

Overview of NIST Role in Healthcare IT

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June 9, 2009



Background

- ▶ The U.S. healthcare industry lacks a comprehensive nationwide information infrastructure.
 - A standards-based, secure, interoperable nationwide healthcare infrastructure is needed.
- ▶ From both economic and quality of life perspectives, this is of critical importance to individual citizens and to our nation.
 - Healthcare spending is \$1 of every \$6 spent in the U.S.;
 - Up to 98,000 people die annually due to medical errors;
 - The U.S. ranks 24th in life expectancy though we spend more money per capita (\$5.7K) per year on healthcare than any other country;
 - Healthcare costs put U.S. industry at a global disadvantage.
- ▶ “...lives can be saved, outcomes of care improved, and costs reduced ... through the appropriate use of information technology.” (Healthcare Information and Management Systems Society (HIMSS) Call for Action, Dec 2008.)

National Priorities

▶ Administration Priorities

- “Use health information technology to lower the cost of health care. Invest \$10 billion a year over the next five years to move the U.S. health care system to broad adoption of standards-based electronic health information systems, including electronic health records.” – whitehouse.gov
- “Our health care is too costly” and we will “wield technology’s wonders to raise health care’s quality and lower its cost.” – President Obama’s inaugural address
- “Obama, who has advocated for healthcare reform based on the use of electronic health records (EHRs), [...], said his administration will “make the immediate investments necessary to ensure that within five years all of America’s medical records are computerized.” – Telemedicine and e-Health News Alerts, Liebert Inc.
- At a White House summit on healthcare reform, the President referred to health IT as “the low hanging fruit.” – www.ihealthbeat.org/Articles/2009/3/6/

▶ Congressional Initiatives

- Numerous Health IT bills in the past several sessions of Congress
- The American Recovery and Reinvestment Act (ARRA), Feb 2009

The Evolving Standards and Testing Landscape– a Sampling

Standards and Certification



Key Healthcare Delivery Organizations

- Kaiser Permanente
- Mayo Clinic

Industry Groups



Key Industry Players

- GE Healthcare
- IBM
- Microsoft
- McKesson
- Phillips
- Siemens Healthcare

Federal Government

Office of the National Coordinator



Key Advisory Committees

- HIT Policy Committee
- HIT Standards Committee
- National eHealth Collaborative



Standards in the Federal Space

- ▶ Trichotomy of Federal Role
 - Agencies with Policy/Regulatory Role (e.g., HHS)
 - Agencies with Research Role (e.g., NIST)
 - Agencies that are Health Care Providers (e.g., Veterans Affairs, DoD)
- ▶ Health IT-specific standards for federal use approved by Secretary of HHS
- ▶ Generally, each federal agency provides its own representation for defining standards development needs and SDO participation
- ▶ Federal Health Architecture (FHA) E-Government Line of Business Initiative is one coordination body in federal space (others for clinical research, public health)
- ▶ Nationwide Health Information Network (NHIN) effort coordinates (standards-based) trial implementations connecting to federal HIT systems

Why NIST? Why Now?

- ▶ Breadth of knowledge in infrastructure and interoperability
- ▶ Mission to work with industry
- ▶ HIT global reputation
- ▶ Leverage expertise/success in other domains
 - E-commerce
 - Security
 - Networking
- ▶ NIST's roles are articulated in the Federal Health IT Strategic Plan 2008 – 2012 (<http://healthit.hhs.gov>)
 - Interagency agreement with HHS/ONC since 2005
- ▶ Now is the time to build on the momentum of public-private collaborations

NIST Role (Recovery Act)

- ▶ “...the Secretary of Health and Human Services shall transfer \$20,000,000 to the Director of the [NIST]...for continued work on advancing health care information enterprise integration through activities such as technical standards analysis and establishment of conformance testing infrastructure...” (Title VIII)
- ▶ “The Director of the [NIST], in consultation with the Director of the National Science Foundation and other appropriate Federal agencies, shall establish a program of assistance to institutions of higher education...to establish multidisciplinary Centers for Health Care Information Enterprise Integration.” (Section 13202)
- ▶ Also,
 - Consulting on Certification of health IT
 - Contributing to an updated health IT strategic plan
 - Consulting on health IT implementation assistance

Improving Standards through Tests

- ▶ When standards and tests are developed simultaneously, the resulting standards are more correct, less ambiguous and result in better industry products (feedback loop)
 - NIST developed testing infrastructure
 - Collaborations on testing tools
- ▶ Testing extends into the industry product development lifecycle

Improving Standards Through Tests – Success Stories

- ▶ HL7 Clinical Document Architecture (CDA) document validators
- ▶ IEEE Medical device information model
- ▶ IHE Cross Enterprise Document Sharing (XDS)
 - Details in the upcoming demo

Moving Forward

- ▶ Expanding the health IT infrastructure to other environments, such as home healthcare
- ▶ Applying NIST-wide competencies to address future clinical needs, personalized medicine, and cognitive reasoning
- ▶ Advancing usability and accessibility of health information technologies
- ▶ Researching the standards and testing needs for evolving technologies