Health Information Exchange: the foundation of successful health reform?

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Can health IT help us “bend” this curve?

Projected Spending on Health Care as a Percentage of Gross Domestic Product

Source: Congressional Budget Office, 2008

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National Priorities Partners
Areas of “overuse”

- Inappropriate medication use, targeting:
  - Antibiotic use
  - Polypharmacy (for multiple chronic conditions; of antipsychotics)
- Unnecessary laboratory tests, targeting:
  - Panels (e.g., thyroid, SMA 20)
  - Special testing (e.g., Lyme Disease with regional considerations)
- Unwarranted maternity care interventions, targeting:
  - Cesarean section
- Unwarranted diagnostic procedures, targeting:
  - Cardiac computed tomography (noninvasive coronary angiography and coronary calcium scoring)
  - Lumbar spine magnetic resonance imaging prior to conservative therapy, without red flags
  - Uncomplicated chest/thorax computed tomography screening
  - Bone or joint x-ray prior to conservative therapy, without red flags
  - Chest x-ray, preoperative, on admission, or routine monitoring
  - Endoscopy
- Inappropriate nonpalliative services at end of life, targeting:
  - Chemotherapy in the last 14 days of life
  - Aggressive interventional procedures
  - More than one emergency department visit in the last 30 days of life

- Unwarranted procedures, targeting:
  - Spine surgery
  - Percutaneous transluminal coronary angioplasty (PTCA)/Stent
  - Knee/hip replacement
  - Coronary artery bypass graft (CABG)
  - Hysterectomy
  - Prostatectomy

- Unnecessary consultations

- Preventable emergency department visits and hospitalizations, targeting:
  - Potentially preventable emergency department visits
  - Hospital admissions lasting less than 24 hours
  - Ambulatory care-sensitive conditions

- Potentially harmful preventive services with no benefit, targeting:
  - BRCA mutation testing for breast and ovarian cancer – female, low risk
  - Coronary heart disease screening using electrocardiography (ECG), exercise treadmill test (ETT), electron-beam computed tomography (EBCT) – adults, low risk
  - Carotid artery stenosis screening – general adult population
  - Cervical cancer screening – female over 65, average risk and female, posthysterectomy
  - Prostate cancer screening – male over 75

(See U.S. Preventive Services Task Force D Recommendations List at www.ahrq.gov/clinic/prevenix.htm)
CPOE that records imaging indications

**Figure 1**

At least one box MUST be selected from either of the following groups

**LOW BACK SIGNS / SYMPTOMS**
- Back Pain persisting for less than 1 month
- Back Pain persisting for more than 1 month despite conservative treatment
- Back Pain persisting for less than 1 month, but severe enough to require immediate intervention (surgery or injection)
- Back pain improved with exercise
- Sciatic leg pain (sciatica) pers
- Sciatic leg pain (sciatica) pers
- Radiculopathy (such as pain, r
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- Pain in the legs relieved when
- Neurogenic Claudication
- Symptoms of Cauda Equina
- Lower extremity weakness

**KNOWN DIAGNOSES**
- Cauda Equina syndrome
- Demyelinating disease with sj
- Disc disease
- Kyphosis
- Osteoporosis
- Scoliosis
- Spinal Stenosis
- Spine fracture (Traumatic) spe
- Spondylolisthesis

**ABNORMAL PREVIOUS**
- Abnormal bone scan
- Abnormal x-ray DJD

Information for Radiologist (only 1)

**Figure 2**

Lumbar Spine MRI has low utility for the clinical indications provided

- Indicated: 7-9
- Marginal: 4-6
- Low Utility: 1-3

Alternate procedures to consider:
- X-Ray
- CT

Options:
- Proceed with exam
- Cancel or select new exam
- Change indications and resubmit

Order patient decision aids (only available to PCP’s with OnCall accounts):
- Acute Low Back Pain: Managing Your Pain Through Self Care
- Chronic Low Back Pain: Managing Your Pain and Your Life
- Herniated Discs: Treating Low Back and Leg Pain
- Spinal Stenosis: Treating Low Back and Leg Symptoms

Figure 2: Screenshot of the DS feedback displayed after submitting a request for MR imaging of the lumbar spine with symptom of “back pain improved with exercise” and abnormal result at previous examination of “abnormal x-ray DJD [degenerative joint disease].” *PCP’s = primary care physicians.
Clinical decision support *in action*

Effect of Computerized Order Entry with Integrated Decision Support on the Growth of Ambulatory Procedure Volumes: A Linear Time Series Analysis

![Figure 4](image)

*Figure 4:* Scatterplot of outpatient CT examination volumes (y-axis) per calendar quarter (x-axis) represented by red diamonds. Solid line represents linear component of the piecewise regression with breakpoint at quarter 4 of 2004 and accounting for outpatient visit volume. Dashed line shows projected linear growth without implementation of ROE and DS system. Dotted line and teal circles depict number of CT examinations ordered through computer order entry. Appropriateness feedback was started in quarter 4 of 2004 and continued through the duration of the study (arrow at lower right).

