Public Health Update

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Agenda

- Review Stage 1 Public/Population Health Meaningful Use Measures
- Review Public Health Efforts Regarding Standards and Interoperability Framework Components
- Review Readiness for Stage 3 Meaningful Use PH Measures
Hospital 1st v. 2nd v. 3rd year
PH Menu Objective Performance

Update on Current Measures:  

- Immunization, ELR, SS

**Immunization**

- New, improved implementation guide (IG) (V2.5.1 – 8/1/2012)
- Progress with providers is better
- ONC test criteria are making interoperability better
- PH accepting certified product data (*HL7: 58% in 2011 to 77% in 2012*)
- Next IG version (*Feb 2014*) will include bi-directional w/history and forecast back to provider

**Electronic Laboratory Reporting (ELR)**

- New, improved IG version generally available through HL7 (2/26/14) [http://www.hl7.org/dstucomments/showdetail.cfm?dstuid=104](http://www.hl7.org/dstucomments/showdetail.cfm?dstuid=104)

**Syndromic Surveillance (SS)**

Successful centralized infrastructure utilizing BioSense
Percent of Participating Eligible Hospitals Selecting at Least 1 Public Health Measure*

*Present percent of hospitals that are selecting at least 1 public health measure without an exclusion. Based on CMS EHR Incentive Program data through 30Nov2013
Electronic Laboratory Reporting (ELR) – *Pattern of Adherence to Standards*

- Public Health consistently makes efforts to abide by standards and in turn minimize impact on clinical partners.
- Proof of PH’s commitment to build on standards and processes used for other use cases.
  - ELR Release 1 (HL7 Version 2.5.1: ORU^R01)\(^1\) was built on the HITSP Lab-to-EHR Implementation Guide.
  - ELR Release 2 is the current profile for Electronic Laboratory Reporting to Public Health (MU Stage 1 and 2).
- Public health has demonstrated acceptance, readiness for standards, and will credibly achieve that for Stage 3.

\(^1\) [http://hie.illinois.gov/assets/hl72521_implguide.pdf](http://hie.illinois.gov/assets/hl72521_implguide.pdf)
## S&I Initiative Portfolio Snapshot

