“Emergence of a National Health Information Technology Policy”

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First, Do No Harm …

• The longstanding guiding principle of healthcare is *primum non nocere*.

Hippocrates
Immutable Characteristics

• Limits on Memory, Mind, & Muscle.
  – Humans (even Doctors) forget.
  – Humans can’t handle more than 7 concepts at once while making a decision.
  – Humans (especially Doctors) document poorly.

• Data Handling is easy for Machines.
  – Automated Protocols, Measurement and Monitoring, Follow-up Ticklers, and Alarms.
  – Information is legible and accessible anywhere.
  – Complete contextual recall of all related information.
  – Rapid visual (graphical) presentation and communication of related clinical data.
Industry Safety Record: Will contrast drive future of HIT?

• Aviation errors/failures (in scheduled airline flights with more than 9 seats)
  – In 17 million hours flown,
  – 2 fatal accidents resulting in 22 deaths last year.
  – Immediate crash investigations and rapid fixes.

• Medical errors/failures (in hospitals) cause
  – In 34 million hospital admissions,
  – 44,000 to 98,000 hospital deaths per year.
  – Equivalent to 1 jumbo jet crash every day of the year!
  – Now 4th leading cause of death.
  – On average, 17 years to put only 14% of the results of clinical research into common clinical practice.
Quality Controls in Aviation

• Standards for operations and equipment
• Check lists for work flow
• Automated instruments, backups, limits and alarms
• Full time monitoring by more than one professional on site, plus remote air traffic controllers
• Communications in common language with standardized vocabulary
• Public intolerance for accidents
• ‘Black Box’ recordings for investigations
• Requirement to report every accident/serious error
• Government support, investigation, and regulation
  – NTSB
  – FAA
Cost, Quality, Standard Relationship

• Standards-based automation of routine functions lowers rate of rising costs (labor).
  – Only possible if accompanied by process redesign.
• Standardized data increases its usefulness for quality improvement studies.
• Local implementation of HIT is limited; interoperability is required to enable full effect.
• Clinical information standards enable cost-effective IT support at point of clinical decision making.
  – Which in turn, leads to fewer errors, higher quality care, and lower costs (e.g. e-Rx, CPOE, CDS, EHR).
Increased Momentum at the National Level

• Governmental Activity
  – Increased focus in all agencies of the Federal government – AHRQ, CDC, CMS, DoD, NIH, OPM, VA
  – Creation of the Office of the National Coordinator for HIT and Release of Strategic Framework by DHHS in 2004
  – AHRQ’s provision of $139 million in funding for HIT and launch of National Resource Center
  – CMS’ launch of several programs focused on quality and HIT, including DOQ-IT, Section 649 pay for performance/IT demonstrations, etc.
  – President’s Information Technology Advisory Committee report and mentions in presidential speeches

• Congressional Activity
  – Legislation on HIT being introduced by both sides of Congress
Increased Momentum at the National Level

• Private Sector Activity
  – eHealth Initiative’s Connecting Communities for Better Health Program providing seed funding and technical support to states, regions, and communities involved in health information exchange.
  – Connecting for Health, a public-private collaborative launched and funded by the Markle Foundation, with additional support from the Robert Wood Johnson Foundation, achieved consensus among multiple stakeholders on a Roadmap for Electronic Connectivity.
  – Several large employers and health plans are now conducting “market experiments” involving incentives to practicing clinicians, hospitals and other providers for improving quality using HIT (e.g. Bridges to Excellence).
eHI program: Connecting Communities for Better Health (CCBH)

• Conducted in cooperation with HRSA/HHS
  – provides seed funding and support to state, regional, and community-based health information exchange initiatives

• Developing inventory of regional health information exchange initiatives (what are they doing, what stage, etc.)

• Launched State HIT Policy Summit Initiative, designed to bring together state policy-makers, healthcare and business leaders to accelerate HIT and health information exchange

• Disseminating resources and tools and building a dialogue across communities
  – May 24-26, 2005 — 2nd Annual Connecting Communities Learning Forum
CCBH Communities Funded in Phase I

- Connecting Colorado (Denver, CO)
- Indiana Health Information Exchange (Indianapolis, IN)
- MA-SHARE MedsInfo e-Prescribing Initiative (Waltham, MA)
- MD/DC Collaborative for Healthcare Information Technology (Baltimore/Washington Metro Area)
- Santa Barbara County Care Data Exchange (Santa Barbara, CA)
- Taconic Health Information Network and Community (Fishkill, NY)
- Tri-Cities TN-VA Care Data Exchange (Kingsport, TN)
- Whatcom County e-Prescribing Project (Bellingham, WA)
- Wisconsin Health Information Exchange (National Institute for Medical Informatics – Midwest) (Milwaukee, WI)
What Problems Are They Trying to Solve?