*Bending the curve!*

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Does anyone object when we bend the curve?
The true political goal is cost control. For the Pete Stark Democrats whose ambition is Medicare for all -- no exceptions -- giving government exclusive control over electronic health information and reporting is a step toward "comparative effectiveness" research. That in turn will be used to impose price controls and deny some types of medical treatment and drugs. And because government is able to skew the whole health system through Medicare and Medicaid, comparative effectiveness could end up micromanaging the practice of medicine.
The controversy over meaningful use
“At the heart of our health reform efforts is the use of data to reform payment structures and procedures, manage clinical quality, improve efficiency, and drive improvements in public health.”

– David Blumenthal – Health Affairs: June 2010
Two converging, uncertain paths

- Federal health policy
- Private sector behavior (market driven and responding to policy)
 ACA milestones that feed off clinical information improvement

- A National Strategy for Improving Health Care Quality – 2011
- Key National Indicators Commission – 2011
- Medical loss ratio penalties – 2011
- Public funding for measures development @ $75M/year, including 10 outcome measures for chronic disease – 2011
- Medicare Hospital Value-based purchasing program, including efficiency measures – 2013-14
- Medicare data available – 2012
- Medicare bundled payment demo – 2012
- Medicare physician value-based payment modifier – 2012
- Medicare medical home demonstrations – 2012
- HHS standards for health risk assessments – 2011
- Medicaid Quality Measurement program – 2013
- Disparities data collection standards – 2012
- Medicare Physician Compare website – 2011, with performance data 2013
- Quality measures required for value-based purchasing for long-term care, rehab, psych hospitals, etc. – 2014
HITECH and related programs

- EHR incentive program starts 2011
  - Certified EHR technology, including modular
  - Meaningful use Stage 1
    - Functional objectives
    - Quality measures: core and menu
  - Penalties 2016+

- State HIE Cooperative Agreements
- NHIN and NHIN Direct
- BEACON communities
- Regional extension centers
- Workforce ...
A federal, policy strategy

- The approach to ‘meaningful use’ is designed to create a foundation for comprehensive reform of health care
- Starts with *Health Outcomes* as policy priorities
  - Improve quality, safety, efficiency, and reduce disparities
  - Engage patients and families
  - Improve care coordination
  - Improve population and public health
  - Ensure adequate privacy and security protections for personal health information
Stage 1 Meaningful use requires sharing health information – a beginning

- Transmit prescriptions
- Import lab results into EHR
- Give patients discharge & visit summaries
- Send clinical information to other providers
- Send immunization and public health data
- Send quality measures to CMS
Federal “bending the curve” requirements for health IT

- Payment reform and care redesign
  - Gain-sharing
  - Episode payment
  - Accountable care organizations
  - Medical home

- Data integration across settings and time
  - Reducing redundant tests
  - Improving patient safety
  - Permitting more remote care, self-care, innovation

- Rapid learning and dissemination
  - PCORI – comparative effectiveness research
  - Federated data networks
More elements of “bending the curve”

- Administrative simplification
  - Streamlined enrollment into proper programs
  - Eligibility checking
  - Claims submission and status checking

- Insurance exchanges
  - Risk adjustment
  - On-line choice and enrollment tools

- Public & population health
  - Immunization registries
  - Syndromic surveillance
  - Drug and device recalls and warnings
  - Registries – conditions, devices
Linking HIE to Berwick’s ‘Triple Aim’

- IHI Triple Aim
  - Population health (health status measures)
  - Patient experience (CAHPS-like measures)
  - Cost of care (total cost per person)

- Information exchange for measurement
  - Health plans & CMS well-situated to aggregate total cost of care
  - MU 2013 will begin to address patient self-report, but:
    - Data platform missing
    - Sampling, methodology missing
    - Likely to attract sharp opposition

- Important to advocate and demonstrate systems for addressing patient-reported measures

