eHEALTH INITIATIVE
Real Solutions. Better Health.

Connecting Communities Workgroup

Public Health & HIE

April 22, 2014

2:00 – 3:00 pm ET

Reminder

Please mute your line when not speaking

(* 6 to mute, *7 to unmute)

This call is being recorded

Agenda

- Welcome and introductions
  - Laura Kolkman, President, Mosaica Partners
- Public Health Infrastructure
  - Anna Orlova, PhD, Executive Director, Public Health Data Standards Consortium
  - Marcy Parykaza, Public Health CIO, State of Delaware
- Discussion
- Closing remarks

Connecting Communities

Brings together state and regional HIEs, HIE technology vendors, and other stakeholders to contribute and discuss substantive examples of best practices and educate the industry on issues related to electronic healthcare data exchange and interoperability

- Educational webinars
- Case studies
- Collaborative projects

Public Health & HIE

- Introductions: Laura Kolkman, President, Mosaica Partners (Chair of Connecting Communities)

Public Health Data Standards Consortium

http://www.phdsc.org

Public Health Data Standards Consortium
eHealth Inititive Connecting Communities Workgroup Webinar,
April 22, 2014

Clinical Document Architecture (CDA) for Public Health:

CDA State Pilot Projects for Communicable Diseases and Early Hearing Prevention and Intervention

Anna Orlova, PhD
aorlova@jhsph.edu
Executive Director
Public Health Data Standards Consortium and
Visiting Associate Professor, Johns Hopkins School of Medicine
Baltimore, Maryland, USA

PUBLIC HEALTH DATA STANDARDS CONSORTIUM
PHDSC
Promoting Standards Through Partnerships

CDA for Public Health Pilot Projects: Outline

- Health Level Seven (HL7) CDA Standard
- CDA for Public Health Reporting: Pilot Projects
  - Communicable Diseases Programs
  - Early Hearing Detection and Intervention (EHDI) Program
  - CDA for PH Projects Methodology

CDA for Public Health Pilot Projects: Outline

- Health Level Seven (HL7) CDA Standard

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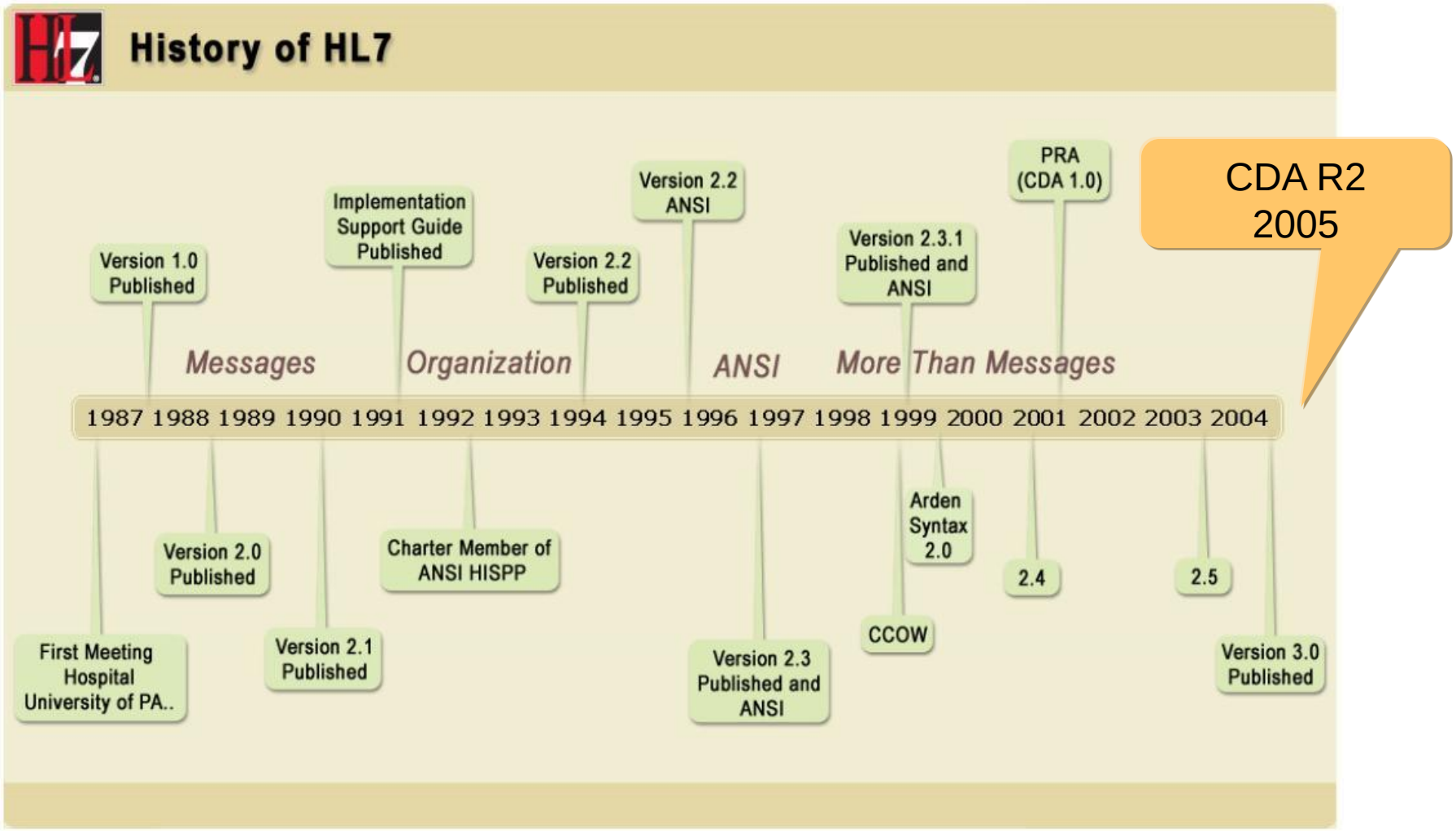
History of HL7



Source: Renly S, Krueger J. What's Next? Why HL7 Messages and HL7 CDA Documents are in our Future. Presentation at the CDC PHIN Vocabulary and Messaging Community of Practice, February 21, 2012

HL7 Document-based Standards: CCD/CDA

They are the **Continuity Care Record (CCD)** standard and **Clinical Document Architecture (CDA)** standard that

- Represent information in documents (i.e., forms)
- Use “post occurrence”, i.e. once the actual process is done to provide "snapshots" at a particular time
- Contain data “as it was” when the document was originally created
- Capture information and allow it to be shared
- Can be superseded and corrected, but are "static documents" rather than dynamic objects

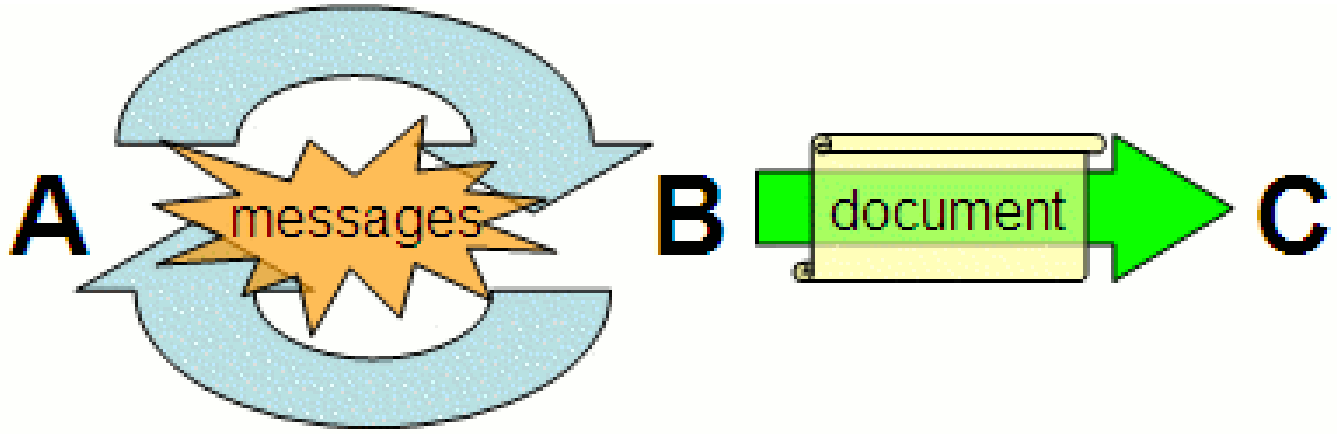
The more passive and loosely coupled your communication process is, the more the use of documents is applicable.

Sources: Renly S, Krueger J. What’s Next? Why HL7 Messages and HL7 CDA Documents are in our Future. Presentation at the CDC PHIN Vocabulary and Messaging Community of Practice, February 21, 2012
HL7 Version 3: Message or CDA Document? Ringholm White Paper.
URL: http://www.ringholm.de/docs/04200_en.htm

Messages Vs Documents

Messages = Continuing communication

Documents = Static content



Sources: HL7 Version 3: Message or CDA Document? Ringholm White Paper.
URL: http://www.ringholm.de/docs/04200_en.htm

The Six Core Principles of CDA R2

Persistence – A clinical document continues to exist in an unaltered state, for a time period defined by local and regulatory requirements (NOTE: There is a distinct scope of persistence for a clinical document, independent of the persistence of any XML-encoded CDA document instance).

Stewardship – A clinical document is maintained by an organization entrusted with its care.

Potential for authentication - A clinical document is an assemblage of information that is intended to be legally authenticated.

Context - A clinical document establishes the default context for its contents.

Wholeness - Authentication of a clinical document applies to the whole and does not apply to portions of the document without the full context of the document.

Human readability – A clinical document is human readable.

Source: HL7 Version 3: Message or CDA Document? Ringholm White Paper.
URL: http://www.ringholm.de/docs/04200_en.htm

CDA Terminology

CDA document is a container concept: a "snapshot" as authored at one specific point in time.