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Pre-Discovery</th>
<th>Use Case</th>
<th>Harmonization</th>
<th>RI, Test &amp; Pilot</th>
<th>Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Project (S&amp;I Archetype)</td>
<td></td>
<td>C-CDA Companion Guide for Meaningful Use balloted in September 2013 and is now under ballot reconciliation; Target publication date is early Q2</td>
<td></td>
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<td>In production</td>
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<tr>
<td>Transitions of Care</td>
<td></td>
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<tr>
<td>Lab Results Interface</td>
<td></td>
<td>IG &amp; Second Errata Published; 2014 CEHRT In Progress, IG preparation for normative ballot 2013</td>
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<tr>
<td>Query Health</td>
<td></td>
<td>Pilots completed, QRDA III Published, HQMF R2 ballot reconciliation completed and HQMF R2 DSTU publication in progress</td>
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<tr>
<td>Data Segmentation for Privacy</td>
<td></td>
<td>Pilots in Evaluation; IG in normative 2 ballot with HL7 Security WG; RESTful Supplement adopted by IHE</td>
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<tr>
<td>Public Health Reporting</td>
<td></td>
<td>Community-Led; RI Framework and CDA guide published; Testing &amp; Pilots in progress; Community will be meeting on a monthly basis</td>
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<tr>
<td>esMD</td>
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<td>IG and UC consensus closed for UC 1, UC 2, AoR L1, and Prov. Dir. Guidance; UC consensus closed for AoR L2 eDoc Generic Use Case, and eDoc PMD User Story; AoR L2 IG DSTU is now in ballot reconciliation</td>
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<tr>
<td>Longitudinal Coordination of Care</td>
<td></td>
<td>Community-Led; 1st UC Complete; PAS SWG Complete; Created ‘Care Plan’ Glossary for HTPC &amp; HL7; Use Case 2: Care Plan Exchange Complete; C-CDA updates for Sept HL7 Ballot in ballot reconciliation; Pilots SWG launched 9/16</td>
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<tr>
<td>Laboratory Orders Interface</td>
<td></td>
<td>LOI IG published December 2013; eDOS IG published November 2013; eDOS IG ballot reconciliation complete; Lab pilot efforts include LOI and eDOS</td>
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<tr>
<td>Health eDecisions</td>
<td></td>
<td>Use Case 1: Knowledge Artifact Sharing Model, Schema and IG was approved by HL7, UC1 Pilots Complete; Use Case 2: Balloted 4 HL7 specifications in September 2013 for CDS Guidance Service UC (UC2) and completed ballot reconciliation for each: Preparing for UC2 pilots and re-balloting informative artifacts as DSTU in January 2014</td>
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<tr>
<td>Blue Button Plus</td>
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<td>Push &amp; Pull IG’s complete – now focused on implementation; Successful kickoff of both Pilot WG and Payer WG</td>
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<tr>
<td>Structured Data Capture</td>
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<td>Use Case &amp; Standards consensus complete; IG development in progress; Form SWG working on schema development; Public Health SWG In User Story review; IHE Content Profile in progress; Pilots planning has begun; Patient Safety &amp; Adverse Events Content SWG in progress</td>
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<tr>
<td>EU/US eHealth Cooperation</td>
<td></td>
<td>Interoperability WG – reviewing completed Use Case to begin consensus before the holidays; Workforce Development WG – mapped roles in Acute Care to competencies</td>
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<tr>
<td>Data Access Framework</td>
<td></td>
<td>Local Data Access Use Case was consensus approved and Targeted Use Case launched on 12/11; IHE PCC white paper in progress</td>
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<tr>
<td>PDMP – HIT Integration</td>
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<td>Working on Charter Review with community; Preparing for UC launch in January, and Winter Concert series where community members present work that solves some or all of the PMDP challenge</td>
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</table>
Key Principle for PH Stage 3 MU

- Adhere to Standards and Interoperability

Framework Components Whenever Feasible

<table>
<thead>
<tr>
<th>Component</th>
<th>Purpose</th>
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<tbody>
<tr>
<td>Consolidated CDA</td>
<td>Standard message format</td>
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<tr>
<td>Query Health</td>
<td>Population based queries</td>
</tr>
<tr>
<td>Structured Data Capture</td>
<td>Populate standard forms</td>
</tr>
<tr>
<td>Health eDecisions</td>
<td>Clinical decision support (e.g., triggers for PH screening or collecting data)</td>
</tr>
<tr>
<td>Data Access Framework</td>
<td>Query data: 1) locally, 2) to targeted organization and 3) distributed across multiple organizations</td>
</tr>
</tbody>
</table>
Cancer Reporting

- Stage 3 MU Cancer Implementation Guide (IG) should move to consolidated clinical document architecture (c-CDA) because:
  - EHR vendors are required to use this format for Transition of Care documents in Stage 2 MU
  - eliminates burden of supporting two different formats for cancer reporting
  - c-CDA has harmonized and improved templates across multiple sources
  - cancer program is ready to move to this new standard
Cancer consolidated-CDA:

- **Next Steps**

  - Align Cancer IG sections with c-CDA sections (high level completed)
  - Add Cancer Diagnosis Section to c-CDA
  - Perform Gap and Overlap analysis of entries, data elements, attributes, and value sets
  - Put new document through HL7 ballot process

  **Timeline**
  - High level gap analysis performed in November 2013
  - Detailed gap/overlap analysis work starting in January 2014
  - Ballot in May 2014
Public Health and consolidated-CDA - *Progression for some areas*

- **2012**
  - Pertussis (NY State)
  - Pertussis (San Diego)
  - Tuberculosis (Delaware)

- **2013**
  - EHDI (N. Dakota)
  - EHDI (Oregon)

- **2014+**
  - Cancer Registry
Electronic Healthcare Associated Infection (HAI) Detection and Reporting: **Supporting Patient Safety**

