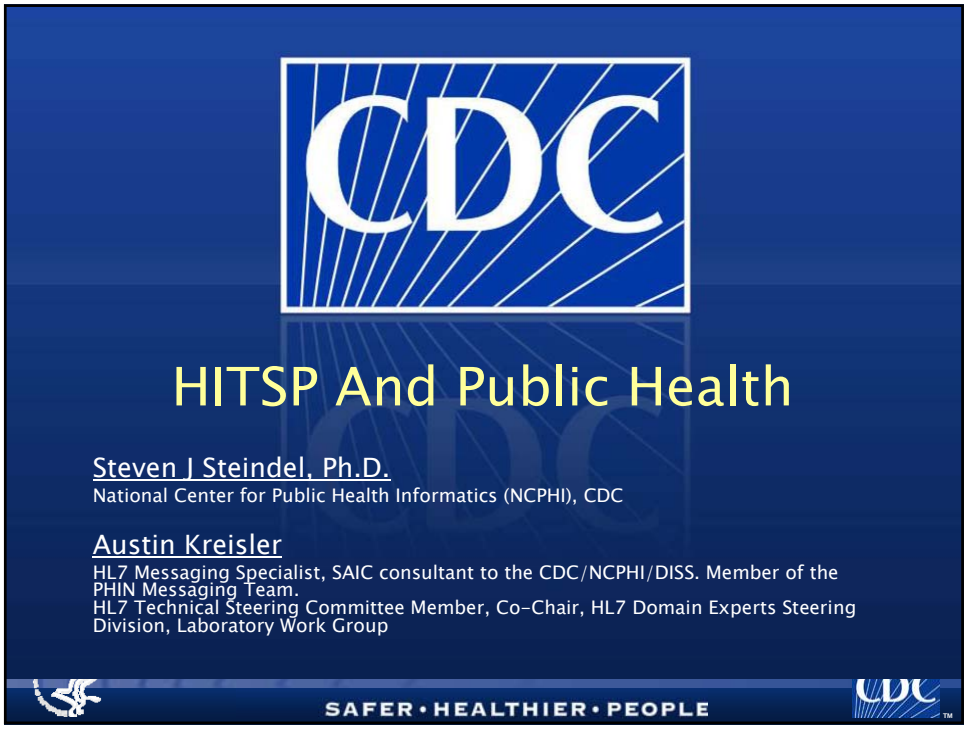
CDC
HITSP And Public Health
Steven J Steindel, Ph.D.
National Center for Public Health Informatics (NCPHI), CDC
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HL7 Messaging Specialist, SAIC consultant to the CDC/NCPHI/DISS. Member of the PHIN Messaging Team.
HL7 Technical Steering Committee Member, Co-Chair, HL7 Domain Experts Steering Division, Laboratory Work Group
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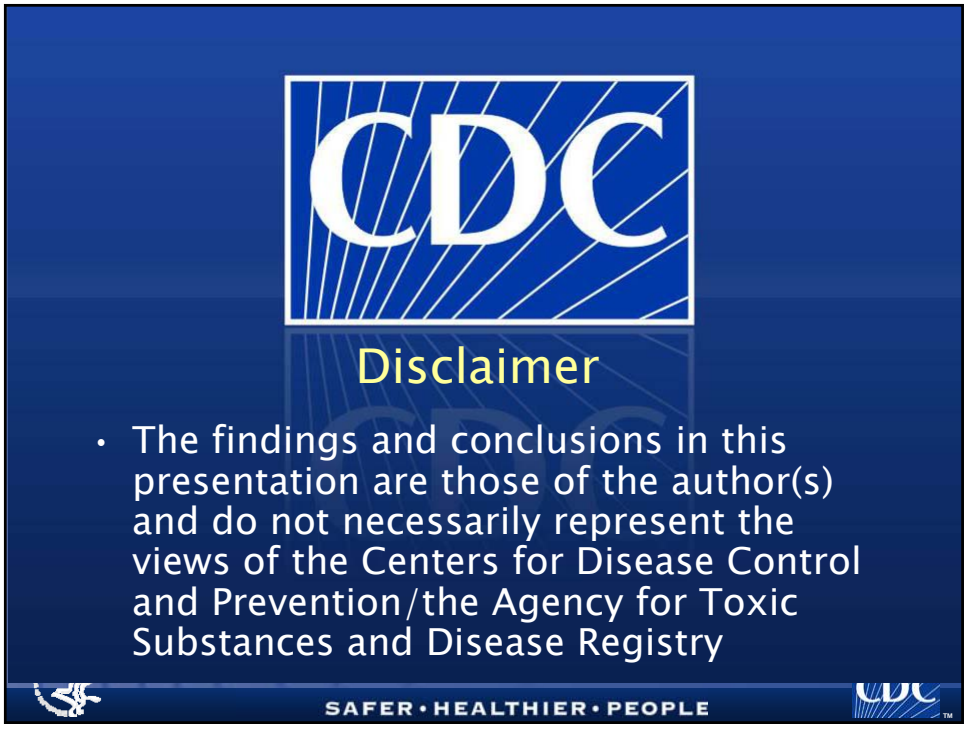
CDC
Disclaimer
• The findings and conclusions in this presentation are those of the author(s) and do not necessarily represent the views of the Centers for Disease Control and Prevention/the Agency for Toxic Substances and Disease Registry
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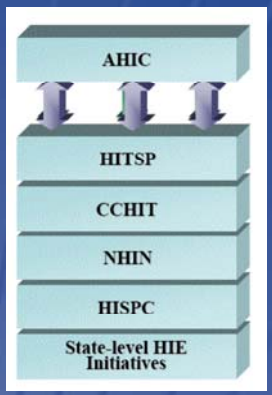
Agenda