Document

Header

Header Participants

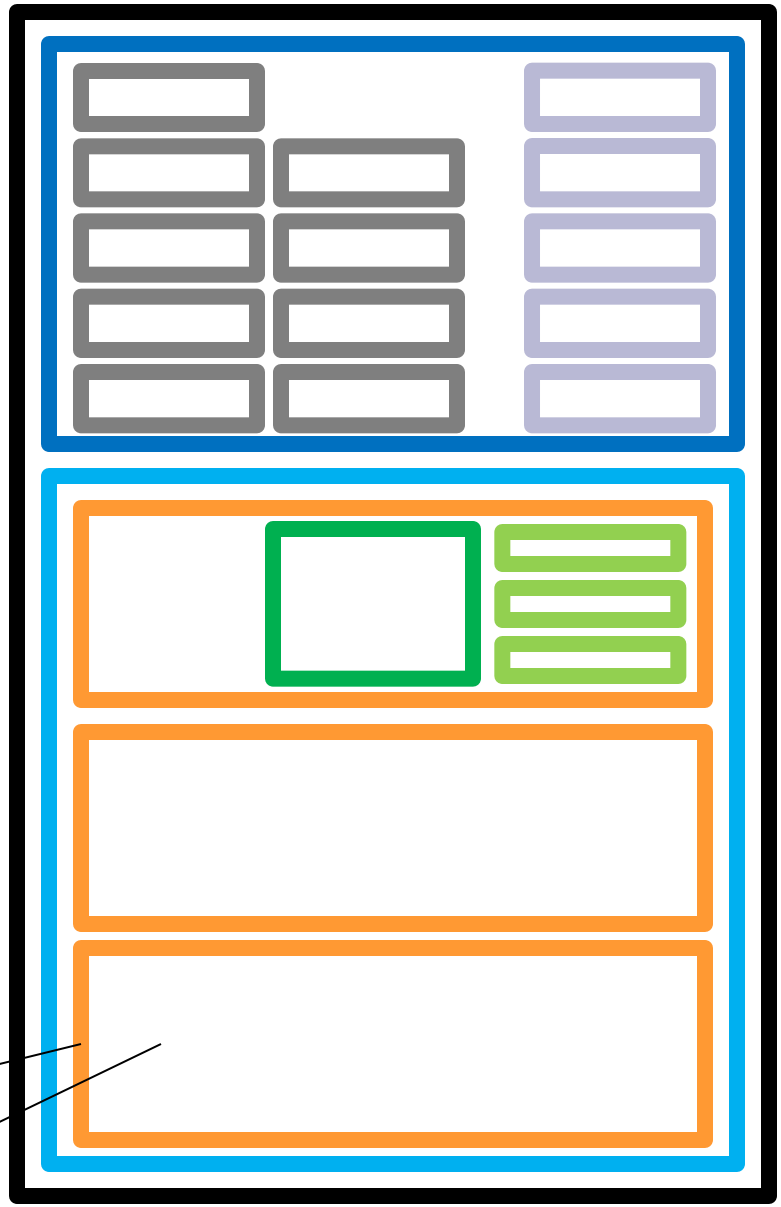
Header Act Relationships

Body

Section

Human Readable Text

Machine Readable Entries

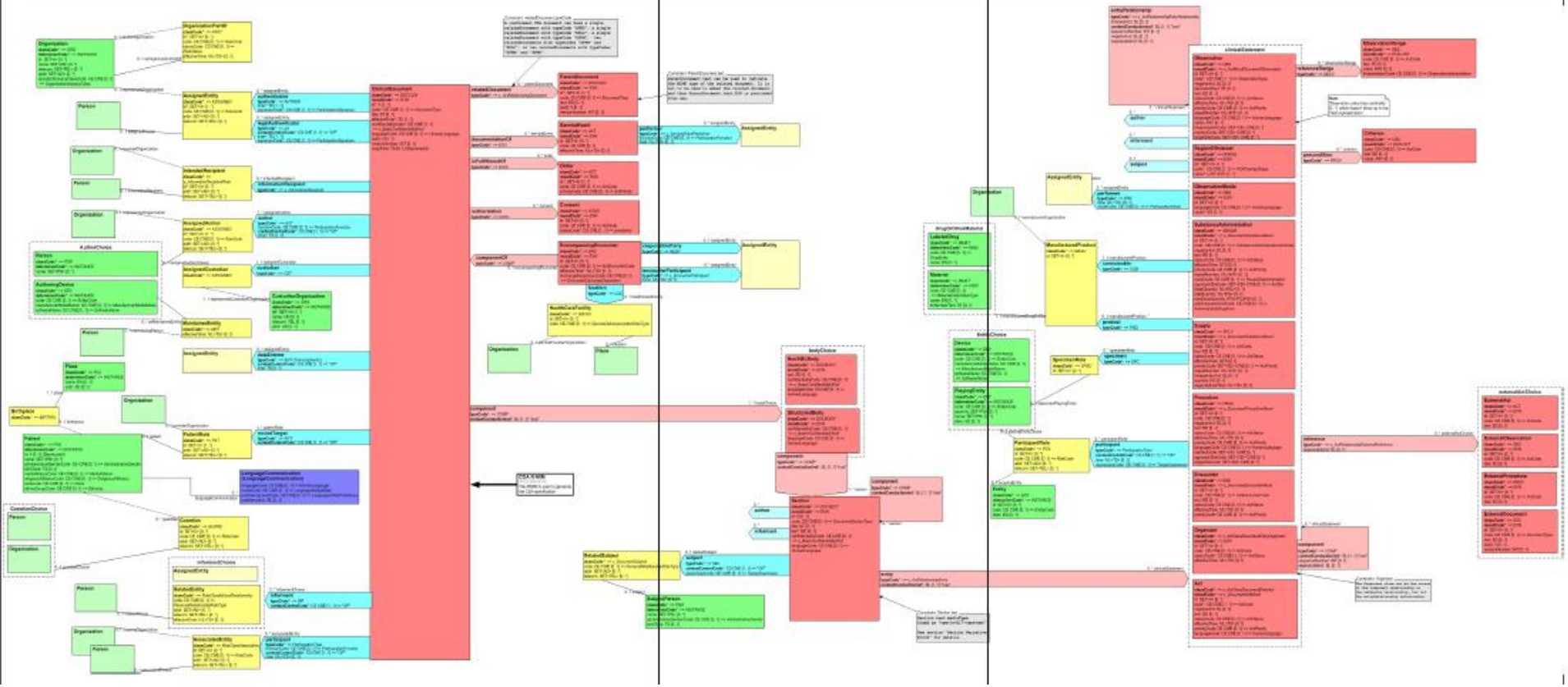


CDA Model

Document Header

Sections and Human Readable Text

Machine Readable Entries



Source: K.W. Boone. The CDATM Book. Springer-Verlag. London. 2011

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CDA Standard

CDA Case Report (Human Readable)

CDA Case Report (XML Schema)

```
…
<component>
  <observation classCode="OBS" moodCode="EVN">
    <templateId root="2.16.840.1.113883.10.20.1.31"/>
    <id root="8b3fa370-67a5-11db-bd13-
     0800200c9a66"/>
    <code code="33765-9"
     codeSystem="2.16.840.1.113883.6.1"
     displayName="WBC"/>
    <statusCode code="completed"/>
    <effectiveTime value="200003231430"/>
    <value xsi:type="PQ" value="6.7" unit="10+3/ul"/>
    <interpretationCode code="N"
     codeSystem="2.16.840.1.113883.5.83"/>
  </observation>
</component>
…
```

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HL7 Standards in Meaningful Use of HIT

- **Stage I – Use HL7 CDA documents**
  - Clinical EHRs
- **Stage I – Use HL7 v2.3.1 or v2.5.1 messages to electronically record, modify, retrieve, submit public health data**
  - Syndromic Surveillance – use v2.3.1 or v2.5.1
  - Laboratory Results Reporting to Public Health – use v2.5.1
  - Reporting to Immunization Registries - use v2.3.1 or v2.5.1

- **Stage II – Use HL7 CDA documents**
  - Reporting to State Cancer Registries
  - Reporting of Early Hearing Detection and Intervention (EHDI) Quality Measures to Public Health

HL7 Standards in Meaningful Use of HIT

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CDA Standard for Public Health

According to the ***Public Health Reporting Reference Implementation Framework*** developed by the **Public Health Reporting Initiative, ONC S&I Framework**, only five public health programs had started developing CDA-based public health reports. They are

- **communicable diseases** (case reporting and laboratory reporting)
- **early hearing detection and intervention (EHDI)** (newborn hearing screening, Early Hearing Care Plan and newborn screening quality measure)
- **cancer**
- **immunization** and
- **vital records** (birth registration and death registration)

The work on CDA-based reports for **administrative**, **occupational health** and **obesity** (healthy weight) data started at Integrating the Healthcare Enterprise (IHE).

Public Health Reporting Initiative. Standards and Interoperability (S&I) Framework. Office of National Coordinator for Health IT (ONC). Public Heath reporting Reference Implementation Framework. 2013. URL: **ttp://wiki.siframework.org/**

CDA for Public Health Pilot Projects

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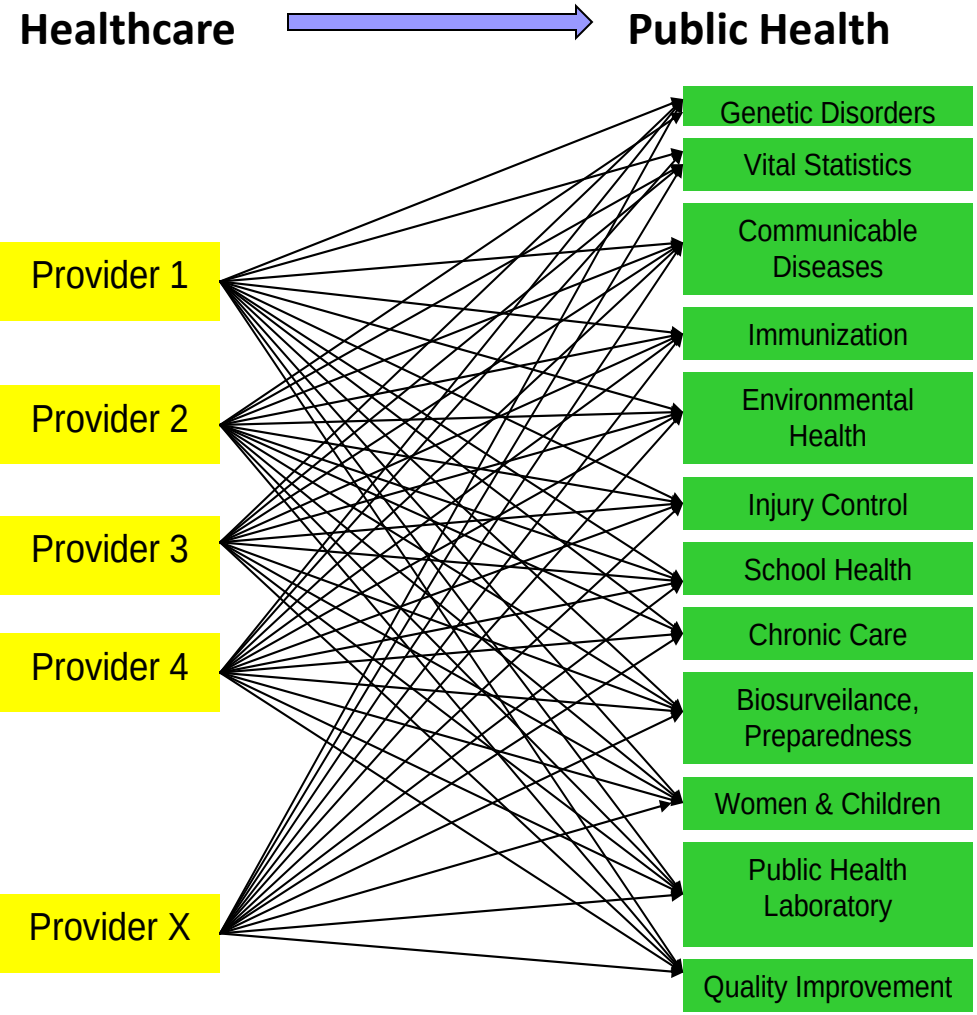
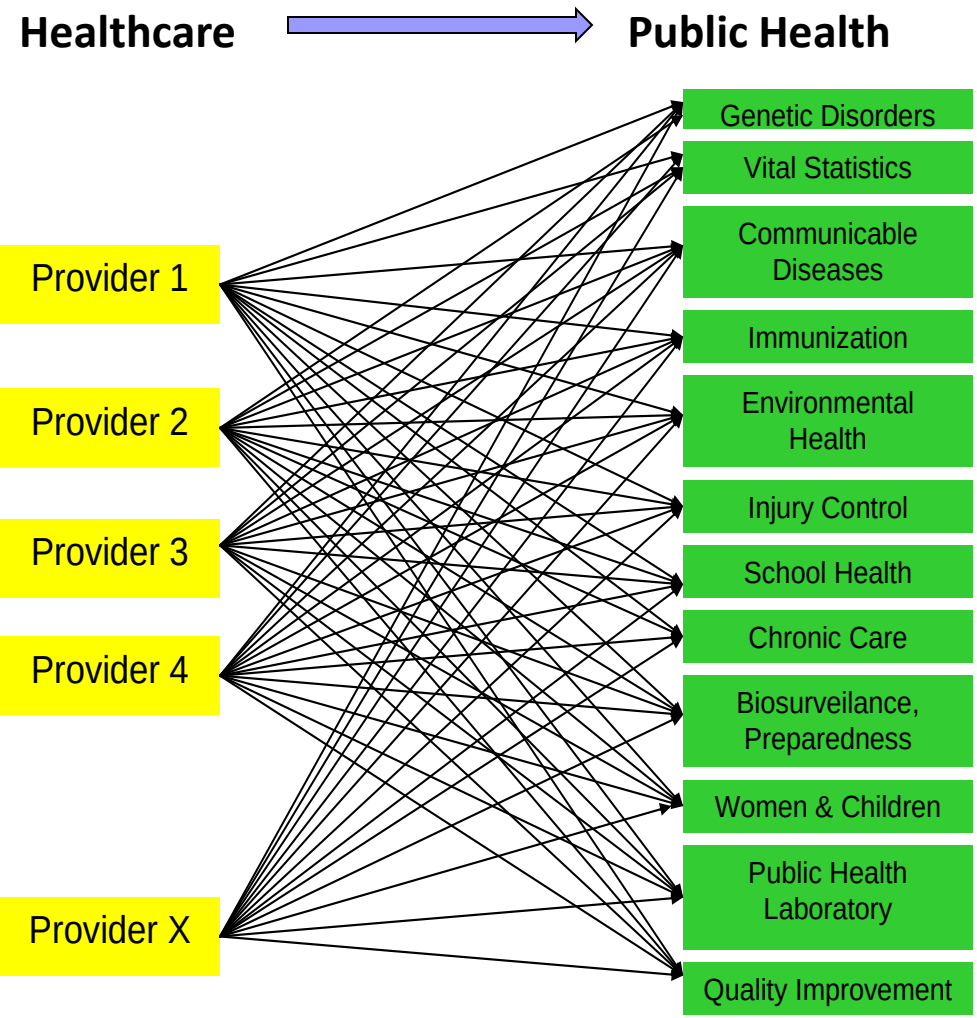
Public Health Reporting Today



