Nationwide Health Information Architecture Issues: Interoperability, Standards, Connectivity, and Security

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Overview

- Interoperability: Federal Health Architecture

- Standards: Consolidated Health Informatics (CHI)

- Connectivity: Nationwide Health Information Network (NHIN)

- Security and Risk Challenges

- Questions

Health Care Interoperability

- Both the public and private sectors have been moving toward interoperability and standardization over the years:
  - 1998: National Committee on Vital and Health Statistics (NCVHS) espoused a national health information infrastructure to promote American health
  - 2002: Markle Foundation forms Connecting For Health initiative that assembled public/private leadership in healthcare to promote common electronic standards
  - 2003: President Bush signs the Medicare Prescription Drug Improvement and Modernization Act (MMA) to allow CMS to establish key infrastructure for health information technology such as e-prescribing

Electronic Health Record

- **President Bush issued Executive Order on April 27, 2004** (*Incentives for the Use of Health Information Technology and Establishing the Position of the National Health Information Technology Coordinator*):

  - Created the Office of the National Health Information Technology Coordinator

  - Ordered the development and nationwide implementation of an interoperable health information technology infrastructure

  - Established the goal of electronic health records for all Americans within 10 years

- **On May 6, HHS secretary Tommy G. Thompson announced the appointment of David J. Brailer, MD, PhD, to this position**

Health Care Challenges

- Error rates are too high
- Quality is inconsistent
- Research results are not rapidly used
- Costs are escalating
- New technologies continue to drive up costs
- Demographics of baby boomers will greatly increase demand
- Capacity for early detection of bioterrorism is minimal

Federal Health Architecture Vision and Goals

- **Vision:** Safer and healthier citizens who have improved access to health related information and services.

- **Goals:**
  - Improved coordination and collaboration on national health IT solutions.
  - Improved efficiency, standardization, reliability, and availability of comprehensive health information solutions.

FHA Background

- July 2003: FHA program established, but not as an e-gov initiative.

- March 2004: Creation of the FHA Line of Business within the FEA as an e-Gov initiative was announced by Office of Management and Budget (OMB).

- July 2004 FHA was moved organizationally to the Office of the National Coordinator within HHS.

- December 2004: Consolidated Health Informatics (CHI) assumed under FHA as Data Standards Workgroup.

FHA Governance

Managing Partner

HHS

Federal Enterprise-wide Governance Structure

**Lead Agency Partners
VA, DOD, HHS**

**Supporting Partners
SSA, EPA,
Commerce/NIST, NASA,
Justice & more…**

Federal Structure

Federal Health Enterprise

Access to Care	Population Health and Consumer Safety	Health Care Administration	Health Care Delivery Services	Health Care Research and Practitioner Education

Food Safety

PHSurv

EHR

Consolidated Health Informatics (CHI)

Interoperability

Federal Health Architecture

FHA Principles

- Establish **Federal Interoperability** standards.
- Coordinate technology investments with the Federal business and architecture.
- **Minimize the data collection burden**.
- Secure Federal information against unauthorized access.
- Take advantage of **standardization based on common functions** and customers.
- Provide access to information.
- Select and **implement proven market technologies**.
- Develop the architecture in an evolutionary way, via a series of releases.

Consolidated Health Informatics (CHI)

- **One of the 24 Quicksilver eGovernment Initiatives**
  - To enable the sharing of health information in a secure environment to improve health
  - To establish Federal health information interoperability standards as the basis for electronic health data transfer in all activities and projects and among all Federal agencies.
  - Lead and influence in sync with industry
- **Phase I completed in March 2004**
- **Phase II initiated in September 2004 and continuing to this day**

CHI Strategy

- **CHI is part of the President's eGov Portfolio**

- **Goal is to adopt existing clinical vocabulary and messaging standards to enable interoperability in the federal health care enterprise**

- **Agencies will build standards into individual IT architecture to deploy in new systems and major system upgrades**

- **Policies preserve individual partner agency business rules**

- **Formed strong relationship with NCVHS Standards and Security Subcommittee to obtain input from private sector**

CHI Status

- **Current Status:**
  - Government-wide health IT governance council established.
  - 24 target domains for data and messaging standards identified.
  - 20 standards adopted by CHI and mandated for federal government.

- **Ongoing Activities:**

  - Continuous review of all adopted standards

  - Developing implementation guidelines for adopted standards

  - Adoption of new health standards

  - Outreach and communications

  - Coordinate with other efforts from the National Coordinator and synergistic industry efforts

Nationwide Health Information Network (NHIN) supports *Strategic Framework*

- **Framework for Strategic Action published on July 21st, 2004 by the Secretary of HHS, and the Office of the National Coordinator for Health Information Technology (ONC):**

  - Goal 1: Inform Clinical Practice
  - **Goal 2: Interconnect Clinicians**
    - **Strategy 2: Develop NHIN**
  - Goal 3: Personalize Care
  - Goal 4: Improve Population Health

"**N**ationwide **H**ealth **I**nformation **N**etwork"

A set of common intercommunication tools to support data movement that is inexpensive & secure

NHIN Request for Information
Public Input Sort

- Addresses the goal of interconnecting clinicians by **seeking public comment and input** regarding how widespread interoperability of health information technologies & exchange can be achieved

- **Intent to inform policy discussions about possible methods** by which widespread interoperability and health information exchange could be deployed and operated on a sustainable basis

RFI URL : www.hhs.gov/healthit

NHIN Status

- **Due Date was 18 January 2005**
- **Approximately 500 responses submitted**
- **3 Federal workgroups established to review RFI responses.**
  - WG 1: Technical architecture
  - WG 2: Business Architecture and Standards/Policies
  - WG 3: Financial and Legal/Regulatory

- **Dr. Brailer anticipates reporting out to public Summer 2005**

Security and Risks Challenges

- Patient Privacy and Security Paramount
  - Health Insurance Portability and Accountability Act (HIPAA) Privacy and Security Regulations
  - NIST Special Publication 800-66, *An Introductory Resource Guide for Implementing the Health Insurance Portability and Accountability Act (HIPAA) Security Rule.*
- Legal requirements will vary widely among jurisdictions.
- Ownership in Electronic Health Record need to be addressed.
- Standardized business policies and practices for the addition, amendment or alteration to a EHR must be discussed.
- Measures must be identified to ensure an accurate reflection of the chronology of clinical events and information availability in the EHR

Phases Approach

Implementation:
  -Consumer choice
  -Surveillance
  -Health status monitoring

Enhanced Adoption and Knowledge
  -EHR adoption
  -Rural diffusion
  -Accelerate research
  -Personal Health Records

Standards & Policies
  -Reduce EHR risk
  -Regional collaboration
  -Health Information network
  -Quality measures

2004   2005   2006   2007   2008   2009   2010   2011   2012   2013   2014

Questions?

ONC Website: http://www.hhs.gov/healthit/

CHI Website:
http://www.whitehouse.gov/omb/egov/pres_init/gtob.htm

Commander Laura Tillery
Deputy Chief Enterprise Architecture
Military Health System
Department of Defense

Email: Laura.Tillery@tma.osd.mil
Telephone: 703-681-6699