- Standards Landscape
- HITSP Artifacts
- HITSP Interoperability Specifications
- HITSP Lab Report to EHR and Public Health Lab Result Message/ELR IG
- New AHIC Use Cases directly relevant to public health

Landscape – AHIC A Public and Private Sector Collaborative

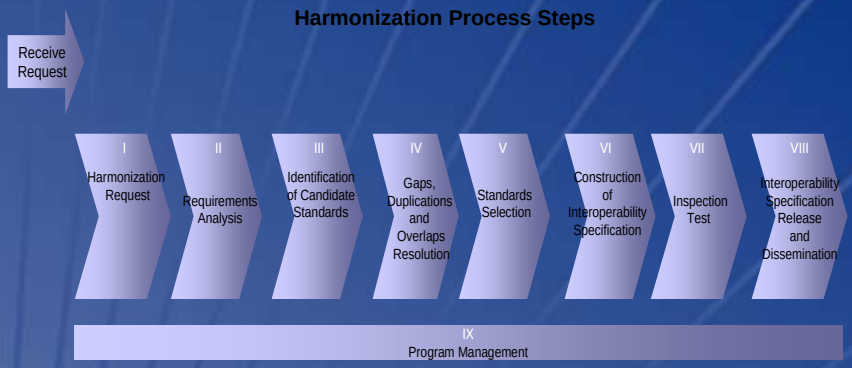
AHIC is the public-private collaborative that sets priorities and oversees and/or endorses HIT Standards, certification, the NHIN, and polices on a national level.



- **AHIC: American Health Information Community**
- **HITSP: Health Information Standards Panel**
- **CCHIT: Certification Commission for Health IT**
- **NHIN: Nationwide Health Information Community**
- **HISPC: Health Information Security and Privacy Collaboration**
- **State-Level HIE Initiatives: State-level Health Information Exchange Initiatives**

For More information: http://www.hhs.gov/healthit/community/background/

Landscape – HITSP



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Landscape – CCHIT Development Process

Gather Data	Develop Criteria	Develop Inspection Process	Pilot Test	Finalize	Launch Certification Program
• Stakeholder priorities • Availability in vendor marketplace • Practicality of certification • Release for public comment	• Criteria for next year – Functionality – Security/ reliability – Interoperability • Roadmap for • Next year + 1 • Next year + 2 • Release for public comment	• Methods – Self-attestation – Juror observation – Laboratory testing • Test scenarios • Step-by-step test scripts • Release for public comment	• Call for participants • Random selection for each market segment • Conduct pilot • Release for public comment – Results – Final criteria – Final test process and scripts – Certification handbook and agreement	• Respond to comments • Final adjustments • Commission review and approve • Publish final materials	

