Electronic Standards for Public Health Information Exchange

Discretionary Advisory Committee on Heritable Disorders in Newborns and Children

September 12, 2014

Walter G. Suarez, M.D, MPH
Executive Director, Health IT Strategy and Policy – Kaiser Permanente
Co-Chair, NCVHS Sub-Committee on Standards
Outline

1. Introduction to NCVHS
2. Overview of Public Health Information Exchange Standards
3. Review of NCVHS Recommendations to HHS Secretary on Public Health Information Systems and Informatics Standards
4. Open Discussion on Relationship to DACHDNC
Part 1 – Introduction to NCVHS
The National Committee on Vital and Health Statistics

- One of the oldest statutory public federal advisory body to the HHS Secretary
- Focuses on health data, statistics and health information policy
- Provides advice and assistance to the Department (HHS Data Council, CMS, CDC, AHRQ and others)
- Serves as a forum for interaction with private and public sector groups on a variety of health data issues
## NCVHS Milestones

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>1949</td>
<td>Established as federal advisory committee</td>
</tr>
<tr>
<td>1974</td>
<td>Public Health Services Act gave NCVHS official status as a statutory public advisory committee to the Secretary of HEW (now HHS)</td>
</tr>
<tr>
<td>1996</td>
<td>HIPAA charged NCVHS with advising Secretary on health data standards and privacy policy</td>
</tr>
<tr>
<td>2003</td>
<td>Medicare Modernization Act charged NCVHS with recommending standards for electronic prescribing</td>
</tr>
<tr>
<td>2010</td>
<td>Affordable Care Act charged NCVHS with advising the Secretary on Operating Rules for HIPAA Administrative Simplification</td>
</tr>
</tbody>
</table>
NCVHS Configuration

• 18 members appointed for four year terms
• Organized around four core areas:
  – Standards (including HIPAA administrative transactions, code sets, identifiers)
  – Population Health
  – Privacy, Confidentiality and Security
  – Health Quality
  – Data Access
• Holds quarterly meetings, convenes public hearings, listening session, workshops, roundtables
• Develops and delivers practical, timely, thorough recommendations to the Secretary
NCVHS Recent Notable Contributions

  - 21st Century Vision for Health Statistics report
    - Emphasized role of all factors influencing health
  - National Health Information Infrastructure:
    - Led to the creation of Office of the National Coordinator for Health Information Technology

- **Population Health**
  - Community as a Learning Health System Framework
NCVHS Recent Notable Contributions

• Administrative Simplification
  – Fifteen years of oversight and advice in the adoption and implementation of standards, code sets and identifiers to fulfill HIPAA and ACA administrative simplification provisions
  – Annual HIPAA Reports to Congress

• Privacy and Security
  – National Stewardship Framework for Health Information Privacy
Part 2 – Overview of Public Health Information Exchange Standards
Public Health Data Standards

- Standards that support the electronic exchange and interoperability of information required to achieve the core public health disciplines.
Public Health Data Sources

- **Medical Data** – information collected on individuals in clinical setting during patient encounter

- **Environmental data** – details gathered through monitoring systems or as part of special investigations

- **Survey data** – conducted through various methods such as direct clinical examination, phone and household interviews and data abstraction from medical records

Public Health Information Infrastructure

• Automation
  – Began with the 1890 census
  – Long history with automated systems in vital statistics systems
  – States began to adopt computer technology in 1960s and currently manage multiple systems to support various PH programs

• National Databases
  – Network of local and state PH agencies working in collaboration with federal agencies to establish the form and content of data submission for PH programs
  – Information submitted in electronic and paper forms today

Public Health Information Infrastructure

• Data Integration
  – States may have separate systems related to different aspects of one program. For example:
    • HIV Registry
    • AIDS Registry
    • Ryan White Program
    • AIDS Drug Assistance Program
  – Mesh of “in house” developed and “turnkey” systems
  – Lack of interoperability among the various systems
  – Lack of consistency in data coding and data definitions across systems

