDP



Sources: CMS from "The Long-Term Projection Assumptions for Medicare and Aggregate National Health Expenditures," Office of the Actuary, Centers for Medicare and Medicaid Services, March 2008. CBO - estimated using the excess cost growth assumptions in *The Long-Term Outlook for Health Care Spending*, CBO, November 2007, coupled with CBO Baseline Budget projections 2008-2018, September 2008. See Rettenmaier and Wang (PERC Working Paper No. 0901).



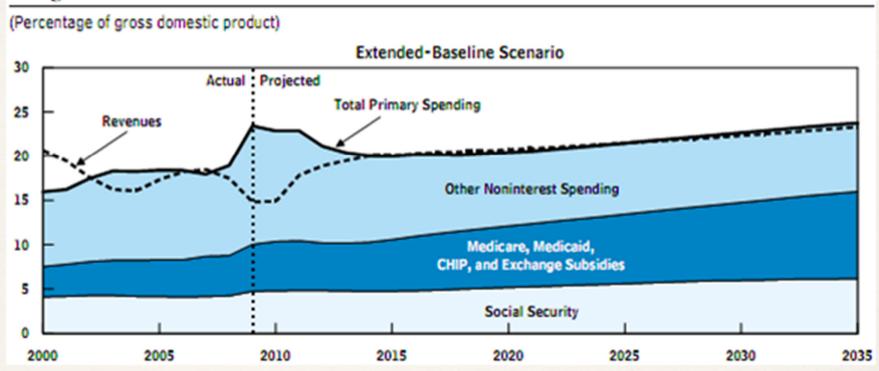




### Driving out employer-based insurance

Employers are dropping health insurance and/or reducing subsidy and benefits

#### Revenues and Primary Spending, by Category, Under CBO's Long-Term Budget Scenarios



# Driving federal spending & debt

Medicare predicted to be half of federal budget by 2035

### Hospital Readmissions

(We Don't Do a Good Job Here)



- Almost one fifth (19.6%) of the 11,855,702 Medicare beneficiaries who had been discharged from a hospital were re-hospitalized within 30 days. 34.0% were rehospitalized within 90 days.
- In 50.2% of the patients who were re-hospitalized within 30 days after a medical discharge to the community, there was no bill for a visit to a physician's office between the time of discharge and rehospitalization.
- Authors estimate that the cost to Medicare of unplanned rehospitalizations in 2004 was \$17.4 billion.

Source: N Engl J Med 2009;360:1418-28.

### What's a government to do? Section 3025 – Hospital Readmissions Policy

- ✓ Beginning October 1, 2012, DRG payments to hospitals who have "excess" readmissions for certain conditions will be reduced. The floor adjustment factor will be 99% for fiscal year 2013, 98% for 2014, and 97% for fiscal year 2015 and thereafter.
- First three conditions to track: AMI, heart failure, and pneumonia.
- October 1, 2014, the list expands: COPD (chronic obstructive pulmonary disease), CABG (coronary artery bypass graft), PTCA (percutaneous transluminal coronary angioplasty), and other vascular conditions.

# Two new care models have emerged to meet the challenges

- Patient-Centered Medical Home
  - The PCMH would "coordinate the care" of its patients with specialists, lab/x-ray facilities, hospitals, home care agencies, and all other health care professionals on the patient care team.
- Accountable Care Organization
  - The ACO will involve groups of providers, physicians, hospital, NPs and PAs and others to promote evidence-based medicine, patient engagement, report on quality and cost measures, and coordinate care through enabling technologies.

# In transition: from volume to value

- "We're still trying to do as many procedures as possible, but we're thinking about cutting down on those that are unnecessary."
- \* "Despite my very supportive board of directors, they will not allow me to lead our organization into bankruptcy by doing the right thing. We need to change our payment system if we truly want to ensure universal coverage, improve quality and reduce cost."