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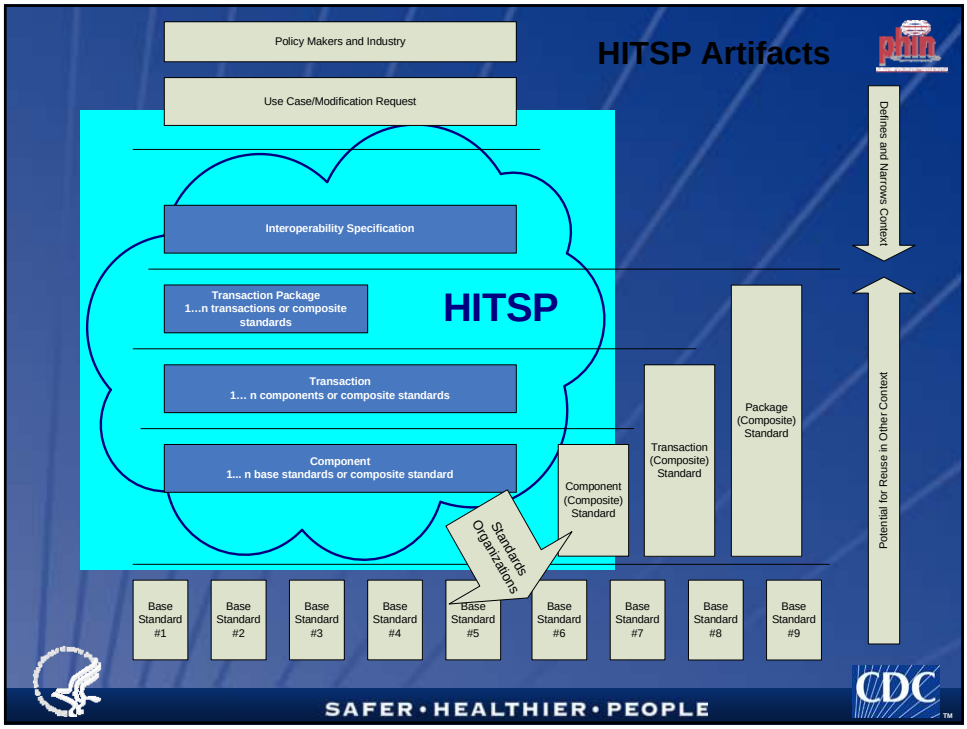

HITSP Interoperability Specifications

- IS01 – Electronic Health Record Laboratory Results Reporting
- IS02 – HITSP Biosurveillance Interoperability Specification
- IS03 – HITSP Consumer Empowerment Interoperability Specification
- IS04 – HITSP Emergency Responder Electronic Health Record Interoperability Specification
- IS05 – HITSP Consumer Empowerment and Access to Clinical Information via Media Interoperability Specification
- IS06 – HITSP Quality Interoperability Specification
- IS07 – HITSP Medication Management Interoperability Specification

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HITSP Lab Report to EHR and Public Health Lab Result Message/ELR IG

- Introduction
- Messaging
- Messages and Segment
- Supplementary Material

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Introduction – Purpose & Scope

- Specification for laboratory results reporting to local, state, territorial and federal public health agencies
- Each state and territory has its own requirements for laboratories to report certain findings to health officials
- This specification covers the exchange of laboratory results from the testing source to appropriate local, state, territorial and federal public health agencies
- Focuses on key points of broad interoperability
- Use of strong identifiers for key information objects
- Use of vocabulary standards

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Messaging

- Messaging Infrastructure
  - Messaging Framework – delimiters, null values, lengths, and snapshot processing
  - Use of Escape Sequences
  - Data Types
- Use Case Model
- Dynamic Interaction Model
- Dynamic Definition – details needed for an HL7 profile
- Interactions

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Message and Segments

- Message structures for:
  - ORU^R01^ORU_R01 (Unsolicited Observation Message)
  - ACK^R01^ACK
- Segment and Field Descriptions
  - MSH, SFT, MSA, ERR, PID, NK1, PV1, PV2, ORC, OBR, OBX, SPM and NTE segments

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Observation Identifiers, Observation Values, Interpretations and Comments

- Provides guidance use of observation identifiers (OBX-3) in conjunction with observation value (OBX-5), interpretations (OBX-8) and comments
- Links the LOINC ® scale property with the data type to be used with OBX-5 value

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Supplementary Material

- Code Systems and Value Sets
- Example ELR Messages
- Appendix A – HL7 Reporting of Culture and Susceptibilities
- Appendix B – Clinical Laboratory Improvements Amendment Considerations

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New AHIC Use Cases Directly Relevant To Public Health

- Two Use Cases
  - Immunizations & Response Management
  - Public Health Case Reporting

