BUILDING INTEROPERABILITY
STANDARDS FOR VITAL RECORDS

Public Health Data Standards Consortium
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Michelle Williamson, MSIS, RN, CPHIT
Senior Health Informatics Scientist
Centers for Disease Control and Prevention
National Center for Health Statistics
Topics

• CDC/NCHS eVitals Standards Initiatives
• Describe Status of VR Standards
• VR Standards Pilot Implementations
• Future plans for VR Standards Activities
CDC/NCHS eVitals Standards Initiatives

- **GOAL**: To develop national standards to facilitate the national exchange of birth, death and fetal death records between electronic health record systems and state/jurisdictional vital statistics systems.

- Collaborating with the National Association for Public Health Statistics and Information Systems (NAPHSIS) and individual states/jurisdictions to support standards development activities.
Why the eVitals Standards Initiative?

- Significant number of data items for Vital Registration are captured in medical records
- Medical Records have been identified as the preferred source to obtain medical and health data

**Prenatal Care**
- Visit Information
- Past pregnancies

**Risk Factors**
- Medical Conditions (DM, HTN)
- Infertility Treatment
- Previous C-Section

**Labor & Delivery**
- Onset of Labor
- Method of Delivery
- Maternal Morbidity

**Newborn**
- Birth weight
- Abnormal Conditions
- Congenital Anomalies
Standards to Support Capturing VR Data at the Point of Care or Contact
NCHS Focus on eVitals Standards Development Activities To Date

- Health Level Seven International (HL7) Vital Records Domain Analysis Model
- HL7 Electronic Health Record-System (EHR-S) Vital Records Functional Profile (VRFP)
- HL7 EHR-S Public Health Functional Profile (PHFP)
- HL7 V2.5.1 Implementation Guide: Reporting Death Information from the EHR to Vital Records, Release 1 (R1) Draft Standard for Trial Use (DSTU)
- HL7 V2.5.1 Implementation Guide: Reporting Birth and Fetal Death Information from the EHR to Vital Records, R1 DSTU
- HL7 Clinical Document Architecture (CDA) R2: Reporting Death Info from the EHR to Vital Records, R1 DSTU
- HL7 CDA R2: Reporting Birth and Fetal Death Info from the EHR to Vital Records, R1 DSTU
- Integrating the Healthcare Enterprise (IHE) Maternal Child Health – Birth and Fetal Death Reporting (MCH-BFDR) Content Profile
HL7 Vital Records Domain Analysis Model (VR DAM)

• Identifies and describes the activities (Activity Models) and data required (Core Data Models) for processing birth, death and fetal death records in compliance with the U.S. Standard Certificates of Birth and Death, and the U.S. Standard Report of Fetal Death

• Widely recognized format - Unified Modeling Language (UML)

• Published as an HL7 Informative Standard - April 2011

• May serve as a resource to guide future design and implementation efforts for VR standards
Birth Registration Activities Model
Birth Core Data Model
HL7 EHR-S VR Functional Profile

- Based on the HL7 EHR-S Functional Model that specifies a superset of functions for an EHR system from which a user/setting specific subset can be generated
- Specifies the functional requirements that will facilitate the point-of-contact or point-of-care capture of selected U.S. vital records data via EHR systems that could be utilized to populate jurisdictional vital record systems
- Served as the foundation for the HL7 EHR-S Public Health Functional Profile (PHFP)
Availability of VR DAM and VRFP

Information is available at: https://www.hl7.org/store/viewitem.cfm?item=DAMFP
HL7 V2.5.1 VR Standards

- V2.5.1 – HL7 Messaging Standards

  - HL7 V2.5.1 Implementation Guide: Reporting Death Information from the EHR to Vital Records, Release 1 (R1) Draft Standard for Trial Use (DSTU)

  - HL7 V2.5.1 Implementation Guide: Reporting Birth and Fetal Death Information from the EHR to Vital Records, R1 DSTU
    - In ballot reconciliation process
    - Plan to publish end of 2012/early 2013
HL7 VR Clinical Document Architecture (CDA) Standards