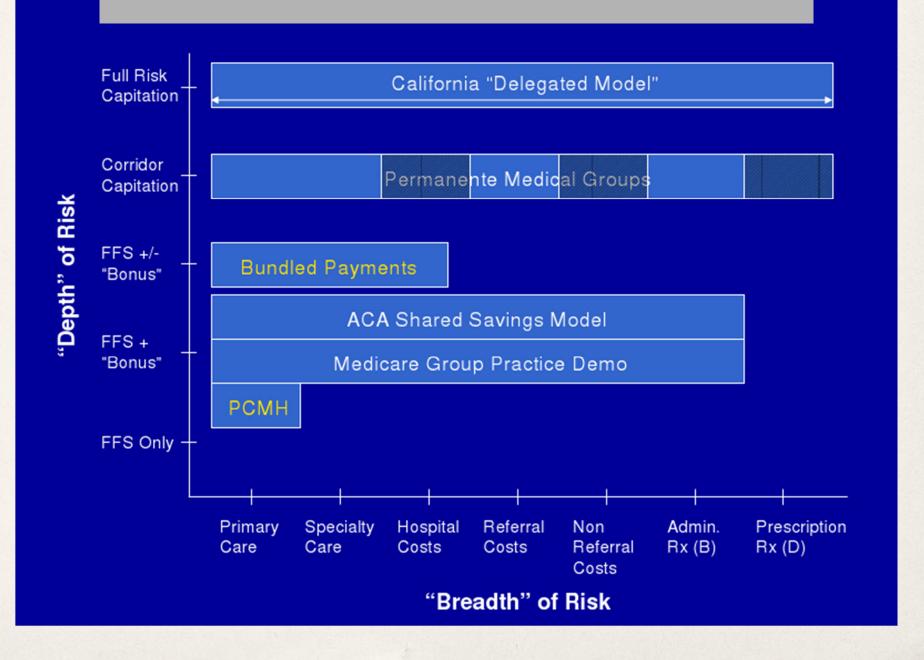
# The "big idea" here?

Accountability

Risk management, clinical & financial Cost control -- or lose control



#### A Traditional View of Provider Organizational Risk





#### **Cost Shifting Precluded**

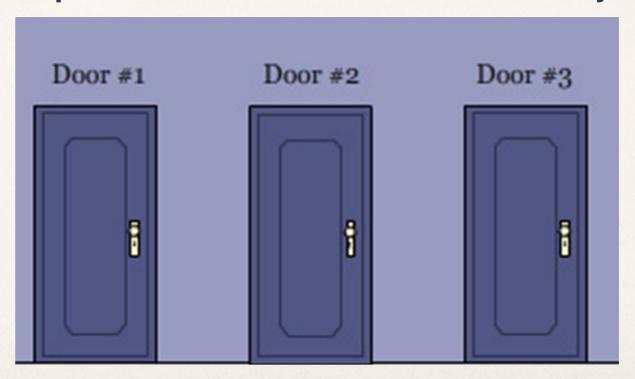
Payments Bundled

Payments Tied to Quality Measurement Targets

**Payment Mix Changes** 

Payment Reductions

Capitated FFS Insured Self-Pay



PCMH-Associated Provider Risk Can Take Several Forms

# Areas of patient-centered health IT consistent with management of provider risk

- Patient engagement
- Cross organizational medical care management
- Clinical information exchange
- Quality reporting
- Business intelligence and analytics
- Revenue and cost management (inc



# Health IT areas useful for managing provider risk

- As organization matures, the ability to take on more risk will increase....
- .....provided health IT evolves apace, scales, and generates more meaningful/useful data.

	ACO and PCMH maturity		
	Early	Developing	Mature
I. ACO Member Engagement	Episode of care Call center support	Pre-care intervention; Member outreach; Social media (one to one)	Prevention; Lifestyle consultation; Remote monitoring; Social media (many to many)
II. Cross Continuum Medical Management	Case management	Care coordination; Patient centered medical home	Disease management; Health maintenance
III. Clinical Information Exchange	Static; Read-only access; User request-based	Pushed (automatic); Continuity of care documents	Real time sharing across all venues; Patient access
IV. Quality Reporting	EHR (meaningful use stage 1)	EHR (meaningful use stages 2 & 3)	Real-time, dashboard/desktop, ad hoc reporting
V. Business Intelligence, Predictive Modeling and Analytics	Patient focused; Episode/encounter focused data; Retrospective; Clinical and financial	Population- based; Continuum of care data; Predictive health analytics	Social and network data; Behavioral analytics; Real-time
VI. ACO Risk and Revenue Management	Cost accounting across the continuum of care; Membership data management	Provider network management; Global contracting; Allocation of payment	Capitation management

# From ideal to real: Four specific health IT *imperatives* that combine patient-centeredness with provider risk management

- Move architectures/platforms to the web, Internet, and mobile platforms
- Provide cross-boundary transport & communications, anywhere, anytime.
- Accelerate technical interoperability and computability of data between systems
- Make cost accounting patientcentered, measuring shared costs of care around patients' care cycles not departments

- Scale lowers cost of ownership; apps easy to use, task-driven, substitutable, mobile; data re-used, re-purposed, patient-accessible.
- Transport layer openness removes fax; permits multi-organizational teams to form; encourages use of clinical groupware to re-define work flows.
- Data liquidity drives analytics for continuous improvement and just-in-time decision support; clinical integration around patient.
- Measuring value can re-prioritize patient experience over time > 1 year.