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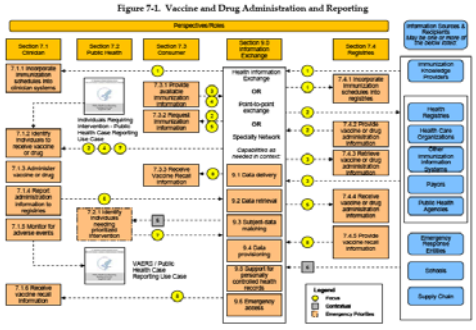
Immunizations & Response Management

Detailed Use Case

March 21, 2008

7.0 Scenario 1: Vaccine and Drug Administration and Reporting

Figure 7-1. Vaccine and Drug Administration and Reporting



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Immunizations & Response Management

- Release I:
  - Artifacts for communication of vaccination information between patients, providers, and immunization registries, including registry-to-registry communication
  - Allow for optionality of architectures supporting traditional legacy message-based communications, addition of support for patient identification services (TP22, T23), and the addition of support for document-centric sharing and point-to-point communications for PHR Interoperability
  - Include security and privacy constraints for implementation of the Immunization and Response Management Interoperability Specifications
- Release II:
  - Identify specification and standard business workflows for supply chain and distribution management of vaccines and develop needed artifacts
  - Incorporation of the vaccine recall processes in the supply chain management.
  - Incorporation of pending constructs supporting Clinical Decision Support

Immunizations & Response Management

New Constructs

- **Component: Identify communication recipients**
- **Transaction Package: Immunization Feed**
  - **Component: Vaccination (VXU/VXR)**
- **Component: Unstructured document (communicate generic information to patient)**
- **Component: Generic alert to identified providers (communicate non-patient specific information)**
- **Transaction Package: Immunization Query & Response**
- **Referencing Public Health Case Reporting constructs (for reporting adverse reaction to Vaccination)**
- **Terminology Services (requirements driven by other use cases)**
- **Deferred**
  - **Clinical Decision Support Content (immunization schedules, reminders)**
  - **Vaccination Documents (including Consumer vaccination view)**
  - **Medication Administration**
  - **Supply Chain management (inventory management, vaccine recall)**

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Immunizations & Response Management

Reuse of Existing Constructs

- **Transaction Package: Immunization Feed Package (PIX/PDQ, TP13)**
- **TP 50 Retrieve Form for Data Capture – for PHCR adverse reaction to immunization**
- **TP 21 Query for Existing Data**
- **TP 13 Manage Sharing of Documents**
- **C48 HITSP Summary Document**
- **C32 HITSP Encounter Document**
- **C25 Anonymize**
- **T24 Pseudonymize**
- **T23 Patient Demographics Query**
- **T29 Notification of Document Availability**
- **T22 Patient ID Cross-Referencing**
- **T16 Consistent Time**
- **T17 Secured Communication Channel**
- **C26 Nonrepudiation of Origin**
- **C19 Entity Identity Assertion**
- **T15 Collect and Communicate Security Audit Trail**
- **TP30 Manage Consent Directives**
- **TP20 Access Control**
- **T31 Document Reliable Interchange**
- **T33 HITSP Transfer of Documents on Media Transaction**

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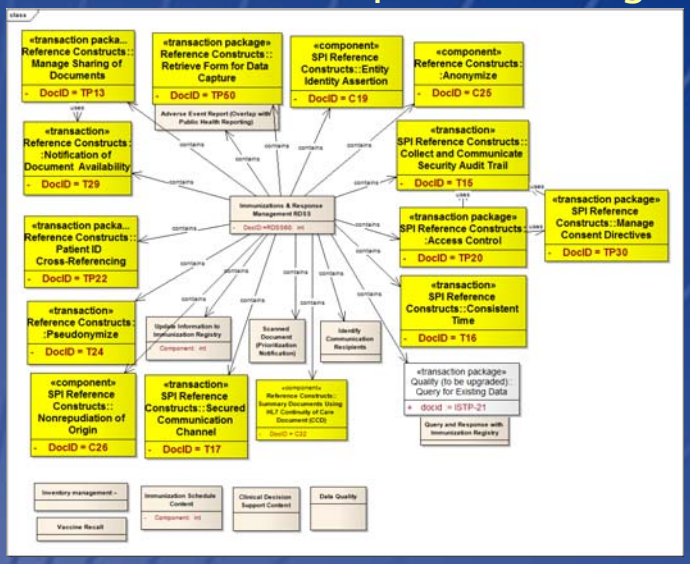
Immunizations & Response Management



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Office of the National Coordinator for Health Information Technology