Challenges for PH Data Interoperability

• “A serious shortcoming of these systems is that they are not integrated horizontally. Data cannot be exchanged, linked, or merged easily by different programs or used to evaluate problems by person over time and geographic areas.”*

EHR and Administrative Systems Supporting PH Requirements

Administrative Systems

Electronic Health Record Systems

Public Health Requirements
Public Health Data Standards Development

• Electronic standards that define the message structure, format, content, coding, vocabulary/terminology, transport, security, and other elements
• Applied to various health information exchange needs between public health and external entities (i.e., providers, payers, others)
• Moving from uni-directional to bi-directional exchanges
• Example areas include:
  – Vital statistics
  – Immunization data
  – Bio-surveillance reporting
  – Disease registry
  – Public Health Laboratory reporting
• International – not just a national/US domain
Public Health Standards

Sample of SDOs, DCCs, Standardization efforts, and others

- HL7 INTERNATIONAL
- ISO
- IHTSDO SNOMED CT
- LOINC
- S&I FRAMEWORK
- ASC X12
- CMS ICD-10
- NIH
- UMLS
- NCPDP
- NCPDP RxNorm
- CDC
- PHIN: PHN Vocabulary Access and Distribution System (VADS)
- NIH Value Set Authority Center
- U.S. National Library of Medicine
- NUA
- ABA
- ADA
- NUBC
- ISDS
- IHE: Integrating the Healthcare Enterprise
- AMA: American Medical Association
- U.S. National Library of Medicine
- NUA
- ADA: American Dental Association
- NUBC: National Uniform Billing Committee
- ISDS: International Society for Disease Surveillance
- IHE: Integrating the Healthcare Enterprise
- AMA: American Medical Association
- ADA: American Dental Association
- NUBC: National Uniform Billing Committee
- ISDS: International Society for Disease Surveillance
# Core National Standards for EHRs

<table>
<thead>
<tr>
<th>Interoperability Stack</th>
<th>Building Blocks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vocabulary &amp; Code Sets</strong></td>
<td><strong>SNOMED-CT</strong></td>
</tr>
<tr>
<td></td>
<td><strong>LOINC</strong></td>
</tr>
<tr>
<td></td>
<td><strong>ICD-10</strong></td>
</tr>
<tr>
<td></td>
<td><strong>RxNorm</strong></td>
</tr>
<tr>
<td><strong>Content Structure</strong></td>
<td><strong>Consolidated CDA</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Quality Reporting</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Lab Results IG</strong></td>
</tr>
<tr>
<td></td>
<td><strong>HL7 v.2.5.1 Public Health Reporting</strong></td>
</tr>
<tr>
<td><strong>Transport</strong></td>
<td><strong>SMTP-Direct Based Exchange</strong></td>
</tr>
<tr>
<td></td>
<td><strong>SOAP-Secure Web Services</strong></td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td><strong>X.509 - Digital Certificates</strong></td>
</tr>
<tr>
<td></td>
<td><strong>SAML</strong></td>
</tr>
<tr>
<td><strong>Services</strong></td>
<td><strong>Certificate Authority</strong></td>
</tr>
<tr>
<td></td>
<td><strong>DNS, LDAP-Certificate Discovery</strong></td>
</tr>
<tr>
<td></td>
<td><strong>UDDI-Certificate &amp; Service Discovery</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Provider Directories</strong></td>
</tr>
</tbody>
</table>
PH Partner Organizations

- **AIRA**  American Immunization Registry Association
- **AMIA**  American Medical Informatics Association
- **APHL**  Association of Public Health Laboratories
- **ASTHO**  Association of State and Territorial Health Officials
- **CSTE**  Council of State and Territorial Epidemiologists
- **JPHIT**  Joint Public Health Informatics Taskforce
- **NACCHO**  National Association of County & City Health Officials
- **NAHDO**  National Association of Health Data Organizations
- **NAPHSIS**  National Association for Public Health Statistics and Information Systems
- **PHDSC**  Public Health Data Standards Consortium
- **PHII**  Public Health Informatics Institute
Challenges for PH Data Standards Adoption