# Innovations that can help us get there

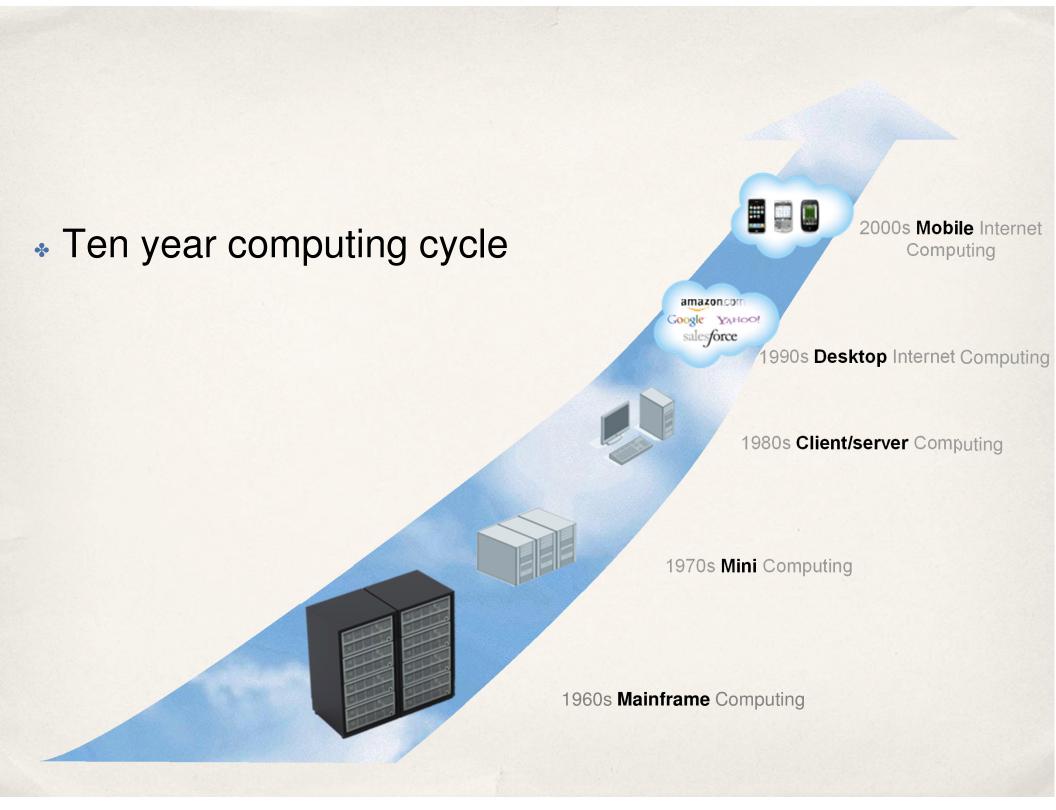
The cloud as architecture for collaboration

Modular, mobile, plug-and-play EHR technology

Simple, secure, Internet-based transport

Universal exchange language in XML





## Applications Moving to the Cloud



1960's Mainframe



1980's Client/server



Cloud Computing
Applications

## Platforms + Apps Moving to the Cloud





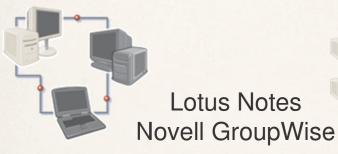


1980's Client/server



Cloud Computing
Platforms

## Collaboration Moving to the Cloud





SharePoint Groove File Sharing

1980's Work Group Computing

2000s Intranet Computing Today
Collaborative
Computing

facebook.