Customized Point-to-Point Interfaces

Public Health Reporting Today



Customized Point-to-Point Interfaces

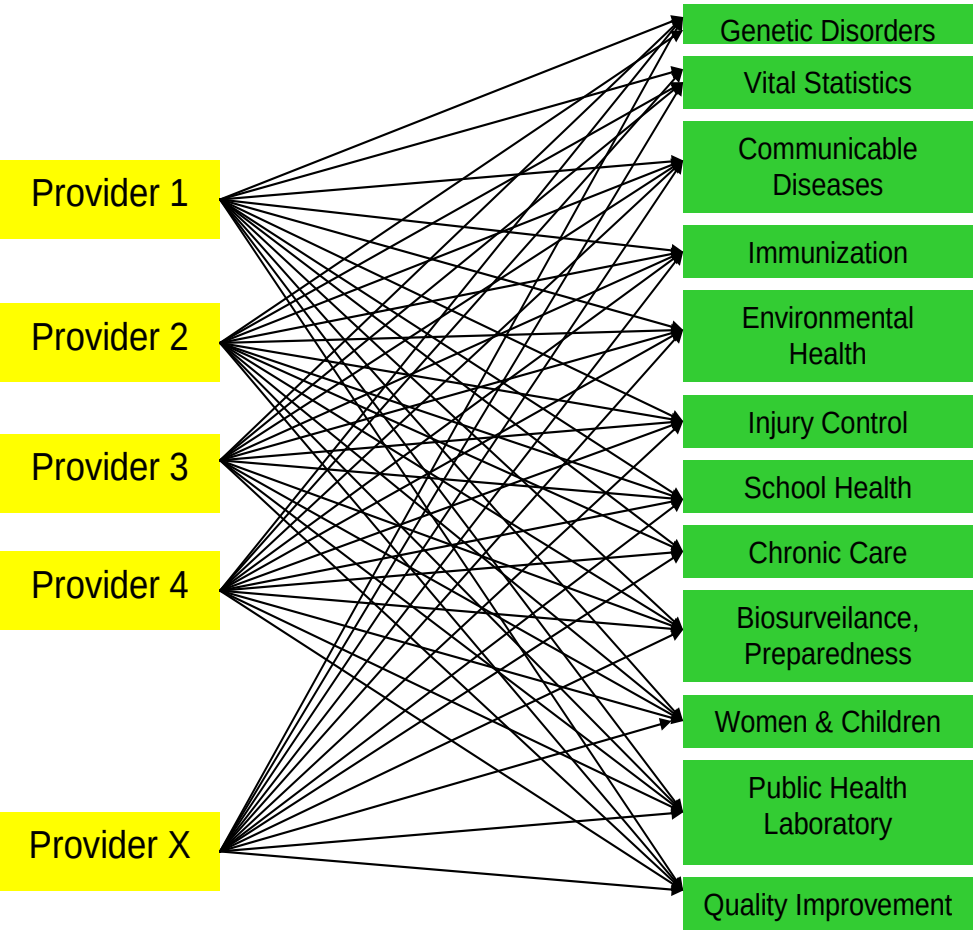
- **Over 60,000 customized, siloed public health information systems to which providers have to report often the similar information on different forms through different interfaces**
- **Cost is $8,000 per interface**
- **Underreporting is common for certain diseases (CDC, 2013**

http://www.cdc.gov/osels/scientific_edu/ss1978/SS1978.pdf)

From Connectivity to Interoperability Through Standards

TODAY → **TOMORROW**

Healthcare → **Public Health**



Customized Point-to-Point Interfaces

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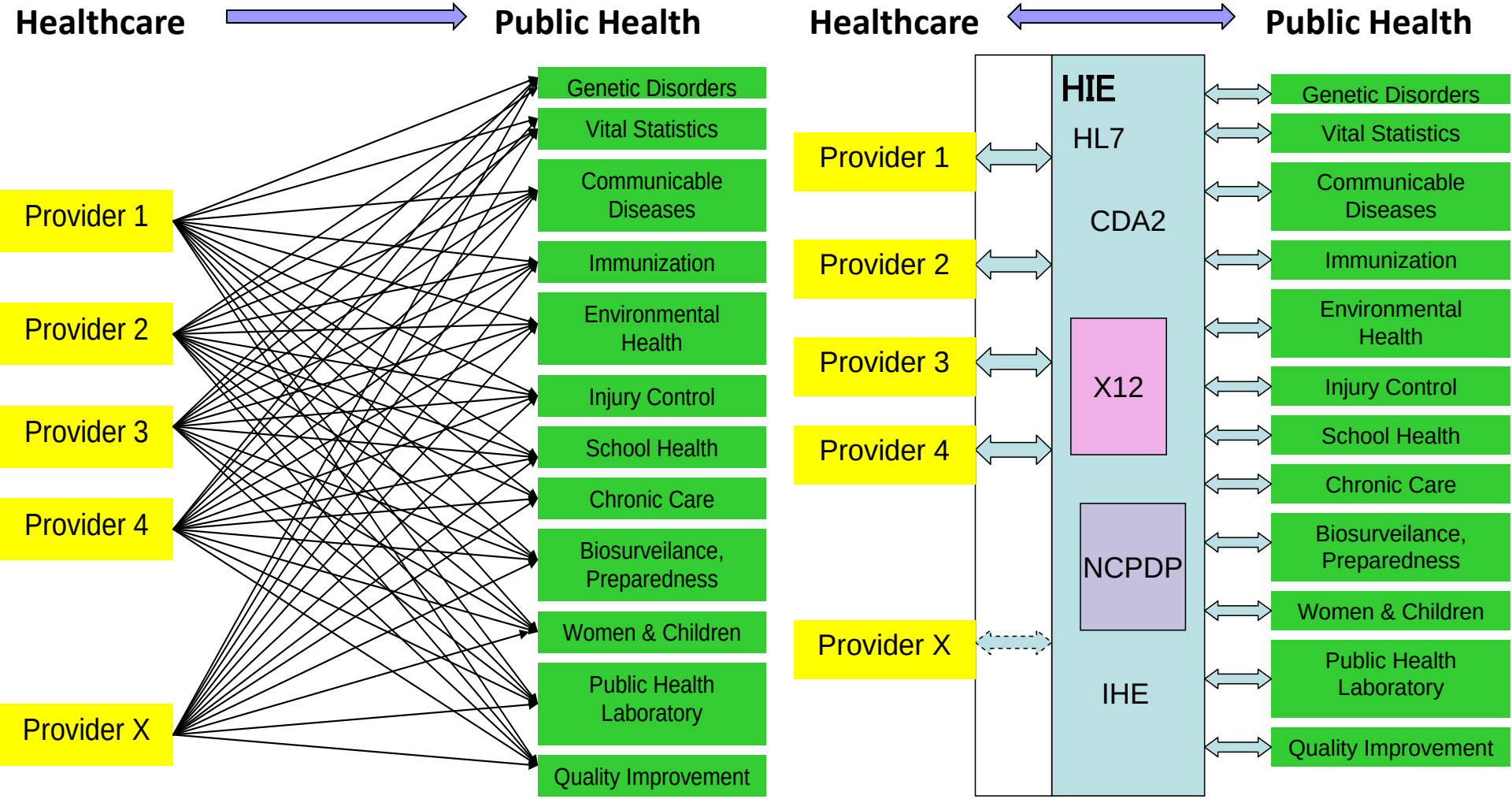
From Connectivity to Interoperability Through Standards

TODAY → TOMORROW



Customized Point-to-Point Interfaces → **Standards-based Information Exchange Infrastructure**

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CDA for Public Health (PH) Pilot Projects

CDA for Public Health Reporting:
Pilot Project for Communicable Diseases

(November 2011 - May 2012)

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CDA for PH Pilot Project: Case Reporting

Goal

- Demonstrate ability to receive a CDA-based Public Health Case Report by a Public Health Information System in two jurisdictions

CDA for PH Pilot Project: Case Reporting

Completed on 05/31/12

- Developed CDA-based Public Health Case Reports for 15 selected conditions in the Model Driven Health Tool (MHDT)
- Conducted 3 pilot projects:
  - State of Delaware (Tuberculosis)
  - New York State (Pertussis)
  - San Diego County (Pertussis)
  - CT, MA, MI, OK, SC, WA, OH participated as *observers*
- PHDSC CDA Project wiki at https://wiki.phdsc.org/index.php/CDA

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Building CDA Public Health Reports in MDHT

CDA PH Case Report Templates for Selected Conditions

1. Anthrax
2. Chlamydia trachomatis genital infection (& Gonorrhea, Syphilis)
3. Coccidioidomycosis
4. Haemophilus Influenzae, invasive disease, all ages, serotypes
5. Hepatitis B, Acute (& Hepatitis C)
6. Influenza
7. Meningococcal disease, all serogroups
8. Pertussis
9. Silicosis
10. Salmonellosis (& Shigella)
11. Streptococcus pneumoniae, invasive disease
12. Toxic-shock syndrome
13. Tuberculosis
14. Tularemia
15. West Nile virus (& Lyme)

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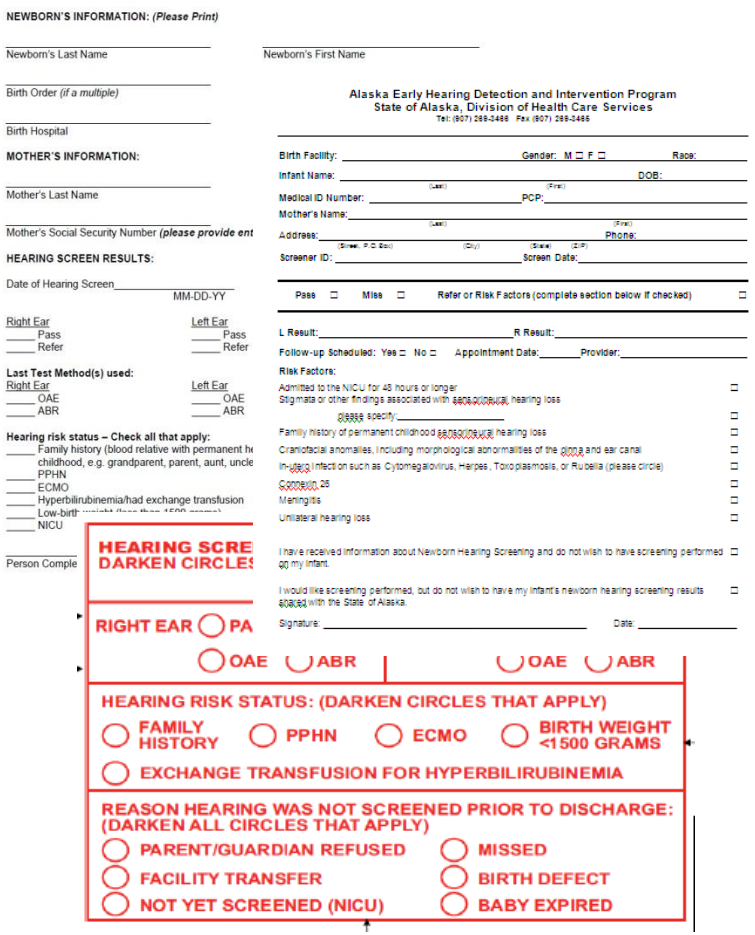
HL7 CDA Standards for Public Health Case Report


NEWBORN'S INFORMATION: *(Please Print)*

Newborn's Last Name

Newborn's First Name

Birth Order *(if a multiple)*

Birth Hospital

MOTHER'S INFORMATION:

Mother's Last Name

Mother's Social Security Number *(please provide ent*

HEARING SCREEN RESULTS:

Date of Hearing Screen_____ MM-DD-YY

Right Ear
____ Pass
____ Refer

Left Ear
____ Pass
____ Refer

Last Test Method(s) used:

Right Ear
____ OAE
____ ABR

Left Ear
____ OAE
____ ABR

Hearing risk status – Check all that apply:
____ Family history (blood relative with permanent h childhood, e.g. grandparent, parent, aunt, uncle
____ PPHN
____ ECMO
____ Hyperbilirubinemia/had exchange transfusion
____ Low-birth
____ NICU

Person Comple

Alaska Early Hearing Detection and Intervention Program
State of Alaska, Division of Health Care Services
Tel: (907) 269-2486 Fax (907) 269-2486

Birth Facility: Gender: M ☐ F ☐ Race:

Infant Name: (Last) (First) DOB:

Medical ID Number: PCP:

Mother's Name: (Last) (First)

Address: (Street, P.O. Box) (City) (State) (ZIP) Phone:

Screener ID: Screen Date:

Pass ☐ Miss ☐ Refer or Risk Factors (complete section below if checked) ☐

L Result: R Result:

Follow-up Scheduled: Yes ☐ No ☐ Appointment Date: Provider:

Risk Factors:

Admitted to the NICU for 48 hours or longer	☐
Stigmata or other findings associated with syndromal hearing loss	☐
disease specify:	☐
Family history of permanent childhood sensorineural hearing loss	☐
Craniofacial anomalies, including morphological abnormalities of the pinna and ear canal	☐
In-utero infection such as Cytomegalovirus, Herpes, Toxoplasmosis, or Rubella (please circle)	☐
Syndromes, 25	☐
Meningitis	☐
Unilateral hearing loss	☐

I have received information about Newborn Hearing Screening and do not wish to have screening performed on my infant. ☐

I would like screening performed, but do not wish to have my infant's newborn hearing screening results shared with the State of Alaska. ☐

Signature: Date:

HEARING SCRE
DARKEN CIRCLES

RIGHT EAR ◯ PA
◯ OAE ◯ ABR ◯ OAE ◯ ABR

HEARING RISK STATUS: (DARKEN CIRCLES THAT APPLY)
◯ FAMILY HISTORY ◯ PPHN ◯ ECMO ◯ BIRTH WEIGHT <1500 GRAMS
◯ EXCHANGE TRANSFUSION FOR HYPERBILIRUBINEMIA