- Need standards-based data collection and reporting from clinical systems to PH systems
- Minimal local/state/federal participation in standards development activities
- Funding limitations to test standards that have been developed and to support EHR initiatives that include PH requirements
- Not recognized in “meaningful use” often translates to minimal or no vendor engagement to support EHR development to support PH programs
- Not all the data needed by public health comes from a single data source or resides in an EHR
- Not all the data is in electronic format (whether in an unstructured or structured/codified state)
- Requires long term commitment – not a quick fix
Part 3 – NCVHS Recommendations to HHS Secretary on Public Health Information Systems and Informatics Standards
NCVHS Hearing on Public Health Information Systems and Standards - November, 2013

• First hearing to focus on the state of public health information systems and standards
• Engaged public health data standards organizations, public health agencies, national public health associations, and information system developers
• Intended to create awareness on the need to advance public health information systems across the nation
• Provided an overview of the state of affairs, a series of themes and observations, and a core set of initial recommendations to the HHS Secretary

See: http://www.ncvhs.hhs.gov/140616lt.pdf
NCVHS Hearing on Public Health Information Systems and Standards – Themes

• Nationwide public health information infrastructure needs significant attention and sustained investment
• Opportunity to identify/optimize common infrastructure, data analytic capabilities to avoid costly duplication
• Need to establish appropriate incentives for the adoption and implementation of PH standards
• Need to improve the level of maturity and adoptability of standards for public health applications
• Need to increase workforce informatics competencies, level of PH participation in standards development activities
NCVHS Hearing on Public Health Information Systems and Standards - Recommendations

• Recommendation 1: HHS should pursue the development and implementation of a new *National Public Health Information Infrastructure Strategic Initiative*
  – Advance and bring to par public health information systems with rapidly evolving clinical information systems
  – Strongly support the advancement of public health information policy, technology, informatics standards, workforce development and availability of other relevant resources
Recommendation 2: HHS should establish a *Public Health Information Infrastructure Dedicated Fund*, jointly governed by CDC and a PH collaborative organization

- Fund improvements in information infrastructure capabilities
- Support public health informatics standards adoption/use
- Analyze public health programs to identify standards gaps
- Make standards experts available to public health programs
- Provide cost-effective standards training to public health
- Develop a roadmap for moving Public Health information systems to a sharable, service-based environment
Recommendation 2.1: HHS should leverage the Public Health Information Infrastructure Dedicated Trust Fund to provide sustained funding for:

- Continuous quality improvement for PH information systems
- Promote, develop, sustain informatics skills of PH workforce
- Standards development and adoption
Recommendation 3: HHS should work with public health community to establish a **National Public Health Informatics Standards Collaboration Initiative** to accelerate adoption and use of standards in public health programs

- Work towards harmonization and linkages of demographics data in public health databases
- Establish pilot programs to demonstrate value of bi-directional information exchanges between PH and health care organizations
- Support core group of public health professionals to actively participate in standards development work
- Create opportunities to advance the adoption and use of population health tools, resources
Recommendation 4: HHS should leverage different policy programs and initiatives (such as ACA, MU) to:

- Align incentives for key components of public health reporting
- Stimulate vendor engagement in adopting/using standards
- Ensure public health data requirements are incorporated into standards and clinical information systems, as appropriate
- Identify, document and share examples that showcase the benefits and value of adopting and using public health standards
Recommendation 5: HHS in partnership with the public health community should develop a new National Strategy for Public Health Informatics Capacity Building to increase the number of informatics-savvy, skilled professionals in the public health workforce.
Part 4 – Open Discussion on Relationship to DACNDHS
"We have lots of information technology. We just don't have any information."
Contact

Walter G. Suarez, MD, MPH
Executive Director, Health IT Strategy and Policy – Kaiser Permanente
Co-Chair, Sub-Committee on Standards
(301) 801-3207
Walter.g.suarez@kp.org

Please visit our NCVHS Homepage at:
http://www.ncvhs.hhs.gov/