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Linking HIE to the ‘Triple Aim’

- **Information exchange for management**
  - Discern and manage population and patient health risks
  - Share information across care team and program teams; make health record accessible to all appropriate professional and community (‘alternative’) resources
  - Implement clinical decision support across virtual network
  - Discern and address patient expectations
  - Deliver and capture information from the home/device
  - Monitor conformity to CDSS, patient expectations
  - Transparency of ‘network’ and components’ performance
Meanwhile, at the provider level …

EHR incentives are modest.
When we reach the network “tipping point” is uncertain.
Information exchange is not inherently worthwhile (actually, pretty risky!) –

*HIE is only a means to achieving other business objectives.*
So, what motivates health information exchange adoption?

1. Clinical good intentions and requirements – generally satisfied by phone and fax

2. Business integration – Kaiser, Partners, medical groups, IDNs

3. Payment incentives (public or private)
   - Specific to health IT
   - Linked to quality and efficiency improvements (P4P)
   - These are merging (PPACA and policy trends)…!
What are the key directions for business integration?

- Provider acquisition and consolidation
- ACO formation: hospital-physician (and possibly health plan) connections
- Reduce practice variation to respond to market pressure
- Increase operating efficiencies within contracted units
What are the new opportunities for maximizing payment?

- Meaningful use incentives
- Medical home care management fees
- Gain-sharing
- Accountable care organizations
- Episode/bundled payment
- Pay for performance programs
  - Including readmission avoidance, potentially avoidable complications (Prometheus)

Will these be specified to prompt sustainable, robust clinical information exchange?
Where are we now, in developing HIE to support these policy and market objectives?
There have been increases in functionality amongst health information exchange initiatives with respect to the meaningful use rules.

The top 3 functionalities being provided by the initiatives:
- Connectivity to electronic health records (67)
- Results Delivery (50)
- Health Summaries for continuity of care (49)

The top 5 types of data exchanged by the initiatives:
- Laboratory Results (68)
- Medication Data (63)
- Outpatient laboratory results (62)
- Allergy Info (61)
- Emergency Department episodes/discharge summaries (58)

The top 3 services offered by the state designated entities:
- Electronic prescribing and refill requests (4)
- Prescription fill status and/or medication fill history (3)
- Electronic eligibility and claims transactions (3)
Short-term HIE imperatives

- Governance, planning, etc
- Uniform policy framework
- Core infrastructure
  - Authentication and identity management
  - Provider directories
  - Public health interface
  - NHIN Direct
  - Interoperability standards
- Market analysis of needs, sustainability
- Enhanced infrastructure – selective
  - Record locator service or MPI
- Real-world impact – c. 2012?
  - Point-to-point exchange of summary data
  - Improved clinical interfaces
North Carolina: Core Services and Value-Added Services

Core Services

- Security Services
- Patient Matching
- Master Facilities Index
- Master Clinician Index
- NHIN Gateway

Service Access Layer: Transport, Orchestration, Audit, Reporting

Value-Added Services

- Lab Normalization
- Immunization
- Medication Management
- Quality Reporting
- Lab Results Routing for Reporting
- Radiology Image Delivery
- Procedural Results Delivery
- CCD Translation
- Disease Surveillance
- Access to Aggregated Data
- Clinical Decision Support

Participating Organizations with gateways to access Core Services

HIO
Hospital-Provider
Clinic Network
Fed Agency

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As public policy and payment systems start changing, what functions will providers want to maximize?

What services will increase in value to the provider community?
Provider imperatives for HIT

- Transactional efficiency
- Referrals and follow-up, care coordination, readmission reduction
- Clinical decision support implementing appropriate use, treatment selection, test ordering, device selection
- Network loyalty by providers
- Patient loyalty to network providers
- Quality reporting to maximize incentive payments (MU, P4P, PQRI)
But have we settled too quickly on a provider-centric HIE paradigm?

- Likely change in locus of power in health care
  - Rapid increase in consumer cost responsibility
  - Strong public resistance to member “lock-in” or enrollment to a care system (vs. “choice”)
  - Growth of Health 2.0, social media, tools
  - Urgency of care system innovation: care in the home, mall, via smart phone, non-MD providers

- Where will the longitudinal record live?
  - In the cloud – or the HIE?
  - Duplicated and maintained by every provider?
  - With the patient?
Patient engagement has increased dramatically. More organizations are providing services to patients and providing access to patient data through health information exchange.