Webex

chatter

CITRIX

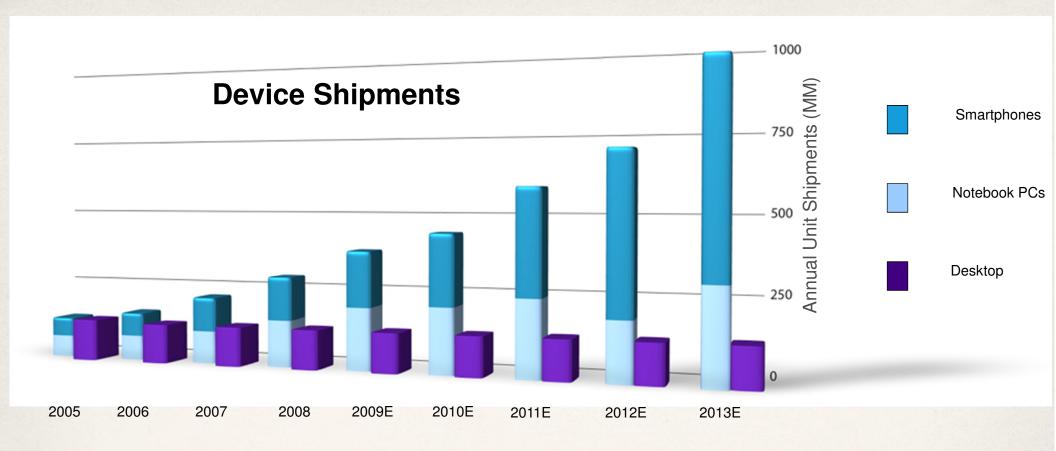
twitter

IBM Lotus**Live**™

# Modular, mobile, plug-and-play EHR technology

The "medical app store"

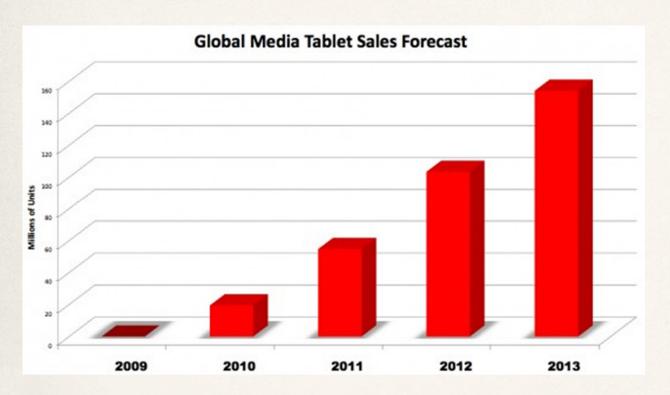




Source: Morgan Stanley Internet Mobile Report, December 2009

#### **Next Generation Devices**

There are now more cell phones than desktop computers!

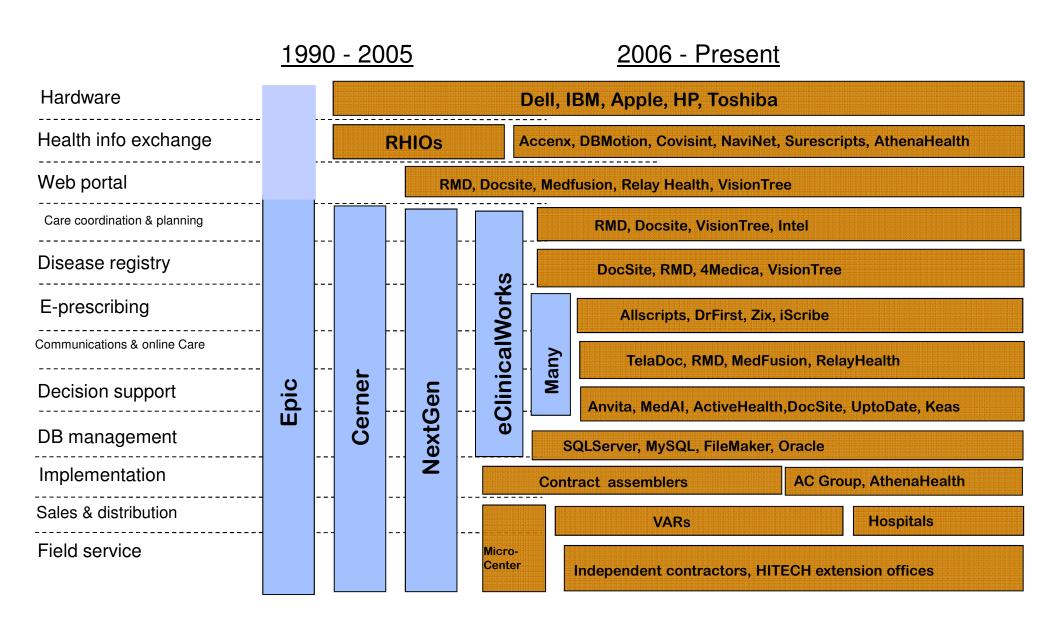




#### 30 million tablet sales in 2011?

Mobile revolution is well underway -- Gartner predicts 118 million tablets by 2014