REASON HEARING WAS NOT SCREENED PRIOR TO DISCHARGE: (DARKEN ALL CIRCLES THAT APPLY)
◯ PARENT/GUARDIAN REFUSED ◯ MISSED
◯ FACILITY TRANSFER ◯ BIRTH DEFECT
◯ NOT YET SCREENED (NICU) ◯ BABY EXPIRED

- Header
- Social History Section
- Clinical Information Section
- Treatment Information Section
- Encounters Section
- Relevant Diagnostics and Laboratory Section
- Immunizations Section


Public Health Case Report

Table of Contents

Social History

Clinical Information

Treatment Information

Encounters

Relevant diagnostic tests and/or laboratory data

Immunizations

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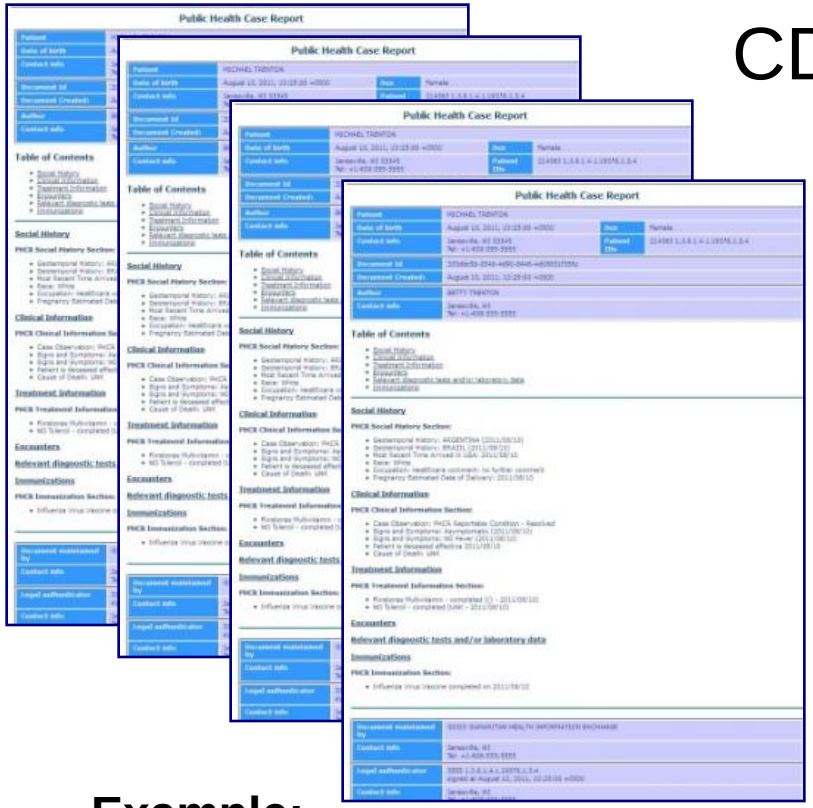
CDA for PH Pilot Project: Case Reporting



CDA Public Health Case Reports

https://wiki.phdsc.org/index.php/PH-Lab

- Header
- Social History Section
- Clinical Information Section
- Treatment Information Section
- Encounters Section
- Relevant Diagnostics and Laboratory Section
- Immunizations Section

Example:
Case Report Documentation: Pertussis Case Reports
Pertussis - Data Definitions xls
Pertussis - Implementation Guide pdf
Pertussis - Case Report 1 (XML File) (JPG Image) 12-05/10
Pertussis - Case Report 2 w/Labs (XML File) (JPG Image) 12-05/10

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Building CDA Public Health Reports (Templates)

Open Source Model Driven Health Tool - MDHT

MDHT Project Home

Project Page

mdht

Model-Driven Health Tools

Project Created: 06/11/2009

Project Categorization

charter

Project Members

Total Project Members: 112

Project Administrators:

David Carlson

John T.E. Timm

Site Administrator

Documents | Eclipse, UML & EMF Resources | Guides & Tutorials | Releases & Downloads

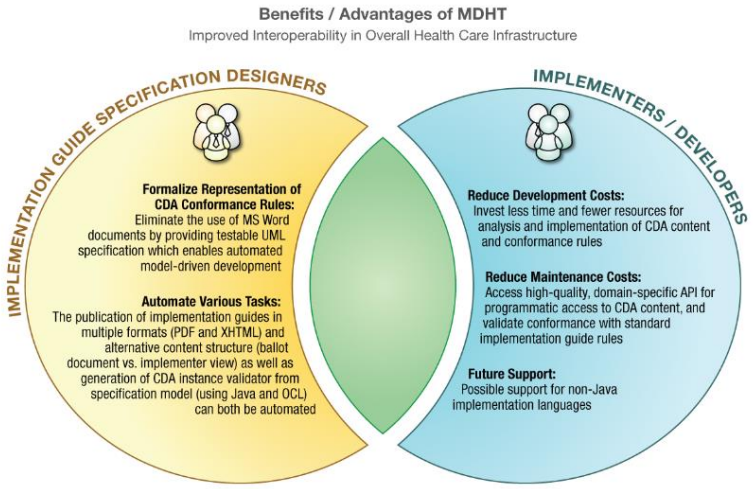
MDHT Release 1.0 Now Available!

Learn More About Downloads

Download from SourceForge

Welcome to Model-Driven Health Tools (MDHT)

Open Health Tools Model-Driven Health Tools (MDHT) Project is a wide-ranging open source effort to promote interoperability in healthcare infrastructure. It promotes shared artifacts between related healthcare standards and standards development organizations, and works to develop localized specifications. It also delivers a common modeling framework and tools that support seamless integration of design, publication, and runtime artifact creation.



URL: https://www.projects.openhealthtools.org/sf/projects/mdht

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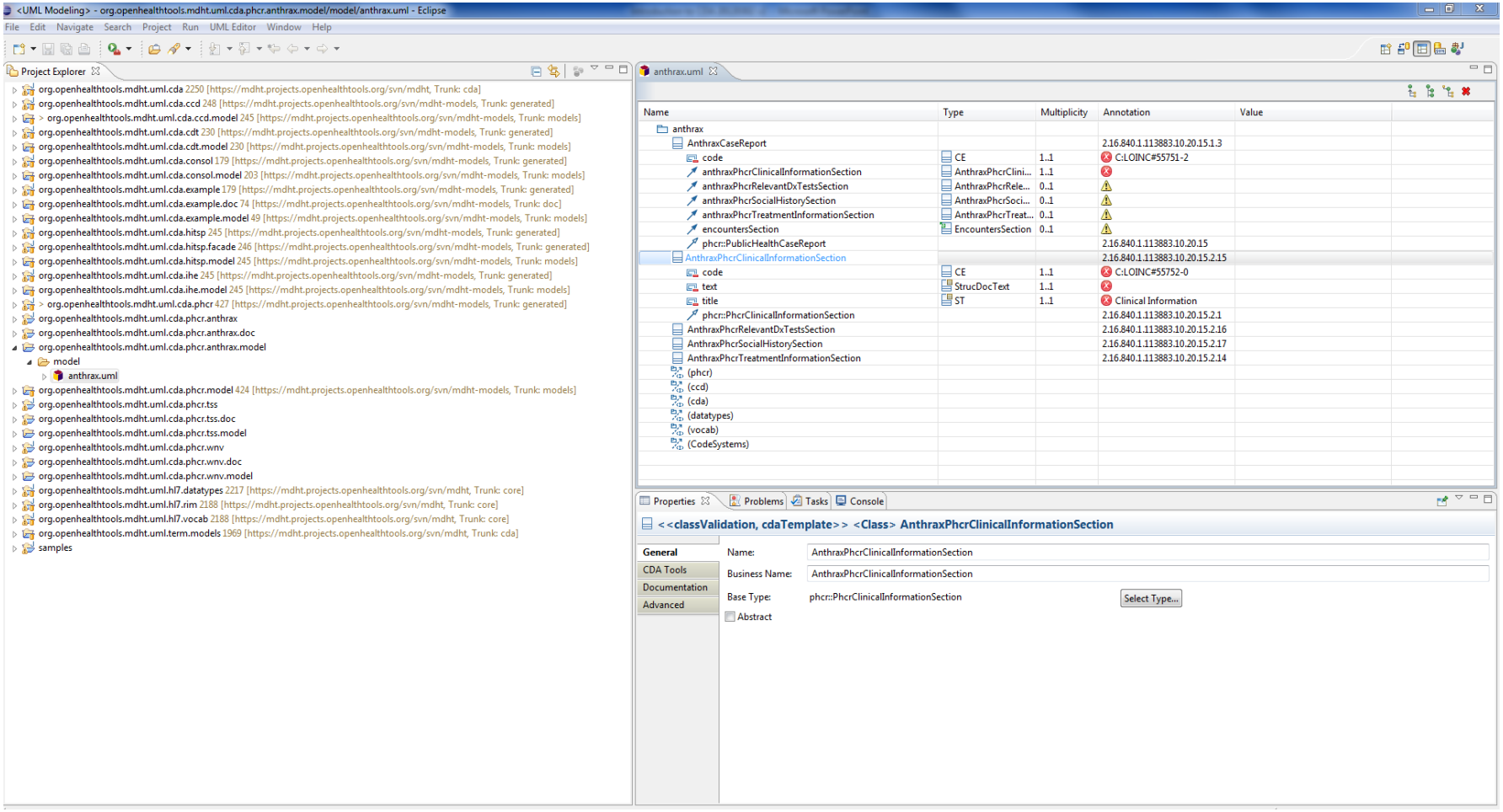
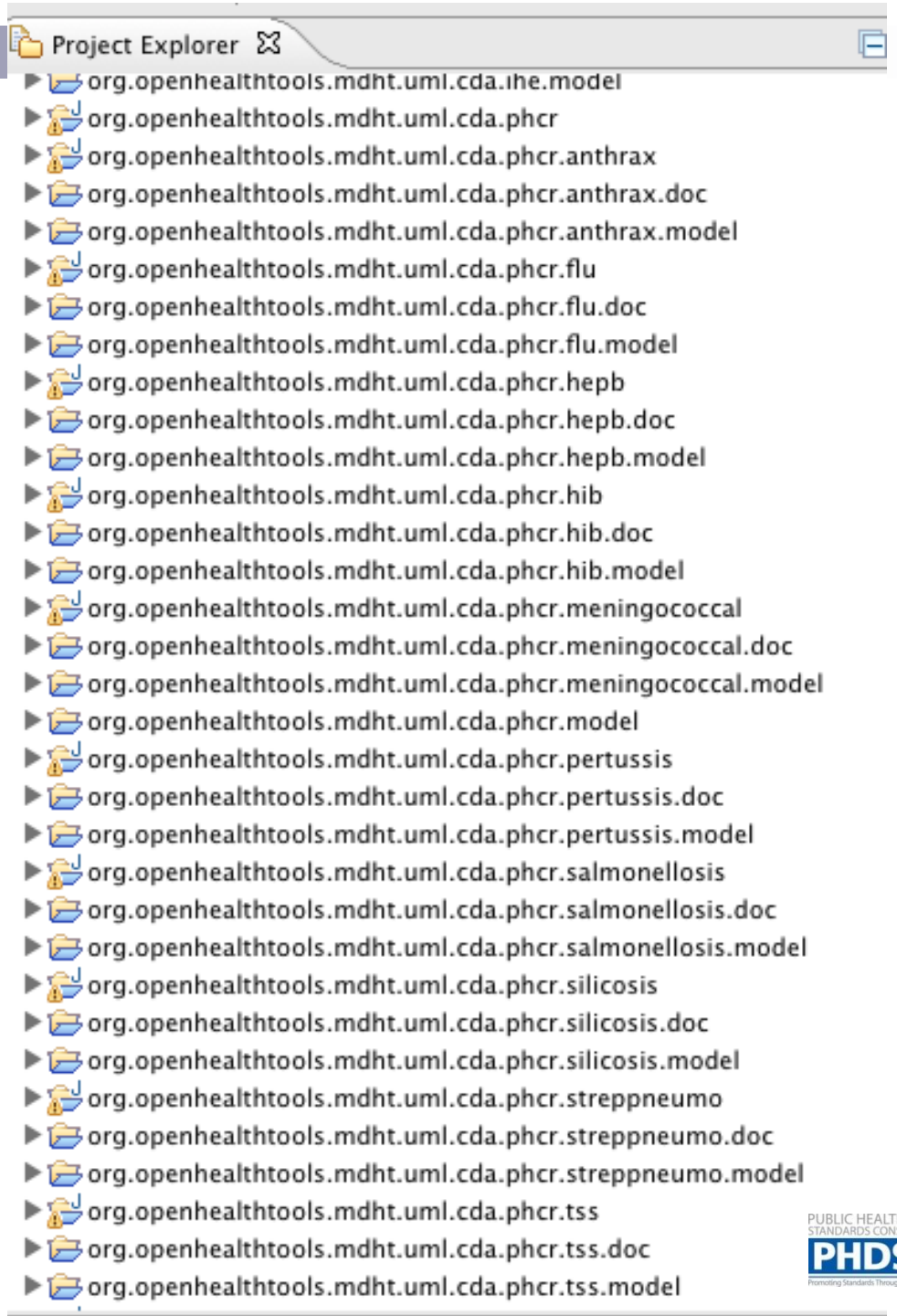
Building CDA Public Health Reports in MDHT

Model Driven Health Tool - MDHT



The MDHT automatically generates the CDA templates, validation is built-in.

