Developing Vital Records Standards for Electronic Health Record Systems

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Background

The National Vital Statistics System (NVSS) provides essential data on U.S. births and deaths.

- Over six million vital events are reported annually.
- The information collected includes a wide range of demographic, medical, and geographic data derived from over 4 million birth certificates and from about 2.4 million death certificates and fetal death reports.
- These events are registered by 57 registration areas: 50 states, 2 cities, and 5 U.S. territories.
- Detailed data on all events are transmitted to the Center for Disease Control and Prevention's (CDC) National Center for Health Statistics (NCHS) for processing and dissemination.

Much of the information collected for birth and death certificates and fetal death reports are captured in hospital medical records. The vital statistics and standards communities have collaborated to build upon more than a century's effort in standardization to encourage Electronic Health Record Systems (EHRs) to capture medical and health information in a format consistent with the vital statistics requirements.

The goal is to improve the timeliness, accuracy, and completeness of vital records (VR) data. The benefits of this approach have yet to be demonstrated. That is . . .

- Will the quality and timeliness of vital records data improve?
- Will the data collection become more or less standardized?
- Will it lead to a reduction in the redundancy of data entry and lower costs for both hospitals and states?

While research continues, the vital records community recognizes the potential of integration of EHRs with electronic vital records systems, and has collaborated to lay a solid foundation for standardized transmission of certain vital records information from EHRs to electronic vital records systems.

Vital Records References

- U.S. Standard Certificate of Live Birth—2003 revision
- U.S. Standard Certificate of Death—2003 revision
- U.S. Standard Report of Fetal Death—2003 revision
- Birth Edit Specifications for the 2003 Revision of the U.S. Standard Certificate of Birth
- Death Edit Specifications for the 2003 Revision of the U.S. Standard Certificate of Death
- Fetal Death Edit Specifications for the 2003 Revision of the U.S. Standard Report of Fetal Death
- Facility Worksheet for the Live Birth Certificate
- Guide to Completing the Facility Worksheets for the Certificate of Live Birth and Report of Fetal Death—2003 revision
- Model State Vital Statistics Act and Regulations, 1992 revision

Method

The following organizations have collaborated with other vital records stakeholders to develop vital records standards:

- NCHS' Division of Vital Statistics: Responsible for the NVSS, which requires contributions from many organizations and individuals responsible for responding to vital events occurring in the United States
- National Association for Public Health Statistics and Information Systems: A national association of state vital records and public health statistics offices
- Health Level Seven International (HL7): One of several American National Standards Institute accredited standards development organizations operating in the health care arena to produce clinical and administrative data standards for the health care domain
- Integrating the Healthcare Enterprise (IHE): A standards organization that promotes the coordinated use of established standards such as DICOM (Digital Imaging and Communications in Medicine) and HL7 to address specific clinical needs in support of optimal patient care

Capturing birth and death data in electronic health record systems

Electronic exchange using HL7 and IHE-based standards

Improving the timeliness, accuracy, and completeness of vital records data

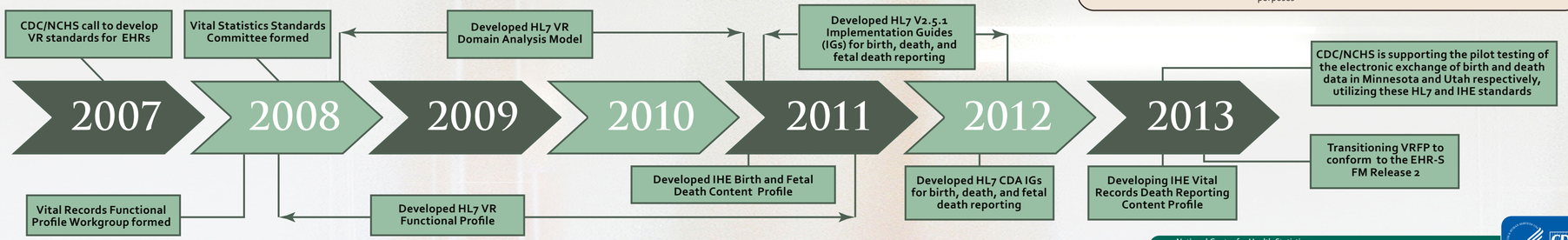
Objective

To determine if vital records requirements for the collection and transmission of data for birth and death certificates, and fetal death reports can be represented in national standards for EHRs.

Results

The following vital records standards have been developed or are in the process of being developed to support data exchange and interoperability of vital records information:

Document	Transaction	Status
HL7 Version 3 Domain Analysis Model: Vital Records, Release 1 (R1)	Domain Analysis Model	Published and freely available during pilot period that began February 2012
HL7 EHR-System Functional Model (EHR-S FM) Vital Records Functional Profile (VRFP), R1	EHR-S Functional Profile	Published and freely available during pilot period that began February 2012
HL7 EHR-S FM Vital Records Functional Profile, R2	EHR-S Functional Profile	Under development; goal to publish by early 2014
HL7 Version 2.5.1 Implementation Guide (IG): Vital Records Death Reporting,R1–Draft Standard for Trial Use (DSTU)	Death-related information from a clinical setting to the vital records electronic registration system	Available for download and comments on the HL7 DSTU Commenting Site
HL7 Version 3 Clinical Document Architecture (CDA) R2 IG: Reporting Death Information from the EHR to Vital Records, R1–DSTU	Death-related information from a clinical setting to the vital records electronic registration system	Balloted in HL7 May 2012 ballot cycle; pending publication
HL7 Version 2.5.1 IG: Reporting Birth and Fetal Death Information from the EHR to Vital Records, R1–DSTU	Live birth and fetal death-related information from a clinical setting to the vital records electronic registration system	Balloted in HL7 January 2012 ballot cycle; pending publication
HL7 Version 3 CDA R2 IG: Reporting Birth and Fetal Death Information from the EHR to Vital Records, R1–DSTU	Live birth and fetal death-related information from a clinical setting to the vital records electronic registration system	Balloted in HL7 September 2012 ballot cycle; pending publication
Integrating the Healthcare Enterprise (IHE) Birth and Fetal Death Reporting (BFDR) Content Profile	Defines the EHR content that may be used to pre-populate and transmit birth and fetal death information to vital records systems for vital registration purposes	IHE published for trial implementation August 2012
Integrating the Healthcare Enterprise Vital Records Death Reporting (VRDR) Content Profile	Defines the EHR content that may be used to pre-populate and transmit death information to vital records systems for vital registration purposes	Under development; goal to publish by Fall 2013



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Division of Vital Statistics