### Changes in integrality/modularity have begun to alter the market for HIT

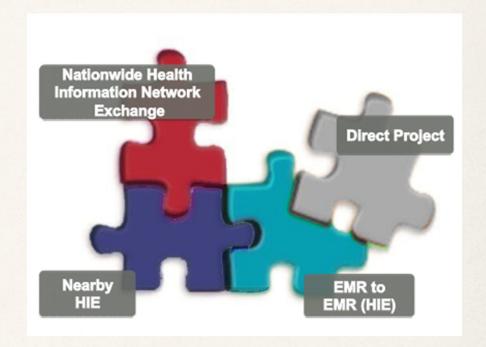


# ONC certification triples number of EHRs, many are Internet-based

- 200+ EHR technologies certified by January 1, 2011
- ~ 150 of these are either 'complete EHRs' or 'EHR modules' for ambulatory care
- half of these are cloud-based, both web-based and Internet-based
- ~ costs have decreased; between \$150-350/doctor/month
- ad-based EHR technologies are free of fees

#### Simple, Internetbased data transport

The Direct Project protocols and specifications to connect physicians



I'm sending you Mrs. Smith!

La, la, la... I can't hear you, can't hear you!



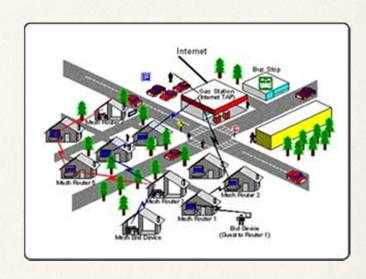


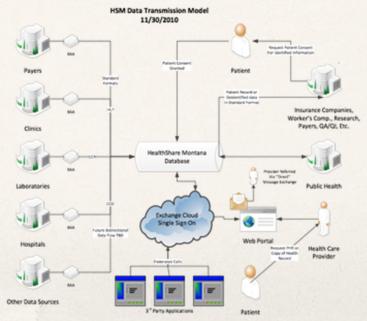




## Currently, there are three mechanisms for health data transport

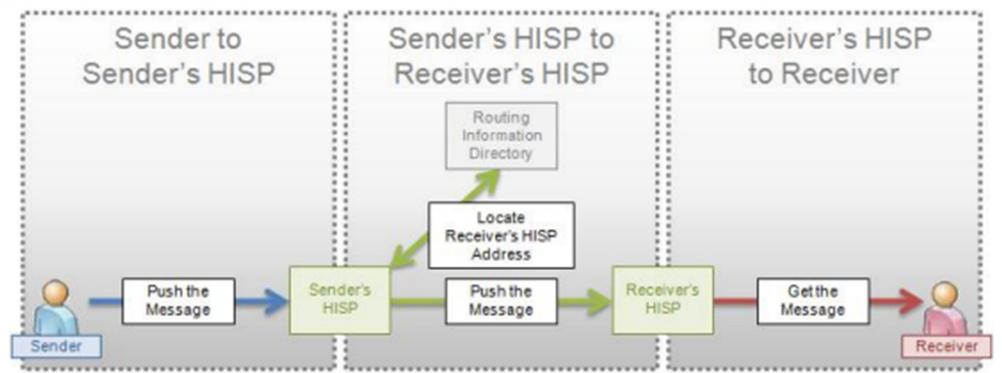
Fax, mail, and courier Enterprise-wide networks HIEs





### John Halamka, MD, on why we need a 4th transport system

\* A 'little guy' such as a 2 doctor practice in rural America wants to send content to another 2 doctor practice across town. These small practices should not have to operate servers or have to pay for a complex health information exchange infrastructure. Healthcare Information Services Providers (HISPs) should provide them the means to exchange data as easily as Google provides Gmail or Verizon FIOS provides ISP service. All HISP to HISP communications should be encrypted such that the sending practice and receiving practice can exchange data without any HISP in the middle being able to view the contents of the data exchanged.