MDHT Library of Public Health Reports



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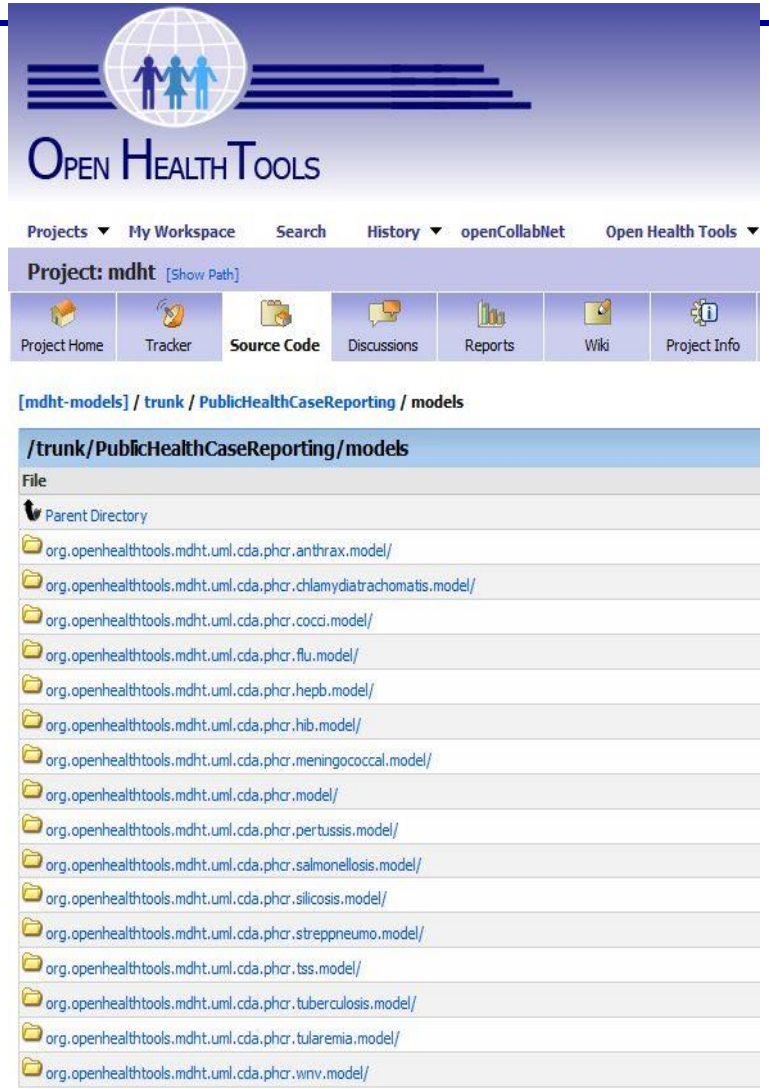
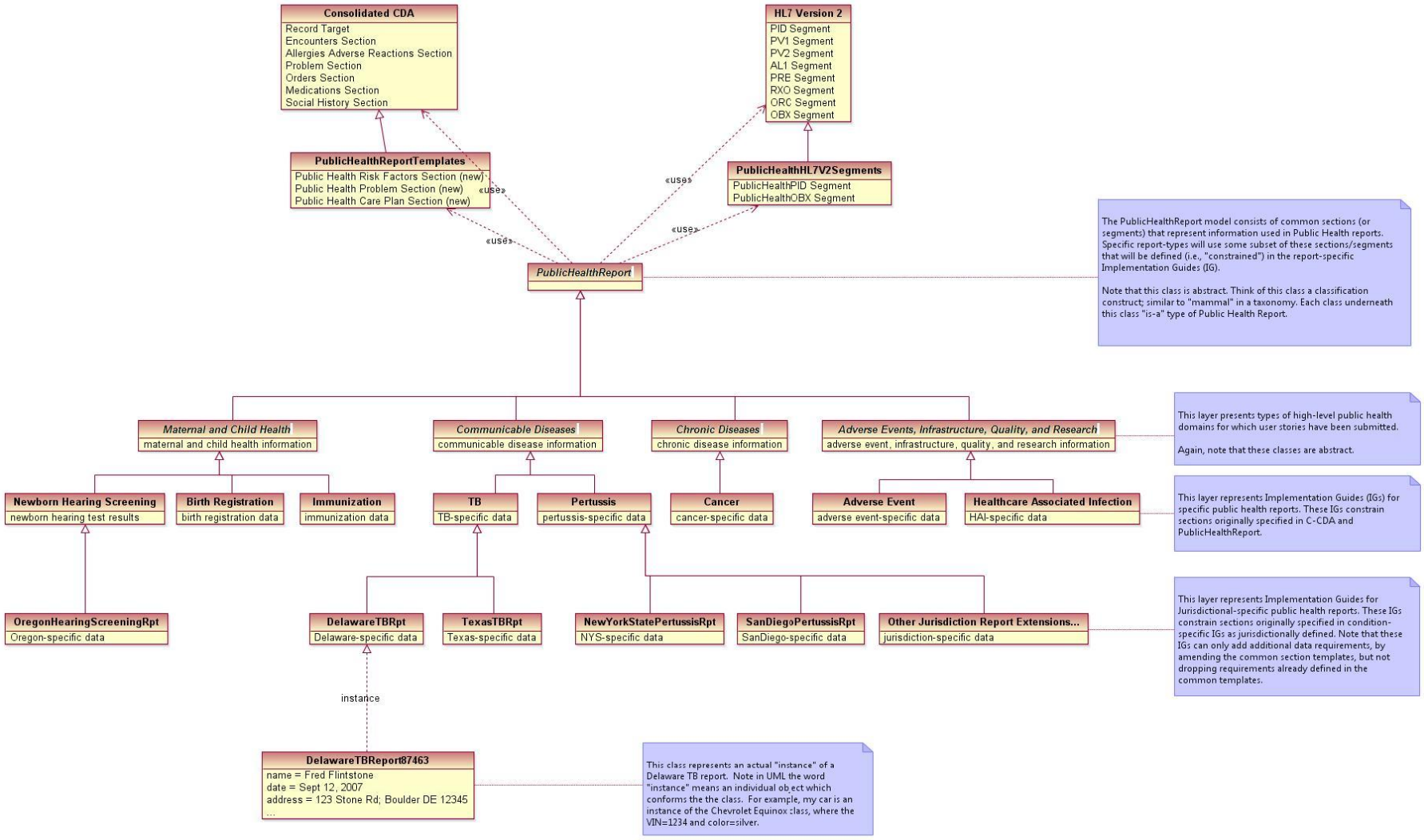
MDHT Public Health Reports Library



Office of National Coordinator for Health Information Technology (ONC). Standards & Interoperability Framework (S&I Framework). Public Health Reporting Initiative (PHRI) Reference Implementation Framework. URL: http://wiki.siframework.org/

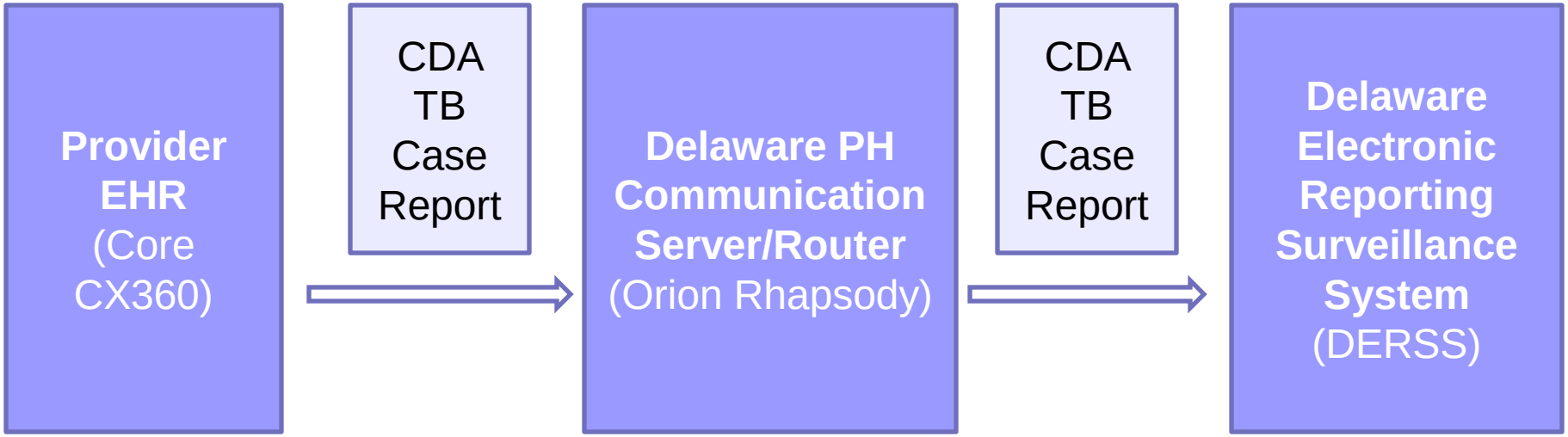
Public Health Reports Library: Reference Model (7 Programs/Domains)



Office of National Coordinator for Health Information Technology (ONC). Standards & Interoperability Framework (S&I Framework). Public Health Reporting Initiative (PHRI) Reference Implementation Framework. URL: http://wiki.siframework.org/

CDA for PH Pilot Project

Tuberculosis Public Health Reporting Schema: **DELAWARE**



CDA-based Actor Diagram

CDA for PH Pilot Projects

CDA for Public Health Reporting: Pilot Project for Early Hearing Detection and Intervention (EHDI)

(September 2012- May 2013)

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CDA for PH Pilot Project: EHDI

Goal

- Demonstrate the ability to receive a CDA-based EHDI Report by a Public Health Information System in two jurisdictions

CDA EHDI Report Templates

1.Notification of Birth - *based on newborn admission, the birthing facility's EHR sends a report to establish a newborn's record in state public health EHDI information system*

2.Newborn Hearing Screening (NHS) Outcome Report- *based on state-based forms*

3. EHDI Quality Measure 1a – *it measures the number of children screened prior to discharge from a birthing facility compared to a total number of live births within the reporting time period; it is based on individual patient-level NHS reports and Notification of Birth reports to compute QM EHDI-1a*

4.Early Hearing Care Plan (EHCP) - *based on state-based plans*

CDA EHDI Pilot Project Scope

1.Notification of Birth - *based on newborn admission, the birthing facility's EHR sends a report to establish a newborn's record in state public health EHDI information system*

2.Newborn Hearing Screening (NHS) Outcome Report - *based on state-based forms*

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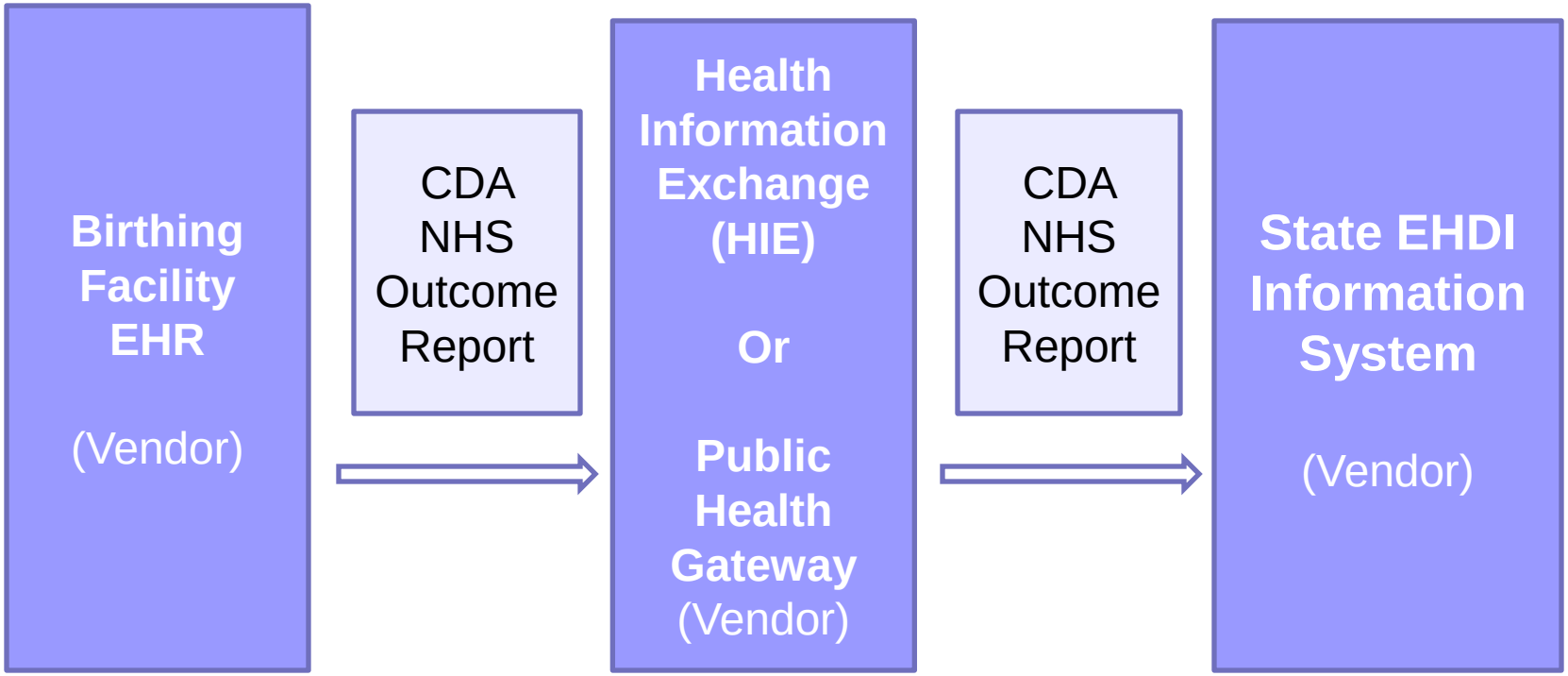
CDA for PH Pilot Project