• Improving Healthcare Delivery at Point of Care
• Reducing Costs – Achieving Efficiencies
• Biosurveillance/Public Health Initiatives
• Quality Improvement Initiatives
• Reaching out to Remote, Rural, and Underserved Areas
AHRQ HIT Grants

- In September 2004, the Agency for Healthcare Research and Quality (AHRQ) awarded $139 million in contracts and grants to promote the use of health information technology (health IT) through the development of networks for sharing clinical data as well as projects for planning, implementing, and demonstrating the value of health IT.

- The goals of these research projects are to:
  - Improve patient safety by reducing medical errors.
  - Increase health information sharing between providers, labs, pharmacies, and patients.
  - Help patients transition between health care settings.
  - Reduce duplicative and unnecessary testing.
  - Increase our knowledge and understanding of the clinical, safety, quality, financial, and organizational value and benefits of health IT.
AHRQ State and Regional Demonstration Contracts

• AHRQ awarded 5 State or State-based contracts totaling $25 million over 5 years to develop State-wide networks allowing major purchasers of health care, public and private payers, hospitals, ambulatory care facilities, home health care providers, and long-term care providers to use health IT to communicate and share information.

• The 5 States are Colorado, Indiana, Rhode Island, Tennessee, and Utah
“What We Have Heard”

• Key Themes
  – Leadership
  – Building Trust and the Need for Collaboration
  – Financing
  – Standards
Leadership and the Need for Collaboration

• Competing priorities exist
• Building trust was cited as key barrier given the intensely competitive environment and the fragile financial condition of many institutions
• Broad recognition of the need for collaboration and coordination to pursue health information exchange (HIE) efforts
• Several HIE efforts in different stages across the states
• More public health and rural participation is needed
Financing

- Consensus that financing is one of the primary barriers to HIT adoption
- Recognition that all stakeholders should invest some “skin” in the process to address misaligned incentives and create sustainable models for HIE
- Financing needed for not only hardware, software and applications, but also the human resources for implementation
- Efforts related to addressing the challenges of Medicaid should be aligned with HIT discussions
Standards

• Recognition of recent governmental leadership in this area—particularly at the federal level and encouragement of expanded leadership at the state level

• Role of standard-setting in assuring base-line quality in products (measure of protection for “nervous HIT buyers”)

• Recognition of the need for adoption of standards required for interoperability
Emerging Guiding Principles

• Approach for Organizing Work
  – HIT adoption and health information exchange will require local / regional collaboration; a “state-wide, one-size-fits-all” approach will not work
  – Incremental; no “big bang” approach
  – Minimally invasive with limited disruptions
  – Recognized need for state-wide dialogue, collaboration and coordination
  – Also great interest in sharing of resources, insights and tools to support implementation by stakeholders in different parts of the region
Emerging Guiding Principles (cont)

• How the State Can Play a Supportive Role
  – Play a visible leadership role by championing and raising awareness of the need for HIT to address healthcare challenges
  – Work to assure that laws are supportive of and not barriers to HIT adoption
  – Recognize the importance of HIT in role as purchaser and administrator of the Medicaid and state employees health benefits
  – Potential key roles: standards, financing and removal of legal barriers
Emerging Guiding Principles (cont)

• Organization and Governance Attributes
  – Convening by trusted, neutral party
  – Representation of all of the diverse stakeholders; “fair” governance
  – Members in it for the “long haul”
  – Strive for consensus
  – Open disclosure of biases and interests
  – Shared vision and goals
  – Engagement of consumers and patients critical
Emerging Guiding Principles (cont)

• Sharing Burden and Benefits
  – Must create value for all participants
  – Critical to demonstrate value both globally and for each stakeholder interest
  – Must address the highly competitive environment
  – Look for incremental value gains – projects that will immediately return value – as you move towards your longer-term goal
Emerging Guiding Principles (cont)