The Direct Project Abstract Model

### The innovation: cross-network transport that is vendor neutral and uses open protocols

Simple, secure, vendor neutral, point-to-point e-mail with attachments

### ONC launches NHIN Direct, a simpler communications protocol

Tracking HITECH

#### **NHIN Direct**

Uses the standards, services and policy tools of NHIN for less complex environments.

#### Focus is on meaningful use.

Specifically: summary care records, referrals, discharge summaries and other clinical documents in support of continuity of care and medication reconciliation, and communication of laboratory results to providers.

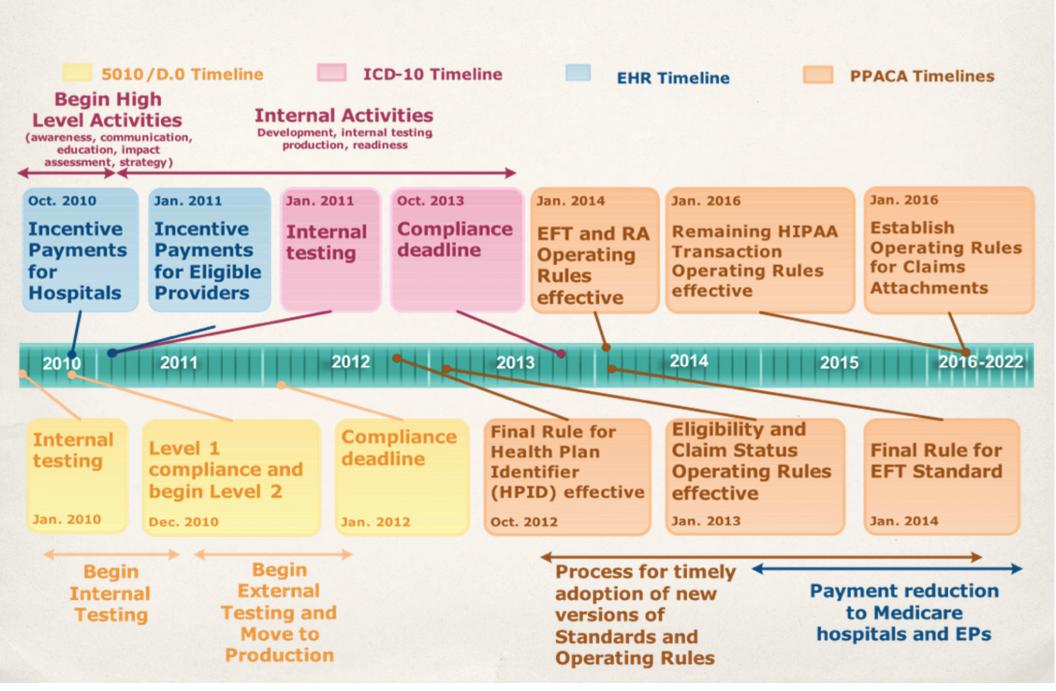
#### Concept grew out of a blog by Wes Rishel (Gartner).

Editorial: This has turned out to be a practical approach. Commercial initiatives are using the NHIN Direct standards to wrap services around. One example is the Surescripts clinical interoperability service connecting any US physician to any other.

#### Example Use Cases

- Primary care provider refers patient to specialist including summary care record
- Primary care provider refers patient to hospital including summary care record
- Specialist sends summary care information back to referring provider
- Hospital sends discharge information to referring provider
- 5. Laboratory sends lab results to ordering provider
- Providers without a fully certified EHR send and receive data
- Primary care provider sends patient immunization data to public health
- Pharmacist sends medication therapy management consult to primary care provider
- Provider sends patient health information to the patient
- Provider sends a clinical summary of an office visit to the patient
- Hospital sends a clinical summary at discharge to the patient