Public Health Reporting Schema: EHDI



CDA-based Actor Diagram

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CDA EHDI Pilot Project: TEAM

TEAM

- States Participants:
  - North Dakota, Oregon
- States Observers
  - Maryland, Massachusetts, Michigan, Florida, Missouri, Ohio, Pennsylvania, South Carolina, Texas, Washington
- PHDSC Team

CDA for Pilot Projects

CDA for Public Health Reporting: Pilot Project Methodology

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CDA for PH Pilot Project: Methodology

State-Specific Documentation

- State Reporting Requirements (Guidelines)
- State Report Form
- State-specific CDA Report Form
- State-specific Use Case
- State-specific Design
- State-specific Work Plan
- State-specific Test Plan and Test Report with Screenshots and Validation Documentation
- State-specific Project Wiki Pages
  https://wiki.phdsc.org/index.php/EHDI

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CDA for PH Pilot Project: Methodology

Outcomes-Deliverables

- State-specific teams and work schedule:
  - Approvers (PH program staff, agency's IT staff)
  - Implementers (Vendors)
- State-specific work processes → Use Case
- State-specific data form → CDA Report
- State-specific pilot design → Schema
- State-specific implementation → Testing
- Project documentation → Report

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CDA for Pilot Project: State-Specific Use Case

Use Case	**Newborn Hearing Screening**	Data Categories
Actors: Business Actors Technical Actors	Newborn, Caregiver, Clinicians, Public Health Program Staff EHR, HIE, Public Health (PH) EHDI IS	
Flow of Events	1. Child is delivered. 2. Clinician conducts initial physical exam 3. Newborn is due for <hearing test> 4. Clinician orders an <hearing test> 5. Hospital staff conducts <hearing test> 6. Hospital staff enter data on the <hearing test> in the EHR database and generate <Newborn Hearing Screening (NHS) Outcome Report> 7. Information is electronically sent on <NHS Outcome Report > to the PH EHDI IS directly or via HIE 8. PH program EHDI IS receives Notification of Report Availability 9. PH programs' staff reviews the report and create PH EHDI IS record on a child in PH EHDI IS and upload <NHS Outcome Report > in PH EHDI IS 10. PH IS sends Acknowledgement of Receipt of the Report to EHR directly or via HIE.	1&2. Demographics, Labor & Delivery Record, Newborn EHR 3. Consent 4. Standing Order 5. Hearing Test Results 6. Hearing Test Results, NHS Outcome Report 7. NHS Outcome Report 8. Notification of Report Availability 9. Updated Pubic Health EHDI Record 10. Acknowledgement of Receipt
Pre-Conditions:	EHR System, Health Information Exchange (HIE)	
Post-Conditions:	Public Health Information System <EHDI IS>	
Preferred Timing	Daily updates	

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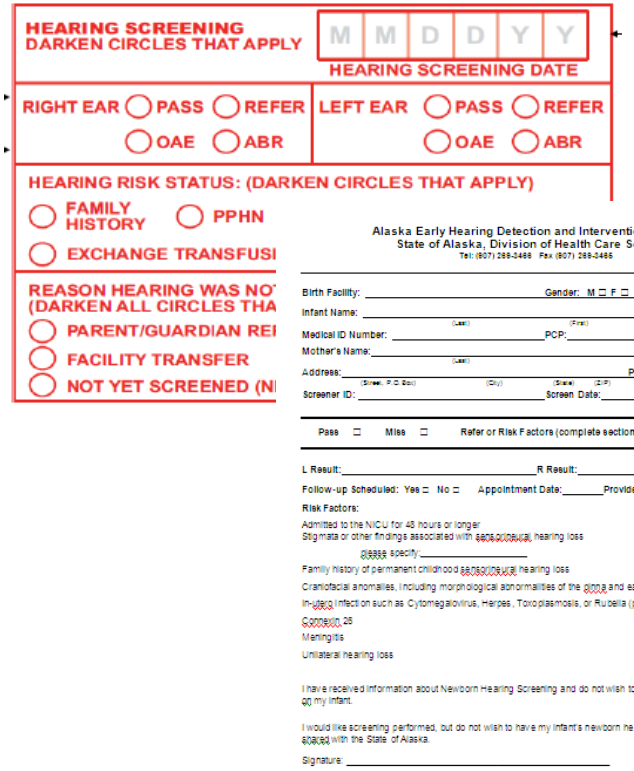
CDA for PH Pilot Project: CDA Reports

State-specific CDA Reports Templates Instances in MDHT



HEARING SCREENING
DARKEN CIRCLES THAT APPLY

M M D D Y Y
HEARING SCREENING DATE

RIGHT EAR ○ PASS ○ REFER
○ OAE ○ ABR

LEFT EAR ○ PASS ○ REFER
○ OAE ○ ABR

HEARING RISK STATUS: (DARKEN CIRCLES THAT APPLY)

○ FAMILY HISTORY ○ PPHN
○ EXCHANGE TRANSFUSI

REASON HEARING WAS NO
(DARKEN ALL CIRCLES THA
○ PARENT/GUARDIAN REI
○ FACILITY TRANSFER
○ NOT YET SCREENED (NI

Alaska Early Hearing Detection and Intervention Program
State of Alaska, Division of Health Care Services
Tel: (907) 269-3468 Fax (907) 269-3465

Birth Facility: _____ Gender: M ☐ F ☐ Race: _____
Infant Name: _____ DOB: _____
(Last) (First)
Medical ID Number: _____ PCP: _____
Mother's Name: _____
(Last) (First)
Address: _____ Phone: _____
(Street, P.O. Box) (City) (State) (ZIP)
Screener ID: _____ Screen Date: _____

Pass ☐ Miss ☐ Refer or Risk Factors (complete section below if checked) ☐

L Result: _____ R Result: _____
Follow-up Scheduled: Yes ☐ No ☐ Appointment Date: _____ Provider: _____
Risk Factors:
Admitted to the NICU for 48 hours or longer ☐
Stigmata or other findings associated with sensorineural hearing loss
(please specify: _____) ☐
Family history of permanent childhood sensorineural hearing loss ☐
Craniofacial anomalies, including morphological abnormalities of the pinna and ear canal ☐
In-utero infection such as Cytomegalovirus, Herpes, Toxoplasmosis, or Rubella (please circle) ☐
Conexin 26 ☐
Meningitis ☐
Unilateral hearing loss ☐

I have received information about Newborn Hearing Screening and do not wish to have screening performed on my infant. ☐

I would like screening performed, but do not wish to have my infant's newborn hearing screening results stored with the State of Alaska. ☐

Signature: _____ Date: _____

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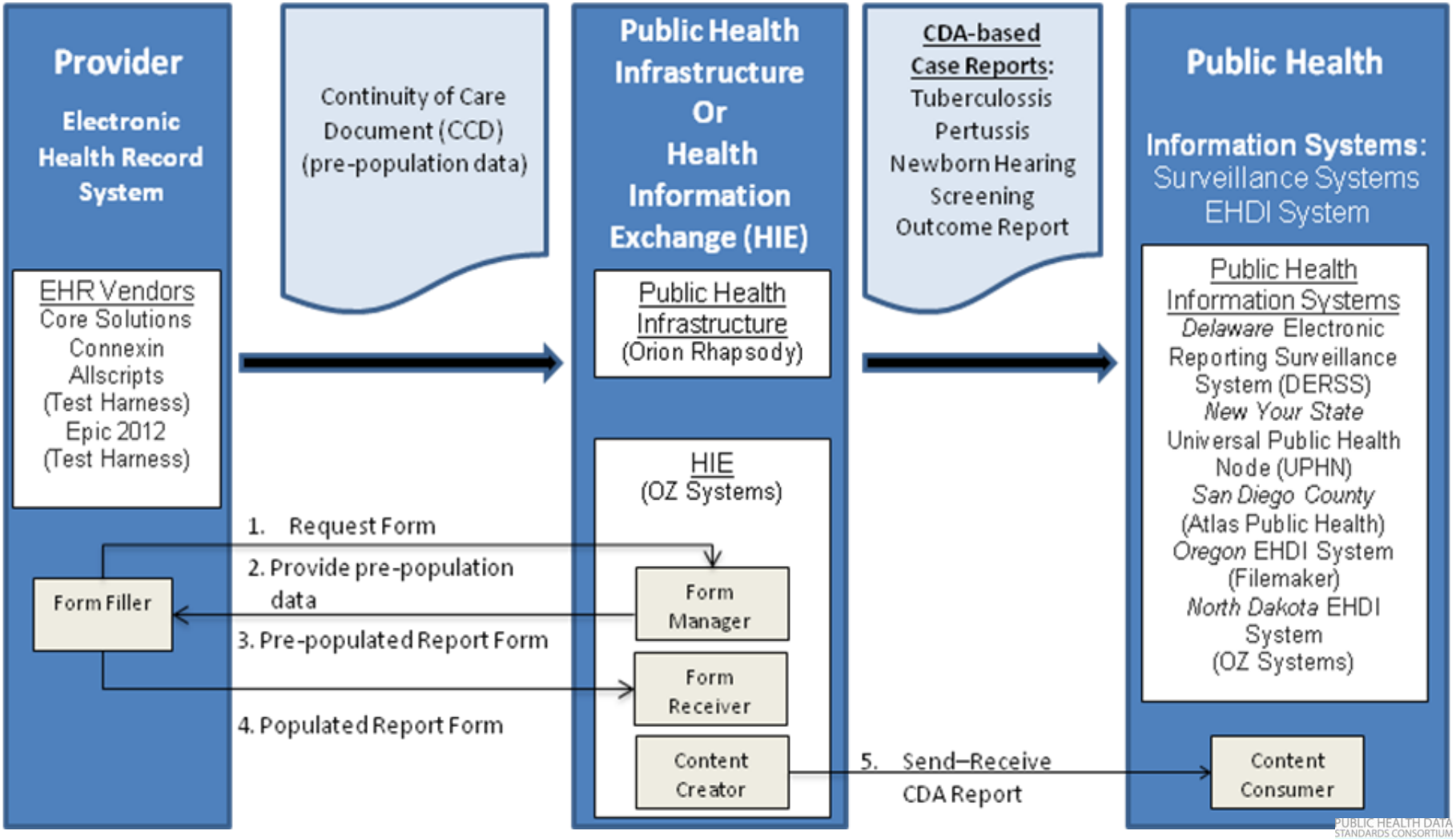
CDA for PH Pilot Project: Reporting Schema



Communicable Disease CDA Pilot Project Report. 2012. URL: https://wiki.phdsc.org/index.php/CDA
EHDI CDA Pilot Project Report. 2013. URL: https://wiki.phdsc.org/index.php/EHDI-Pilot

CDA for PH Pilot Project: Interoperability Standards and Actors

HL7 Continuity Care Document Standard *(Actors: Content Creator)*

HL7 Clinical Document Architecture Release 2 (CDA R2) Standard *(Actors: Content Creator and Content Consumer)*

HL7 Implementation Guide for CDA Release 2 on Public Health Case Reporting, Release 1 *(Actors: Content Creator and Content Consumer)*

IHE Early Hearing Care Plan (EHCP) Content Profile *(Actors: Content Creator and Content Consumer)*

IHE Retrieve Form for Data (RFD) Integration Profile *(Actors: Form Manager, Form Filler and Form Receiver)*

IHE Cross-enterprise Document Reliable Interchange (XDR) Integration Profile (Actors: Content Creator and Content Consumer)

Communicable Disease CDA Pilot Project Report. 2012. URL: https://wiki.phdsc.org/index.php/CDA
EHDI CDA Pilot Project Report. 2013. URL: https://wiki.phdsc.org/index.php/EHDI-Pilot

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CDA for PH Pilot Project: Time Commitment