- HL7 Document Standards
  - HL7 (CDA) R2: Reporting Death Info from the EHR to Vital Records, R1 DSTU
    - Plan to publish end of 2012/early 2013
  - HL7 CDA R2: Reporting Birth and Fetal Death Info from the EHR to Vital Records, R1 DSTU
    - In ballot reconciliation process
    - Plan to publish end of 2012/early 2013
HL7 VR V2.5.1 and CDA IGs

• These HL7 VR Implementation Guides (IG) are an initial effort to provide guidance and the messaging/document infrastructure for transmitting birth, fetal death and death related information from a clinical setting to a vital records electronic registration system.

• The focus of the data exchange for the birth certificate and fetal death report is on the clinical content captured by the healthcare facility.
Integrating the Healthcare Enterprise (IHE) Maternal Child Health (MCH) Profile

• In 2010, CDC/NCHS provided input on the Healthcare Information Technology Standards Panel (HITSP) Maternal and Child Health Interoperability Specification (IS) 91 to:
  • Ensure consistency with the 2003 U.S. Certificate of Live Birth and the Report of Fetal Death

• Developed the HITSP Vital Records Prepopulate Component (Provisional) C170 to specify data sets that may be pre-populated from an EHR to assist with providing vital records information to State and Federal agencies

• IHE Quality, Research, and Public Health (QRPH) Technical Committee had developed a MCH profile to describe the data content to be used in automating the data captured in an EHR that may be used for vital records such as for the birth certificate
  • Developed through input from France
  • Modeled using the 2003 U.S. Standard Birth Certificate and France - Child Growth Summary

• As recommended by HITSP, we collaborated with IHE to align the HITSP C170
IHE Birth and Fetal Death Reporting (BFDR)

- Describes the pre-population rules that must be used to derive the data elements to populate the Facility Worksheets for the US Certificate of Live Birth and the US Report of Fetal Death based on the national standard

- Served as one of the IHE Technical Supplements for trial implementation – IHE North American (NA) Connectathon in 2011 and 2012 with plans for testing in 2013

- Connectathon interoperability testing included EHR and VR system vendors, other systems vendors and VR state partners
In late 2012, CDC/NCHS provided funding support for:

- **Minnesota (MN) Department of Health – Vital Records**: to develop and implement an electronic linkage between their electronic birth registration system and electronic medical records using the draft HL7 CDA Birth and Fetal Death Reporting Implementation Guide (IG)
  - MN will participate in the IHE Connectathon to determine the feasibility of implementing the IHE Birth and Fetal Death Reporting Content Profile with their state partners (providers)

- **Utah Department of Health – Vital Records**: to develop and implement an electronic linkage between their electronic death registration system and electronic medical records using the draft HL7 V2.5.1 Death Reporting IG
  - Additionally, UT will participate in interoperability testing in the IHE 2013 Connectathon to lay the foundation for future potential implementation activities using the VR standards
Barriers to eVitals Standards Development and Implementation

- States/Jurisdictions legally responsible for the registration of vital events concerned about the accuracy and quality of data received via EHRs
- Funding to support states/jurisdictions adoption of eVitals Standards
- EHR Vendors Adoption of eVitals Standards and Incorporation in their Product Development
- VR System Vendors Readiness to Receive VR data using National Standard Formats
Future plans for VR Standards Activities

• Continue to engage in discussions/testimony/public comments to include VR in Meaningful Use criteria

• Develop an IHE Death Content Profile to described prepopulation criteria for selecting data from EHRs that may be utilized for the death certificate

• Refine HL7 DSTUs and IHE Content Profiles based on pilot testing

• Support more pilot testing with states/jurisdictions pending funding availability

• Planning collaborative activities with the PHDSC to reach out to the certification bodies to explore the potential for developing VR certification criteria based on the HL7 EHR-S VR Functional Profile
Discussion/Questions