#### HIT Over the Next 5 Years



#### Gartner Hype Cycle

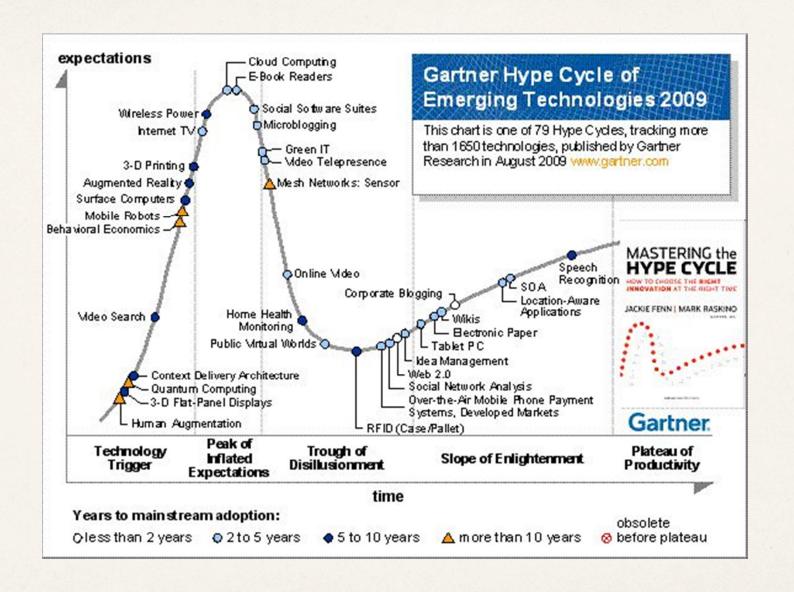
Peak of Inflated Expectations

Plateau of Productivity

Slope of Enlightenment

Trough of Disillusionment

Technology Trigger



## Accelerating interoperability

Getting really serious about using XML, RDF, JSON, etc. to make data and metadata computable



### PCAST report

- Recommends establishment of "universal exchange language" in XML
- Envisions "metadata-tagged data elements" that are websearchable, able to be assembled by providers and patients
- Highly critical of centralized database efforts, e.g. HIEs



#### REPORT TO THE PRESIDENT AND CONGRESS

DESIGNING A DIGITAL FUTURE: FEDERALLY FUNDED RESEARCH AND DEVELOPMENT IN NETWORKING AND INFORMATION TECHNOLOGY

Executive Office of the President

President's Council of Advisors on Science and Technology

DECEMBER 2010



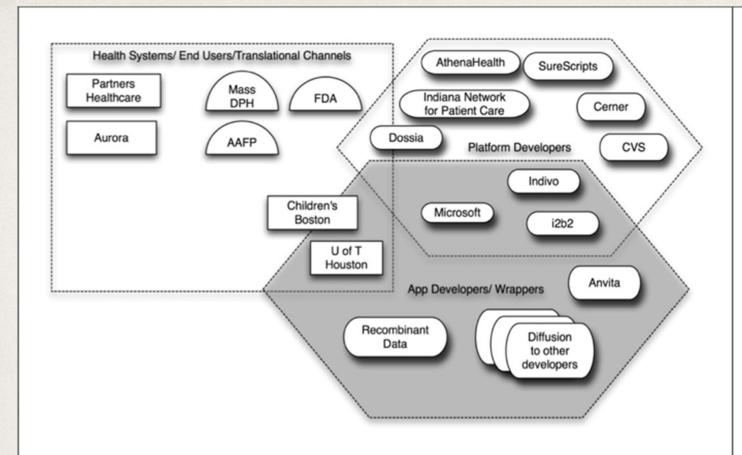


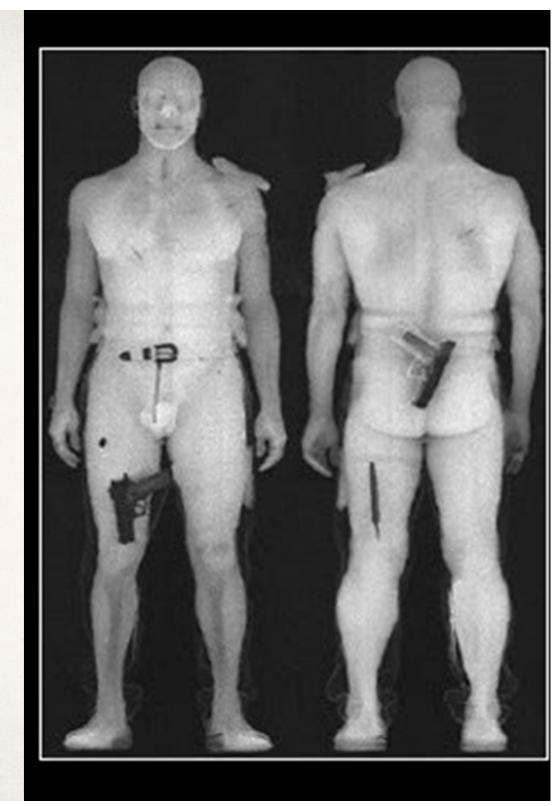
Figure 3. SMArt Ecosystem. Outlined are the three overlapping domains. In the upper hexagon are the parties developing platforms and within this proposal will be developing Healthcare Core Service Building Blocks (HCSBB) for use by SMArt apps. The hexagon below contains those parties who will be developing new SMArt apps or "wrapping" existing applications within the SMArt API. In the rectangle on the right are the channels for adoption, testing, and trialing of the SMArt apps on their platform of choice.