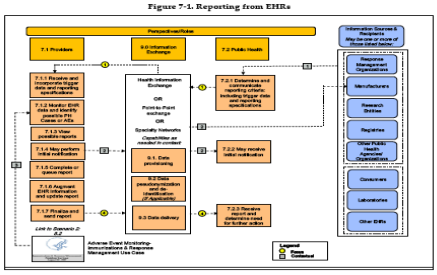
Public Health Case Reporting

Detailed Use Case

March 21, 2008

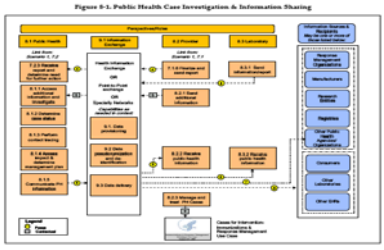
7.0 Scenario 1: Reporting from EHRs

Figure 7-1. Reporting from EHRs



8.0 Scenario 2: Public Health Case Investigation & Information Sharing

Figure 8-1. Public Health Case Investigation & Information Sharing



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Public Health Case Reporting Use Case

- *Public Health Case Reporting*
  - *Content Standardization in Progress*
  - *Ongoing Content Source: Council of State and Territorial Epidemiologists (CSTE)*
- *Adverse Event Reporting*
  - *Content Standardization in Progress*
  - *Ongoing Content Sources:*
    - *Adverse Drug Events – FDA*
    - *Patient Safety – TBD*
      - *AHRQ Patient Safety Data Set Public Comment 9 Aug 2008*
      - *CDC Healthcare Associated Infection definitions / reporting*
      - *Patient Safety Organization (PSO) instantiation*

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Report from the Population Perspective Technical Committee – Public Health Case Reporting Use Case

- *2008 – Trial Implementation Testing, Publication of Roadmap*
  - *TP50 – Retrieve Form for Data Capture*
    - *No determination regarding content structure within RFD*
    - *Content can be mapped to HL7 message – CDA, C32, C48, message or other*
  - *One construct for trial content component consideration*
    - *HL7 Healthcare Associated Infection (HAI) report*
  - *Alerts: Reuse from IRM: Generic Alert to Identified Providers and Unstructured Document Components*
- *2009 – Release 1*
  - *Content Standardization in Progress*
  - *Reporting Criteria Content – Common / basic (Structured content)*
  - *Refined Transport*

Public Health Case Reporting Use Case

- *2010 – Release 2*
  - *FDA MedWatch, Vaccine Adverse Event Reporting System (VAERS) – Pending successful ballot of Individual Case Safety Report (ICSR)v3 through HL7, ISO, CEN – Expected Dec 2009*
  - *AHRQ Sentinel Event / Adverse Reaction Reporting*
  - *Public Health Case Reporting*
  - *Structured Reporting Criteria Content – Case-specific*
  - *Structured Communications from Public Health*
  - *Clinical Decision Support content, triggers*

PH Case Reporting

- New Constructs (Introduction timing not indicated)
  - Case Reporting Terminology Component
  - Standard Case Report Construct Adverse Event Reports: (CDC-HAI, AHRQ, FDA, PH Cases)
  - Reporting Criteria Content: Basic and Case-specific
  - Clinical Decision Support Content (Trigger Events: PH, AE, AHRQ)
  - Identify Communication Recipients
  - Generic Alert to Identified Providers
  - Unstructured Document Components

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PH Case Reporting

Reuse of Existing Constructs

- **TP 50: Retrieve Form for Data Capture**
- **TP21: Query for Existing Data**
- **TP13: Mange Sharing of Documents**
- **C48: HITSP History Summary Using HL7 CCD**
- **C32: HITSP Encounter Documents Using IHE Medical Summary (XDS-MS) Component)**
- **C25: Anonymize**
- **C35: HITSP Lab Report Technology Component Version**
- **C36: HITSP Lab Result Message Component**
- **C37: HITSP Lab Report Document Component**
- **T24: Pseudonymize**
- **T23: Patient Demographic Query**
- **T29: Notification of Document Availability**
- **T22: Patient ID Cross-Referencing**
- **T16: Consistent Time**
- **T17: Secured Communication Channel**
- **C26: Notification of Origin**
- **C19: Entity Identity Assertion**
- **T15: Collect and Communicate Security Audit Trail**
- **TP30: Manage Consent Directives**
- **TP20: Access Control**
- **TP31: Document Reliable Interchange**
- **TP33: HITSP Transfer of Documents on Media Transaction**

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