Table 14. CDA Pilot Project: Level of Effort by Site and Project Team Role

Title	Role Description	Hours Spent on the Project	Desired Hours Needed for the Project
Delaware			
Public Health and Clinician User Tasks			
Program Public Health Informaticist	Provided subject matter expertise for EHR-based data reporting	40	40
Program Data Manager	Provided data management expertise from TB Program perspectives	7	2
Total		*47*	*42*
Technical Team Tasks			
Health Department CIO	Provided oversight of internal team, reviewed work effort to milestones and decision-maker for project	75	40
Public Health Informaticist	Provided subject matter expertise for DERSS (Delaware Electronic Reporting and Syndromic Surveillance system) data consumption	65	40
Senior Application Support Specialist	Provided technical support for CDA message transport from Orion Rhapsody server and application changes in DERSS	35	35
Public Health Informaticist	Provided overall project management	150	200
Total		*325*	*315*
Total		372	357

Source: Public Health Data Standards Consortium (PHDSC). Clinical Document Architecture (CDA) for Public Health. CDA Pilot Project Report. October 2012. URL: https://wiki.phdsc.org/images/f/f1/PHDSC-CDA-for-PH-Pilot-Report-FINAL-10-12-12.pdf

CDA for PH Pilot Projects

Resources:

1. PHDSC. Clinical Document Architecture (CDA) for Public Health. CDA Pilot Project: Communicable Diseases. Report. October 2012. URL: https://wiki.phdsc.org/images/f/f1/PHDSC-CDA-for-PH-Pilot-Report-FINAL-10-12-12.pdf
2. CDA for Public Health Pilot Project: Communicable Diseases Wiki Pages URL: https://wiki.phdsc.org/index.php/CDA
3. CDA for Public Health Pilot Project: Communicable Diseases Forbes on NYS Pilot. URL: http://www.forbes.com/sites/amywestervelt/2012/08/27/could-technology-help-stem-the-spread-of-whooping-cough/
4. PHDSC. Clinical Document Architecture (CDA) for Public Health. CDA Pilot Project: Early Hearing Detection and Intervention (EHDI). Report. August 2013. URL: https://wiki.phdsc.org/images/5/56/PHDSC-EHDI-CDA-Pilot-Report_FINAL-08132013.pdf
5. CDA for Public Health Pilot Project: EHDI Wiki Pages.URL: https://wiki.phdsc.org/index.php/EHDI-Pilot

PUBLIC HEALTH DATA STANDARDS CONSORTIUM
PHDSC
Promoting Standards Through Partnerships

MISSION

Bring a common voice from the public health community to the national efforts of standardization of healthcare and population health information

PROGRAM AREAS

Standards Development and Harmonization

Enable public health agencies and healthcare organizations to exchange data in real time

Health Information Exchanges

Foster awareness, partnerships and collaboration at the local, state and national levels

Privacy and Security

Address individual and organizational privacy and security issues related to maintaining and sharing health information

Workforce Development

Provide continuing education in Public Health Informatics and Health IT standards

CONTACT US

www.phdsc.org

PUBLIC HEALTH DATA STANDARDS CONSORTIUM

PHDSC

Promoting Standards Through Partnerships

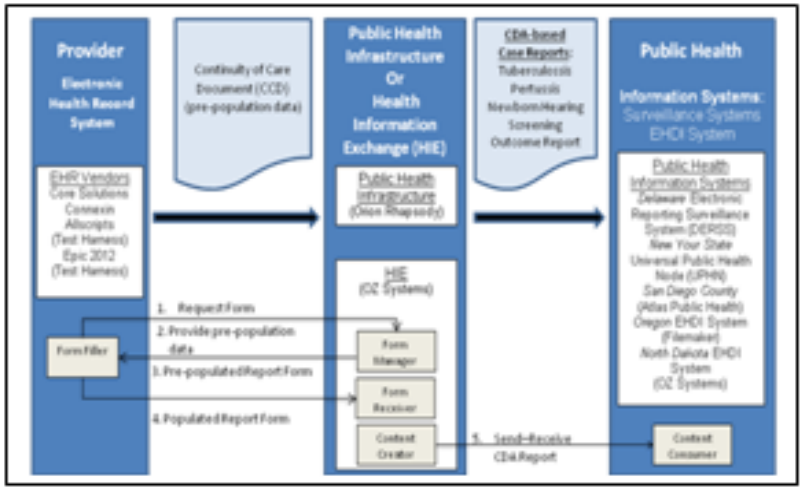
Deploying Interoperability Standards in Public Health: Pilot Projects

Pilot Projects for Communicable Disease Reporting

In May 2012, PHDSC completed pilot projects for reporting cases of communicable diseases from clinical Electronic Health Records Systems (EHR-S) to public health surveillance systems in three jurisdictions:

- ***State of Delaware*** *(Tuberculosis)*
- ***State of New York*** *(Pertussis)*
- ***San Diego County*** *(Pertussis)*

PUBLIC HEALTH REPORTING ARCHITECTURE



Pilot Projects for Early Hearing Detection and Intervention

In May 2013 PHDSC completed pilot projects to demonstrate electronic data exchange between EHR-S and Public Health Early Hearing Detection and Intervention (EHDI) program information systems in two jurisdictions:

- ***State of Oregon*** *(Newborn Hearing Screening Outcome Report* from Birthing Facility to State EHDI)
- ***State of North Dakota*** *(Early Hearing Care Plan from State EHDI to Pediatrician)*

INTEROPERABILITY STANDARDS AND ACTORS

HL7 Continuity Care Document Standard
(Actors: Content Creator)
HL7 Clinical Document Architecture Release 2 (CDA R2) Standard
(Actors: Content Creator and Content Consumer)
IHE Early Hearing Care Plan (EHCP) Content Profile
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MORE INFORMATION

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EHDI CDA Pilot Project Report. 2013. URL: https://wiki.phdsc.org/index.php/EHDI-Pilot

This project was supported through the CDC Cooperative Agreement #5U38HM000488-05

Acknowledgements: CDA for PH Pilot Project - Communicable Diseases

PHDSC Project Team:

- Anna Orlova, PHDSC
- Maiko Minami, PHDSC
- Alla Fridman, PHDSC
- Lisa Nelson, PHDSC
- Sarah Quaynor, PHDSC
- Kendall Patterson, Delaware
- Sondra Renly, IBM Research
- Lori Reed-Fourquet, eHealthSign
- Nikolay Lipskiy, CDC

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- Monica Huang, CSTE
- Linda Greengas, Connecticut
- Hwa-Gan H Chang, New York State
- Rachel Civen, LA County
- Sarah Correll, Idaho
- Shawn McBrien, Washington
- Azadeh Tasslimi, Washington
- Julieann Simon, Washington
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- Marguerite A. Erme, Ohio
- Jeremy Budd, Ohio
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- Orion McCotter, Arizona

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- Wes Kennemore, APHL
- Rita Altamore, University of Washington
- Geoffrey Calvert, CDC
- Sara Luckhaupt, CDC
- Margaret Filios, CDC
- Genevieve Barkocy Luensman, CDC
- Gautam Kesarinath, CDC
- Eileen Storey, CDC
- Ben Park, CDC
- Elizabeth Briere, CDC
- Amanda Cohn, CDC
- Amanda Faulkner, CDC
- Eric Larson, CDC
- Sundak Ganesan, CDC
- Sheila Abner, CDC
- Jerry Sable, TSJG
- James Case, NLM
- Bob Dolin, Lantana
- Ted Klein, TKlein

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- Jean Collison, Delaware
- Patricia Burke, Delaware
- Barry Borden, Delaware
- Andrew Rentschler, Delaware

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- Linh H. Le, New York State
- Shannon L Kelley, New York State
- Geraldine Johnson, New York State
- Kathleen S. Brousseau, New York State
- Sarah Goff, New York State
- Kevin Magbitang, New York State
- Kathryn J. Schmit, New York State
- Jessica Yen, San Diego County
- Jeffrey Johnson, San Diego County

Pilot Vendors:

- Nitin Kunte, OZ Systems
- Terese Finitzo, OZ Systems
- Rachna Bagdi, Core Solutions
- Shishir Mishra, Core Solutions
- David Hellhake, Core Solutions
- Charan Boddu, Core Solutions
- Gregory Anderson, Connexin Software
- Will Lokes, Connexin Software
- Russell von Blank, ATLAS
- David Moton, ATLAS
- Kate Peters, ATLAS
- Rahul Deshpande, ATLAS
- David Trottier, LabWare
- Peter Payne, LabWare

Acknowledgements:
CDA for PH Pilot Project - EHDI

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- Lisa Nelson, PHDSC
- Sarah Quaynor, PHDSC
- Lori Reed-Fourquet, eHealthSign
- John Eichwald, CDC

State Teams:

State of North Dakota Team

North Dakota Early Hearing Detection and Intervention Program (ND EHDI), State of North Dakota

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Mr. *Thomas Orluck*, Database Specialist, Minot State University

Sanford Health, North Dakota

Mr. Scott Egeberg, Information Systems Interface Analyst;
Mr. Kent Blanchard, Application Support Manager

Trinity Health Minot, North Dakota

Ms. Renae Johnson, RN Clinic - Nurse Manager

State of Oregon Team

Oregon Health Authority, Center for Prevention and Health Promotion

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Ms. Dina Dickerson, Senior Informaticist;
Mr. ChiaHua Yu, Public Health Informaticist;
Ms. Meuy Swafford, EHDI Data Quality Coordinator,
Mr. Trong Nguyen, System Administrator/Informatics Specialist

Oregon Health & Science University (OHSU) Hospital,

Mr. Doug Clauder, Interface Engineer;
Mr. Tom Drury, Interface Team Manager;
Mr. Malcolm Chun, Provider Epic EMR Specialist;
Ms. Karen Alexander, Clinical Workflow Analyst;
Mr. Bud Garrison, Director of Clinical Informatics;
Ms. Heather Durham, Audiologist;

Vendors

Epic

Mr. John Stamm, Configuration Advisor

Orion Health

Mr. John Dunn, Sales Director;
Mr. Drew Ivan, Rhapsody Product Manager

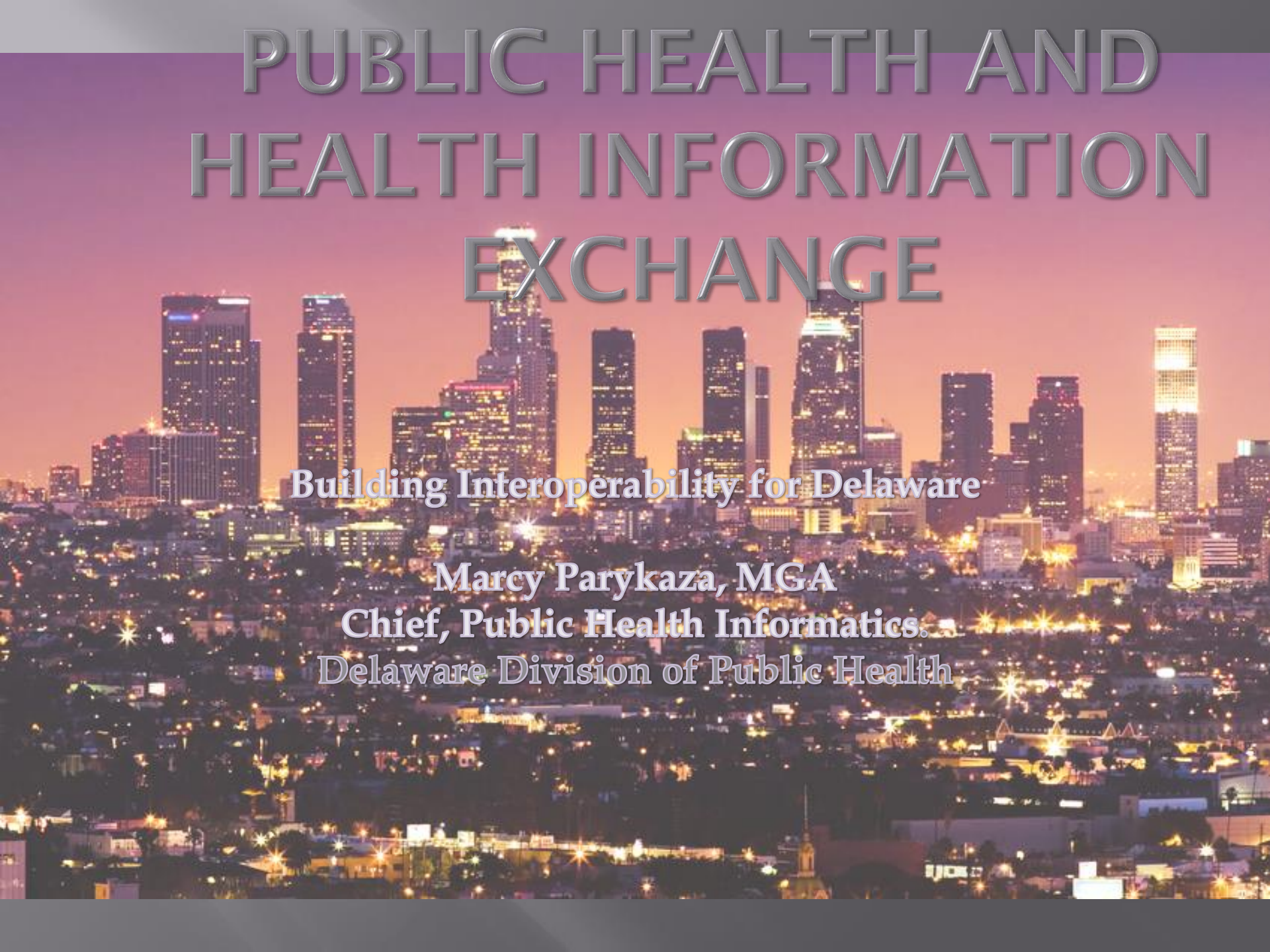
OZ Systems

Dr. Terese Finitzo, Chief Executive Officer;
Dr. Ken Pool, Chief Operating Officer;
Ms. Lura Daussat, Program Coordinator;
Dr. Matt Oefinger, Chief Technology Officer;
Mr. Steve Montgomery, Vice-President of Operations;
Mr. Nitin Kunte, Director of Research and Development