• Approach for Technical Aspects
  – Importance of assuring privacy and security
  – Incremental, build upon what exists…leverage existing investments
  – Need clear mechanism to accurately identify, link or “match” patients and providers
Common Themes Across Models

- Non-profit, neutral entity that brings together multiple stakeholders in trust.
- Healthcare stakeholders, business community, and state and local public sector leaders all play a critical role.
- Incremental steps that take you towards a long-term vision and strategy are key.
eHI Parallel Pathways to Quality Healthcare

• In each of 5 areas of focus:
  – quality expectations,
  – physician practice HIT capabilities,
  – health information exchange capabilities,
  – financial incentives, and
  – value to purchasers and payers,

• 3 conceptual stages or phases in the pathway through which each healthcare entity must evolve to reach the goals of fully integrated, interoperable health information exchange.

• Different environments can proceed through these stages (and be incented) at different levels and at different times depending on their capability.
Quality Expectations

1. Agree on common set of standardized measures (e.g. NQF). Report initial set based on capabilities.

2. Report measures that leverage expanded clinical data capabilities to document improved process of care.

Physician Practice HIT Capabilities

1. Require usage of HIT by physicians (not just office staff). May use self-contained EHR, prescription writer, etc.
2. Require HIT connectivity with clinical data sources (health information exchange).
   • Must include secure communications with more than one other organization using national standards (labs, pharmacies, hospitals, etc.).
   • May include ability to produce de-identified patient information for quality programs.
3. Require robust IT supported clinical environment supporting chronic care management.
   • Must include EHR with integrated decision support and ability to accept and integrate structured, computable data from other organizations.
   • Removing artificial barrier between clinical EHR and administrative (billing) information exchanges has the potential of providing much long-term ROI.
Health Information Exchange Capabilities

1. Launch health information exchanges based on national standards.
   1. Develop sustainable model based on expectations.

2. Fully operational, secure health information exchange available to all authorized healthcare organizations.
   • Sending standardized data to physicians (from data sources such as labs, pharmacies, hospitals).
   • Sending reports of quality measures to purchasers with provider consent under contract.

3. Expand services to support physician adoption (QIO support, data accuracy checks, etc.).
   • Electronic access to evidence-based, national clinical decision support rules (for integration with computer aided decision support systems in EHRs).
   • Use same information exchange infrastructure for real-time administrative communications with payers.
Financial Incentives

1. Reward use of HIT and electronic reporting of subset of measures
   • “pay for quality data”

2. Reward interoperable HIT with connectivity and electronic reporting of full set of clinical measures that emphasize measurement of improvements in process of care
   • “pay for documentation of quality process”

3. Reward electronic documentation of improved clinical (and ultimately efficiency) outcomes and phase out rewards for HIT alone
   • “pay for documentation of quality outcomes”
Value to Purchasers and Payers

1. Communicate common set of expectations and incremental roadmap for getting to outcomes.
   • Achieve immediate gains in quality.

2. Enhance efficiency and timeliness of reporting.
   • Improve ability to target areas in need of focus.
   • Large improvements in cost and quality and gains in efficiency.

3. Full migration to payment based on outcomes.
   • Flexible HIT infrastructure to support changing expectations (reports of clinical values rather than percentages that meet a certain value allow most flexibility in analysis and feedback).
   • Provides the opportunity for payers to move ‘coding’ for reimbursement into their adjudication process through automation based on actual clinical documentation.
   • Re-engineering of reimbursement systems could result.
Four Essential Elements of HIT

President’s Information Technology Advisory Committee (PITAC)

Secure Private Interoperable Health Information Exchange

Lower Cost
Fewer Errors
Higher Quality

June 2004 Report
Design of a National Health Information Environment -- Key Elements

- Consensus under Connecting for Health:
  - Establishing an information environment that facilitates and structures connectivity
    - Encourages adherence to precisely defined, uniform technical standards, common policies, and common methods, known as the "Common Framework".
    - Connectivity built on the Internet and other existing networks.
    - Leveraging existing open, non-proprietary standards.
    - The environment is private, secure, and is built on the premise of patient control and authorization.
  - Defining a Health Information Environment that allows diverse networks of users, grouped together through proximity, stakeholder trust, and patient care needs, to exchange information efficiently.
Design of a National Health Information Environment -- Key Elements