**CDC**
- Reporting system provides protocol and algorithm
  - Reporting protocol for HAI
  - Executable expressions of detection and case reporting algorithms

**Specifications:**
- eMeasures
- Decision rules
- Computer code

**Reporting system publishes facility-specific HAI data**
- Publicly Reported HAI data
  - NHSN

**CDC Programs**
- Healthcare
- Public Health
- CMS

**HeD**
- Electronic systems:
  - EHR
  - Pharmacy
  - ADT
  - Lab

HAI detection rules applied to patient-specific data
- Additional rules applied to populate full HAI report

**Electronic HAI Report Clinical Document Architecture (CDA)**

**Healthcare Facility**
Progress: What’s been completed

Clinical Document Architecture (CDA)/Structure Data Capture (SDC)

Public Health Pilot Projects

Public Health Reporting Architecture

Provider
Electronic Health Record System

- EHR Vendors
  - Core Solutions
  - Connexin
  - Allscripts (Test Harness)
  - Epic 2012 (Test Harness)

Form Filler

Provider
Continuity of Care Document (CCD) (pre-population data)

Public Health Infrastructure or Health Information Exchange (HIE)

Public Health Infrastructure (Orion Rhapsody)

Form Filler

1. Request SDC Form
2. Provide pre-population data
3. Pre-populated Report Form
4. Populated Report Form

HIE (OZ Systems)

- Form Manager
- Form Receiver
- Content Creator

CDA-based Case Reports:
- Tuberculosis
- Pertussis
- Newborn Hearing Screening Outcome Report

Public Health

Information Systems: Surveillance and Reporting

- Public Health Information Systems
  - Delaware Electronic Reporting Surveillance System (DERSS)
  - New York State Universal Public Health Node (UPHN)
  - San Diego County (Atlas Public Health)
  - Oregon EHDI System (Filemaker)
  - North Dakota EHDI System (OZ Systems)

Content Consumer

Communicable Disease Reporting
Clinical Document Architecture/Structure Data Capture

**Pilots: NYC and WI**

**Current Progress (as December 2, 2013) – Finalize Testing in Vendor Environment**

- Electronic Medical Record (EMR)
  - Vendor Test Environment
    - (i.e., EPIC)

  Continuity of Care Document (CCD)

1. Parse
2. Retrieve Form
3. Pre-populate web form
4. Send URL with pre-populated web form
5. Physician/Infection Control Practitioner submits additional information directly to system

**Next Steps – Identify, Recruit, and Implement in Hospital using EPIC EMR System**

**NYC and WI Public Health Infrastructure**

- Reporting Module/Form Manager
- Electronic Disease Surveillance System

**Key Outcomes**

- Shift in traditional public health case report (PHCR) use case
  - Leverage existing standard (i.e., CCD -> cCDA)
- Light-weight service for EMR vendors to connect to various jurisdiction reporting end-points
  - Minimize development in EMR System
- Extensibility/ portability to other EMR vendors
- State and Local Health Department configure forms based on reporting and business needs specific to jurisdiction
Structured Data Capture (SDC) - *Tiger Team and Selected Pilots*

- **Public Health Tiger Team**
  - Community based effort to identify, develop, and implement Public Health SDC Pilots

- **Proposed Public Health SDC Pilot Projects**
  - Cancer Reporting
  - Notifiable Disease Case Reporting
  - Early Hearing Detection and Intervention (EHDI) Reporting

[http://wiki.siframework.org/Public+Health+Tiger+Team+Meeting+Archives](http://wiki.siframework.org/Public+Health+Tiger+Team+Meeting+Archives)
CDISC: Clinical Data Interchange Standards Consortium
RFDC: Request Form for Data Capture
CDE: Clinical Data Elements
Health eDecisions

- **Use Cases**

  - **Use Case 1**: standard format for sharing Clinical Decision Support (CDS) knowledge artifacts
    - Rules, order sets and documentation templates
    - Goal: CDS knowledge authored in standard format can be imported and used in any EHR system
  