### **SMArt Ecosystem**

Researching "substitutable medical apps" that behave like the iPhone App Store

## Am I missing anything?

- David C. Kibbe, MD MBA
- dkibbe@aafp.org
- 913 205 7968
- Thank you!



### Study shows that EHRs are not so effective in coordinating care outside the practice

Focus on Care Communications

#### Phone interviews:

52 physicians from 26 practices that have deployed an EMR for 2 years.

4 vendor chief medical officers and 4 national thought leaders.

Coordination inside the practice was supported by many EMR features.

Coordination externally had most of the challenges.

Templates can load up notes with boilerplate and make them hard to read quickly.

EMRs may not have comprehensive applications for referral tracking.

Coordinating structured, codified data between different systems is difficult, most attached scanned documents as PDFs.

Notes may target satisfying billing issues and not clinical care coordination.

*Editorial*: The 6-task model captures the relevant issues. The study is a good summary of the interoperability and medical home issues that will continue to be discussed as physicians implement EMRs.

#### Principal tasks necessary for effective care coordination

- Maintaining patient continuity with the PCP/primary care team.
- Documenting and compiling patient information generated within and outside the primary care office.
- Using information to coordinate care for individual patients and for tracking different patient populations within the primary care office.
- Referrals and consultations (initiating, communicating and tracking).
- Sharing care with clinicians across practices and settings.
- Providing care and/or exchanging information for transitions and emergency care.

#### Study identifies 7 key EHR improvements for medical homes

Focus on Care Communications

Cites 4 peer-reviewed studies of medical homes highlighting the positive impacts of EHR. NC Medicaid, Geisinger, four small practices, and Group Health.

Authors identify 7 domains for EHRs that require development to help medical homes realize full potential. See table at right.

EHRs perform poorest in team care and care transitions.

Major work also in clinical decision support, particularly in chronic care management. Including registries and metrics.

*Editorial:* Drs. Bates and Bitton from Brigham and Women's publishing in Health Affairs. An insightful roadmap of where to put product development dollars.

EHR Domain	Potential benefits for patient-centered medical home	Patient-centered medical home implementation challenges
Clinical decision support	Improved care processes and intermediate disease outcomes; reduced adverse drug events	Insufficient decision-support features in many available EHRs
Registries	Better patient and outcome tracking; improved work- flow efficiency	Highly functional, multi- disease tools not widely available
Team care	More patient-centered, collaborative care; changed patterns of specialty referral	Need communications capacities beyond notes (i.e., real-time specialist consultation)
Care transitions	Info exchange during care transitions; helping ensure timely follow-up visits and monitoring	Difficult to integrate inpatient and outpatient EHRs
Personal health records	Increased patient engagement and self- efficacy; portable and real- time info	Low patient uptake; low health literacy; providers hesitant to share info
Telehealth	Improve CHF outcomes; less need for in-person; more patient engagement	Outside EHR functions; extra cost; help practices select
Measure- ment	More individual and aggregated data; transparent benchmarks	EHRs unable to abstract; need harmonized quality and efficiency metrics

More Info: Health Affairs





#### Data Standards

Tuesday, December 21, 2010

#### New Panel To Consider Common Language for Health Data Exchange

The Office of the National Coordinator for Health IT plans to establish an advisory panel to evaluate strategies for implementing recommendations from a recent report by the President's Council of Advisors on Science and Technology, *Government Health IT* reports.

National Coordinator for Health IT David Blumenthal described the plans for the advisory panel during last week's meeting of the Health IT Standards Committee.

#### **PCAST Report**

The PCAST report recommended that the federal government encourage the adoption of a common language for exchanging data between electronic health record systems.

The report called for ONC and CMS to develop the technical definitions and descriptions for the universal exchange language and include them in the 2013 and 2015 requirements for the meaningful use of EHRs.