• Consensus (continued): :
  – The "build" of the new information environment happens incrementally, through accretion.
    • A mechanism for validating compliance with the standards of the Common Framework is required for the early phases, but the network becomes self-validating over time.
  – Personal health information remains with health care providers, patients, and other trusted partners
    • accessed and exchanged only when it is needed, with proper authorizations and security.
  – Creating a national, public interest Standards and Policy Entity (SPE) that recommends the standards and policies for the Common Framework and the ongoing requirements for interoperability.
Design of a National Health Information Environment -- Key Elements

• Consensus (continued):
  – Accurate patient identification based on uniform and standardized methodologies but without a new, mandated, national, unique health identifier.
    • Record Locator Services (RLS) are created and controlled regionally, to help authorized parties learn where authorized and pertinent information is housed - but never containing that information.
  – Continuing investments in HIT come from multiple sources. Incentives built into routine payment and operations at the regional and local level and tied to use of the Common Framework.
    • The information environment facilitates growth, innovation and competition in private industry.
The Connecting for Health “Common Framework”

• Premised on secure transport over the Internet.
• Provides minimal but basic components for the infrastructure including:
  – secure connectivity,
  – reliable authentication, and
  – a minimum suite of standards for information exchange.
• Comprised of network software, common policies, documents, and methodologies that can be shared in the public domain.
Connecting for Health Framework
Reference Implementation Goals

• Provide at least one working example of each component of the Connecting for Health “Common Framework”

• Minimum necessary technical requirements for sustainable, resilient, common, standards-based HIE

• Minimize duplicative efforts—we all need to develop some minimum common set of technical components for community-based HIE in order to realize the goals of NHIN
Why do a Reference Implementation?

• Demonstrate that the CfH Common Technical and Policy Framework can be implemented
• Provide a “jump start” for others who want to develop the software components that are needed to create a HIE following the Common Framework
• Provide input to the Common Framework development process that results in more fully developed specifications and implementation guides
  – In order for various implementations to interoperate, protocols and messages must be completely and rigorously specified.
What the Reference Implementation Provides

• Record Locator Service
  – “Meta MPI” or Index
  – HL7 message query and response specification
  – A basic algorithm for matching patients based on demographics

• Medication list use case
  – HL7 message query and response specification

• Laboratory result use case
  – HL7 message query and response specification

• Specifications and implementations that developers can use to create components that will interoperate with other profiles that follow.
Required Standards

- Standard Medical Concept Vocabulary
- Standard Structure and Content
- Standard Protocols of Best Practices
- Standard Electronic Exchange Formats
- Ubiquitous, Standard Connectivity
- Security Protection Standards
- Privacy Protection Standards
- Standards for Workflow (business rules)
- Detailed implementation guides for each
- Certification of implementations?
- Policies to guide integration of standards and processes to build infrastructure
New Standards Requirements

• Standards must be tight enough so that negotiation between trading partners about content is not required (or even possible).

• Standards must be include full, round trip set.
  – HIPAA claim transaction does not specify responses reporting errors/failures.

• Standards must include tools (including APIs) to make standard implementation easy for vendors.

• Security (including encryption, authentication, non-repudiation) must be included in standard infrastructure available to all healthcare.

• Choices must be made!
Common Issues and Challenges

• Upfront and Sustainable Funding
• Convening Stakeholders
• Organization, Governance, and Legal Issues
• Technical (Architecture, Applications, Standards, and Security)
• Engaging Clinicians: Clinical Process and Work-flow Change
• Engaging Patients and Consumers: Protecting Patient Privacy, Confidentiality, Security
• Legal and Regulatory Compliance
Lessons Learned from the Field

- Creating shared vision
- Creating a strategic business plan
- Organizing
  - Diverse and multi-stakeholder
  - Not-for-profit structure
  - Independent decision making body
  - The role of the RHIO as compared to and in relation to role of stakeholders contracting with the RHIO
- Financing and sustainability
  - Planning
  - Development
  - Operations
Lessons Learned from the Field

• Legal, regulatory, contractual issues:
  – Fraud and abuse
  – Stark and anti-kickback
  – Anti-trust
  – Liability/malpractice
  – Data use agreements
  – Vendor agreements
  – State laws
  – HIPAA
Factors that must Emerge in a National Health Information Technology Policy

• Trust
  – Third party organizations
  – Secure communications
  – Consensus policies agreed to by all

• Sustainable business model

• Standard standards

• Operational infrastructure

• Lower risk and cost for providers to participate

• Alignment of incentives