  - **Use Case 2**: standard interface for accessing CDS Web services
    - Goal: CDS capability encapsulated using standard interface can be integrated with any EHR system
Use Case 1 Focuses on three artifact types:

1. Event Condition Action Rules (e.g., positive lab test)
2. Order Sets
3. Documentation Templates
# Health eDecision
- **Use Case 1: Pilot Partnerships**

<table>
<thead>
<tr>
<th>EHR</th>
<th>Pilot</th>
<th>Content Supplier</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Clinicals</td>
<td>Order Set – Heart Failure</td>
<td>Zynx Health</td>
</tr>
<tr>
<td>Allscripts</td>
<td>Rule – NQF 068 (Million Hearts)</td>
<td>newMentor</td>
</tr>
<tr>
<td>Allscripts</td>
<td>RCKMS - San Diego Pertussis</td>
<td>CDC/CSTE</td>
</tr>
<tr>
<td>VA</td>
<td>Documentation Template – UTI</td>
<td>Wolters Kluwer Health</td>
</tr>
</tbody>
</table>

RCKMS: Reportable Condition Knowledge Management System
RCKMS Long term Scope

1. **Health eDecision (HeD)**
   - **Output file Options**
     1. HeD file download
     2. OpenCDS in Cloud
     3. OpenCDS Locally Deployed

2. **Open CDS**
   - **HeD**

3. **Open CDS Local**
   - **Web Service**

4. **National, Clinical & Public Health Laboratories**
   - **LIMS**
   - **EHR**

5. **Hospital Labs**
   - **LIMS**
   - **EHR**

6. **PH Reporters (Clinicians)**
   - **Web Service**

7. **Public Health State, Local, Territorial Agencies**
   - **Authoring Framework**
8. **Reportable Condition Knowledge Management System (RCKMS)**
   - **Query/View**
   - **Subscription Management Including Notifications**
   - **Other Web Services**
   - **Database**
     - Who, What, When, Where, How
     - **Structured Output Generator**
     - **HeD Compliant format**
       - Triggering Criteria
       - Reporting Actions
       - Links
Stage 3 MU Registry Participation

One of three potential methods

1. Standard message structured data capture enhanced consolidated-CDA message
   • e.g., early hearing detection and intervention, cancer, or healthcare associated infections,

2. A modified consolidated-CDA to limit protected health information release to community-based, high priority condition registries
   • e.g., obesity or hypertension, or

3. Leverage national or local networks
   • e.g., FDA Mini-sentinel or DARTNet Institute
   • e.g., NYC Primary Care Information Project federated query technologies.
S&I Data Access Framework Use Cases

Local Access via Intra-Organization Query
- Create and disseminate queries internal to organization
  - Query Structure Layer
  - APIs
  - Authentication/Authorization Layer
- Receive standardized responses
  - Query Results Layer

Targeted Access via Inter-Organization Query
- Create and disseminate queries to external organization
  - Query Structure Layer
  - Transport Layer
  - Authentication/Authorization Layer
- Receive standardized responses from external organization
  - Query Results Layer

Multiple Data Source Access via Distributed Query (Query Health) – Completed Initiative
- Create and disseminate queries to multiple organizations
  - Governed by a network
- Receive aggregated or de-identified responses
- Focus on Information Model for the network and leverage standards from earlier phases.

Standards based approach to enable access at all levels: Local, Targeted, and Distributed

Note: An organization can be a hospital that is part of larger organization and can also include HIEs, RIOs, other types of organizations etc.
Data Access Framework

- examples

Obesity Prevalence in the NYC Pilot

Total Number of Flu Vaccinations and ILI Visits
September 2009-March 2012
Conclusions

- **Stage 1 Public/Population Health meaningful use measures**
  - Advancing well

- **Public Health efforts regarding Standards and Interoperability Framework Components**
  - Adopting, and testing with significant progress

- **Prospects for Stage 3 meaningful use measure readiness**
  - Excellent progress using S&I Framework components, bodes well for readiness
  - Need to complete end-to-end testing for comprehensive implementation guide development