

Reader's Guide

HL7 Version 2.5.1 Implementation Guide: Reporting Birth & Fetal Death Information from the EHR to Vital Records, R1

HL7 Draft Standard for
Trial Use
October 2013

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Table of Contents

1. Introduction	3
2. Purpose.....	5
3. Audience	5
4. Scope	5
5. Ballot Feedback.....	5

1.Introduction

The National Vital Statistics System (NVSS) has a long and enduring history that serves to provide essential data on births, deaths, and fetal deaths within the United States (U.S.) and is the oldest and most successful example of intergovernmental data sharing in Public Health¹. Over 6 million vital event records annually, including statistical information (demographic, medical/health, and geographic) are derived from over four million birth certificates and from about 2.4 million death certificates and fetal death reports. These events are registered by fifty-seven registration areas: 50 states, two cities (New York and Washington DC), and 5 U.S. territories (American Samoa, Guam, Confederation of Northern Mariana Islands, Puerto Rico, and the U.S. Virgin Islands). Detailed data on all events are transmitted to the Centers for Disease Control and Prevention/National Center for Health Statistics (CDC/NCHS) for processing and dissemination.

Similar to other areas within healthcare, vital registration systems have not kept pace with e-commerce or other industries in developing interoperable data systems to support quality and timely data capture and transmission. The current registration system has supported the proliferation of silo solutions that have fostered redundancy in data entry and standards not recognized widely. This may result in slow transmission of birth and death certificate data to the federal government which can significantly impact data timeliness and usefulness which is essential for driving key health and healthcare related policy decisions. It may also influence programmatic and policy decisions for state agencies.²

A significant number of data items on birth and death certificates are captured in medical records. Currently, the capturing of these items at the facility or provider level for entry into state electronic systems are occurring through manual processes and stand-alone systems that foster duplicative data entry and a lack of standards to support interoperable data exchange. This process can be labor-intensive and lead to errors, adversely affecting the quality of the health and medical information captured on birth and death certificates and increasing hospital labor costs.

Current birth and death registration processes in the U.S. are characterized by:

- Progressively constrained schedules for reporting to federal agencies;
- Higher expectations of data quality and timeliness by stakeholders and the public;
- Separate, costly reengineering projects in various jurisdictions;
- Limited integration among internal vital records systems and with other stakeholder systems;
- A need for a standards-based, uniform, and systematic approach to collecting and exchanging data from vital records.

¹ Centers for Disease Control and Prevention/National Center for Health Statistics/National Vital Statistics System. About the National Vital Statistics System. Retrieved November 16, 2010 from <http://www.cdc.gov/nchs/nvss.htm>.

² Health Level Seven International (HL7). Vital Records Domain Analysis Model. Section 1: Project Overview.

The CDC/NCHS is providing support for the development of vital records standards to enable interoperable electronic data exchanges among electronic health record systems, U.S. vital records systems and potentially other public information systems for birth, death and fetal death events. The NCHS/Division of Vital Statistics (DVS) has initiated several projects that can serve as the foundation for standardizing electronic transmission of vital record events. These initiatives are carried out in conjunction with the Classifications and Public Health Data Standards Staff (CPHDSS) that represents the National Center for Health Statistics at Health Level Seven International (HL7) and Integrating the Healthcare Enterprise (IHE). NCHS has also collaborated on these activities with the National Association for Public Health Statistics and Information Systems (NAPHSIS), state representatives and other vital records stakeholders.

The NCHS and NAPHSIS have long collaborated to promote uniformity and consistency in vital records data collection. NCHS, NAPHSIS and interested state vital records representatives partnered to develop an HL7 Vital Records Domain Analysis Model (VR DAM). The VR DAM identifies and describes the activities and data required 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. The model shows vital records stakeholders who are involved in exchanging data within the context of each activity. The model also includes descriptions of each of the data elements required for vital registration as defined by the national standard. The VR DAM will serve as a framework to guide future design and implementation efforts to standardize electronic vital records exchange. The VR DAM was referenced during the development of the HL7 V2.5.1 Implementation Guide (IG): Reporting Death Information from the EHR to Vital Records for reporting death information from an EHR to Vital Records.

NCHS, working with NAPHSIS and other vital records stakeholders, developed an HL7 Electronic Health Record System (EHR-S) Vital Records Functional Profile (VRFP). The VRFP was derived from the HL7 EHR-S Functional Model (FM), which provides a reference list of functions that may be present in an electronic health record system. Functional profiles are a subset of the EHR-S FM that provide a standardized description and common understanding of the functions that are needed or required for a specific care setting or subject area. The VRFP profile defines the functional requirements needed to capture vital records data at the point of contact or care with a patient and supports messaging between EHR systems and states, local registrars, and federal agencies. The VRFP is intended to ultimately serve as the reference for the certification of EHR systems that include functionality to support vital records requirements. The VRFP was approved by HL7 in May 2011 and will be published in early 2012.

In January 2011, CDC/NCHS formed a team of vital records stakeholders to collaborate on identifying the required vital records data exchanges and the potential for developing technical messaging and document requirements to support vital registration. The first project supported by this team was to develop an HL7 V2.5.1 Implementation Guide: Reporting Death Information from the EHR to Vital Records, R1 as a draft standard for trial use (DSTU). A project scope statement for the development of the IG was approved by the HL7 Public Health and Emergency Response Work Group (WG) and the Orders and Observations WG. This document represents an initial effort to provide an Implementation Guide for transmitting death related information from a clinical setting to the vital records electronic registration system. The use case describes the transmission of the data collected by an ADT^A08 message. In September 2011, a new project

scope statement was submitted and approved by the PHER WG for the development of this HL7 V2.5.1 IG: Reporting Birth and Fetal Death Information from the EHR to Vital Records, R1 (DSTU).

2. Purpose

The Implementation Guide (IG) is an initial effort to provide guidance and messaging infrastructure for transmitting medical/health information on live births and fetal deaths from a birthing facility setting to a jurisdictional vital records electronic registration system. The use case describes the transmission of the data using trigger events and abstract messages to record the creation, revision, or retraction of live birth or fetal death reports.

3. Audience

This guide is designed for use by analysts and developers who require guidance on optional and ambiguous elements of the *HL7 Version 2.5.1 Patient Administration (Chapter 3) Information* relative to its specialized use for providing live birth and fetal death related information. Users of this guide must be familiar with the details of HL7 message construction and processing. This guide is not intended to be a tutorial on that subject.

4. Scope

This specification covers the transmission of medical/health information for live birth and fetal death reporting to the applicable jurisdictional Vital Records Office.

5. Publication Feedback

We are seeking your review and feedback on this initial effort to provide a standardized format for capturing clinical information on birth and fetal death events from an electronic health record system to send to a vital records electronic registration system. We consider this as an additional step towards the development of a series of standards to support the needs of vital registration for birth, death and fetal death reporting. Based on future funding availability, CDC/NCHS is planning to pilot test in several jurisdictions interoperability between EHR and Vital Record systems based on these developing draft standards for trial use. Your feedback will help to guide this effort.