- 44 initiatives allow patients to view their data, up from 3 in 2009
- 31 initiatives allow patients to contribute information on their health status, up from 7 in 2009

From: The State of Health Information Exchange in 2010: Connecting the Nation to Achieve Meaningful Use eHI’s Seventh Annual Survey
Coming Soon: The Blue Button

My Health.eVet (MHV) has made it easy to keep track of your personal information. MHV is all about you and your health. Part of your personal online health journal is your identification. When you registered for My Health.eVet, you entered important information about yourself. This is where you will find it, along with other important facts like your login information, blood type and emergency contacts.

In Case of Emergency
- Keep your emergency contacts in one place...
  More >

My Profile
- Your name, address and identifying information...
  More >

Download your Data
- Download, print, or share VA health data. It is simple, safe and reliable.
  More >

My Account
- Manage your account, in-person authentication...
  More >

Change your Password
- Change your My Health.eVet password here...
  More >

View My Links Information (self-entered)
(Personal Health Journal of Frederick Deese)

Quick Links
- VA National Suicide Prevention Hotline
  If you are in crisis call: 1-800-273-TALK (8255)
- In-Person Authentication
- Flu Information
- My Health.eVet Learning Center
- VA Mental Health Services
- View the MHV
Can the blue button launch consumer apps?

Challenges
Interested in submitting your own challenge? Click here!

Developer’s Challenge for Consumer Apps to Visualize Health Care Quality Measures
Challenger: Health 2.0 with support from the U.S. Department of Health and Human Services
Develop prototype(s) for web and/or mobile communication technology applications to represent at least one Medicare dataset.

Blue Button Challenge
Challenger: Markle Foundation and the Robert Wood Johnson Foundation
Bring data sets from the VA and CMS to life.
Apply to Solve!

Accelerating Wireless Health Adoption through a Standardized Social Network Platform
Challenger: West Wireless Health Institute
Create an application that will integrate

Project HealthDesign
Developer Challenge
Challenger: Robert Wood Johnson Foundation, Pioneer Portfolio and California HealthCare Foundation
Create applications around winners of Project HealthDesign.
Why a blue button?

If it became a common feature of health IT, the blue button would:

- Change consumers’ expectations and help them become more efficient in managing their health information.

- Increase market pressure for technical standards to exchange electronic health data.

- Enable innovation through a host of applications and services that could add significant value to individuals by using their information with their permission.

  - For example: tools to help people with diabetes track their blood sugar, medication use, and preventive care.
Recommendations for HHS: Make the blue button a priority

- Specify the download capability as an allowable means for providers to deliver electronic copies of health information, consistent with the policy and technology recommendations of the Markle Connecting for Health Common Framework.
- Make the download capability and Common Framework policy recommendations a requirement of qualified health IT so that providers using qualified systems will have this capability.
- Make the download capability a core requirement for federal- and state-sponsored health IT grants and projects.
Recommendations for private sector & HIEs

- Include the download capability in procurement requirements along with the privacy practices we recommend in the full Markle Connecting for Health Common Framework.

- Implement the download capability consistent with the policy and technology recommendations of the Markle Connecting for Health Common Framework.
Environmental trends and wild cards

- Political changes and stakeholder push-back
- Policy environment: all payer claims data; gag rules; litigation; patient charter; rules for ACOs, Insurance Exchanges
- Scope and sophistication of measurement requirements
- Pace of payment change; persistence of FFS payment; disincentive to HIE
- Role of cross-setting aggregation - registries, longitudinal health records
- Evolution of modular EHRs
- Shift to cloud, mobile, personal apps
- HIEs’ ability to find the killer app – sustainable business model
If we get this right, what can we hope for?

- More reliable and accountable bedside decision-making
- Capability for implementing clinical decision support
- Support for “virtual ACO” or similar models: more clinical integration without tight business integration (at first)
- More informed patients and more vehicles for pushing and pulling information from patients (including self-care services, home monitoring, symptom and outcome reports, patient experience measures)
- Aggregation of clinically-rich quality and efficiency measurement data (but not necessarily through HIE directly)
The next few BIG questions

- Will EHR adoption reach a tipping point?
- Will federal (and private) payment changes be sustained, and drive health professionals towards information-based practice?
- Will these payment changes induce more information exchange?
- Will state HIE implementations permit fluid, interoperable, national information exchange?
- Can we show that care is getting better and more affordable as HIT adoption grows?
- Will the patient or the doctor be at the center of the 21st century health system?
Thanks ...

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