Contributor

Mr. Andrew McCaffrey, Computer Scientist, National Institute of Standards and Technology (NIST)

PUBLIC HEALTH AND HEALTH INFORMATION EXCHANGE

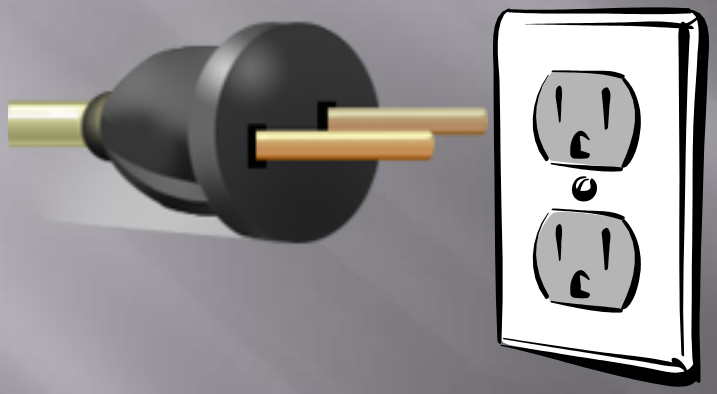


Building Interoperability for Delaware

Marcy Parykaza, MGA
Chief, Public Health Informatics
Delaware Division of Public Health

Delaware Public Health 10 years ago

- Programmatic silos based on funding stream



- Lack of standards
- "Manual" interoperability

- No strategic vision

…The Original Public Health HIE

Child Support

Vital Statistics

WIC

Office of Drinking Water

Public Health Lab

Immuni-zations

Cancer Registries

NEDSS based system

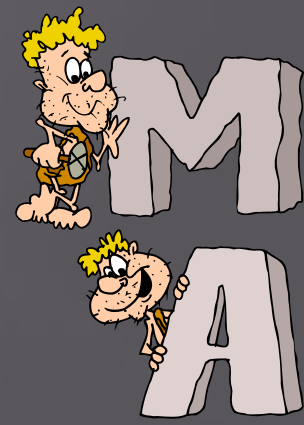
New Born Screening

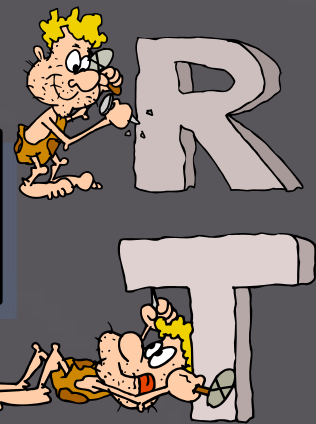
Clinic Systems

Bio-T & Prepared-ness

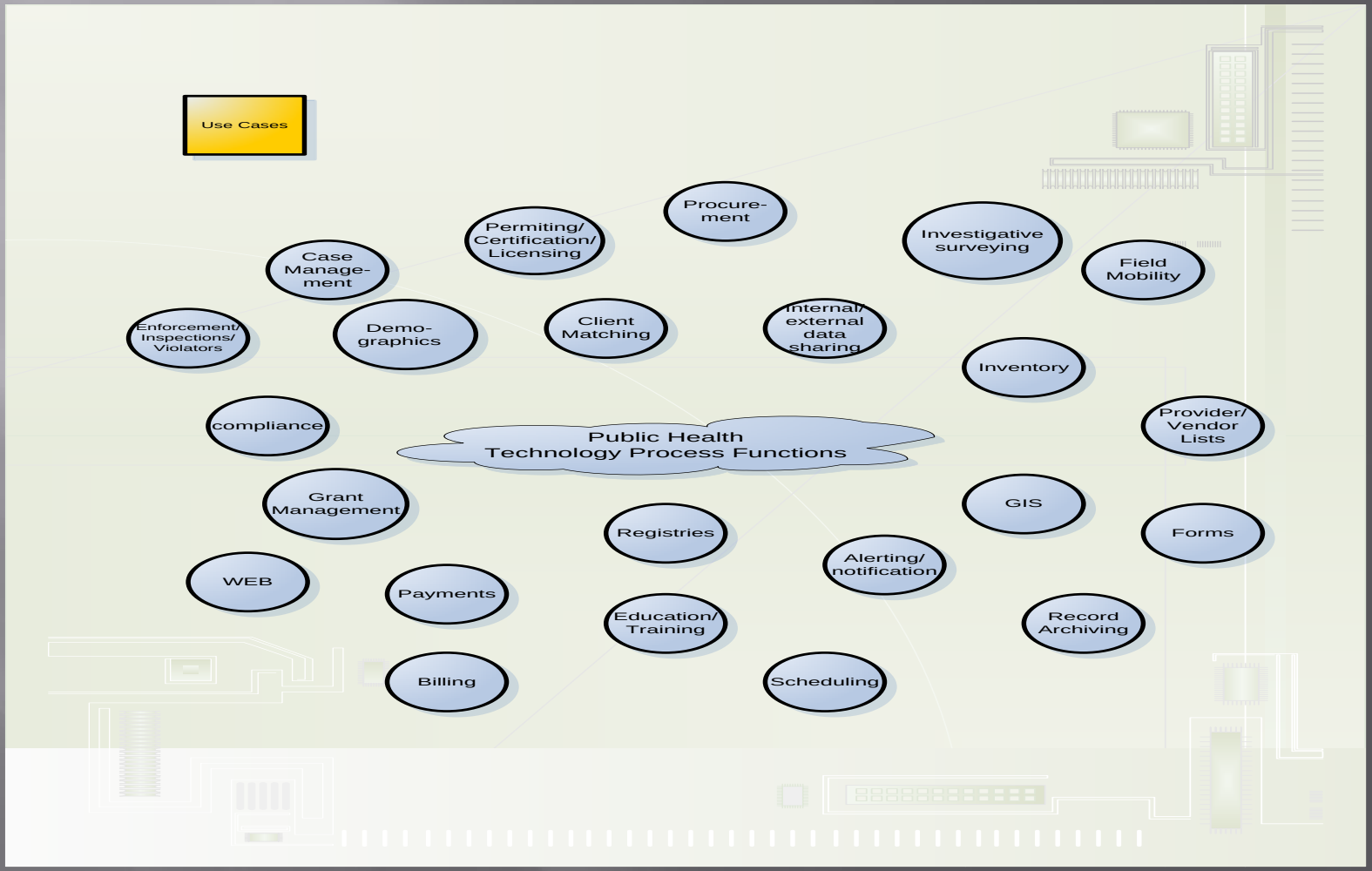
HIV/AIDS

Ryan White





Rethinking:
Taking a "Systems" approach



Building integration internally and externally

Public Health approach

- Strategic Plan
- Repeatable "Service" based processes
- Internal HIE
- Mini-data hubs(new "farmettes")
- Leveraged functionality (billing, eligibility)

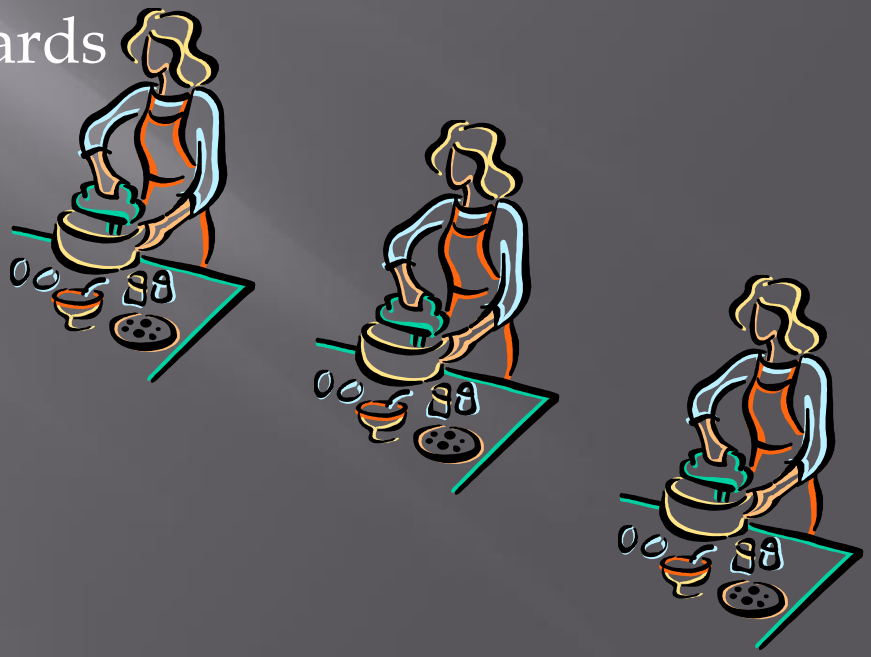
- Connected partners through:
  - PHIN MS
  - SFTP
  - VPN
  - Web Services
  - Standards based HL7

Delaware Health Information Network (DHIN)

- Hospitals
- Providers Offices
- Laboratories
- State
  - Public Health
  - Medicaid
  - Long Term Care Resident Protection
- Other HIE's
- Pro-Access (inbox, search)
- Community Health Record
- Direct
- SFTP
- VPN
- Web Services

Challenges achieving interoperability

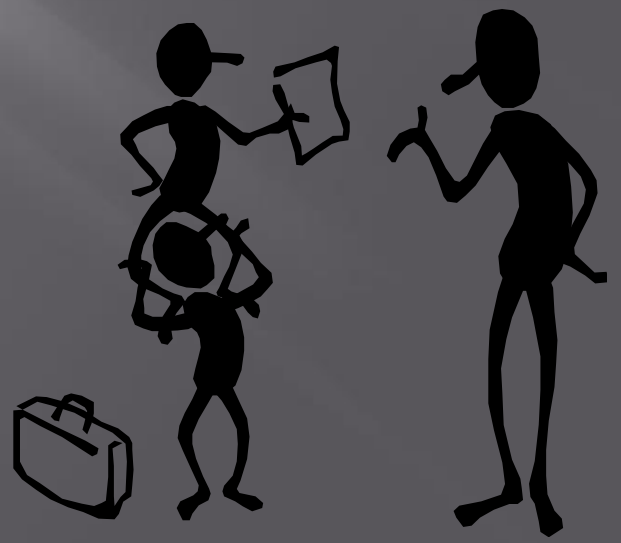
- Too many cooks…..
  - Communication between all the parties
  - Time schedules/commitments
  - Different "valid " standards
  - Different Vendors
  - Conflicting priorities



  - ….The Big "P"

More Challenges

- Lack of expertise in HIE exchanges
- EMR vendor landscape is changing
- What happens after MU
- Upgrade and replacement schedules
- What are we to do with the data we are collecting
  - Ownership
  - Privacy
  - Security



Biggest Challenge Right Now

- The Question of Sustainability….has not been satisfactorily addressed.

Improvements as a result of data exchange

- Strengthened Partnerships
  - …….a common enemy
  - …….a common goal
- New & Improved workflows (technical and business)
- Understanding and adherence to National Standards
- Leveraging IT functionalities
  - Fewer more robust systems
  - Common business workflows
  - Changing the “way we do things around here”

The Greater Good

- Creating reusable processes across the State(hospitals, providers, government)
- Creating a collection of data for better health care:
  - Population health
  - Patient health
  - Baseline for quality measures and improvements
  - Reporting
- "One stop data shopping" with more robust data for:
  - Trend analysis
  - Syndromic surveillance
  - Research
  - etc. etc. etc.

What does the Future Hold

- Core Systems
- Dashboards
- Analytics
- GIS based Reporting
- Better partnerships
- New funding models
- Service Broker Model

Lessons learned/Best practices

- Just because it looks easy doesn't mean it can happen quickly.
- Just because one IT group approves, doesn't mean the others will.
- Just because the grant is ending doesn't mean the project is ending.
- Having lots of project managers does not make it go better, easier or faster.

It takes planning, time and money

But it is worth it in the end

Questions?

- How does public health fit into the value proposition for health information exchange?
- What are the challenges around interoperability for public health data exchange?
- What public health use cases do you expect HIEs to cover in the future? Which will be most valuable?

Get Involved

Interested in speaking on a webinar, participating in a case study, or advising on the HIE survey? Please contact alex.kontur@ehidc.org

May 21-22, 2014 | Washington, DC

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http://ehidc.org/events-landing/daf-2014

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Thank you!