Public Health Data Standards Consortium

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To: HL7 Special Interest Group on Electronic Health Record
From: Participants of the PHDSC Ad Hoc Task Force on Electronic Health Record –
         Public Health
Subject: Evaluation of the HL7 EHR Functional Model: Public Health Perspectives

Evaluation of the HL7 EHR Functional Model: Public Health Perspectives
Response from Participants

The HL7 and its Electronic Health Record Special Interest Group (SIG) is leading a national effort towards establishing functional standards for an electronic health record (EHR). The Department of Health and Human Services has stated that the health care system would substantially benefit "if HL7 were able to identify and define the core EHR functions in an international ballot and achieve a successful voting outcome in March 2004."[1]

The *Public Health Data Standards Consortium* (PHDSC or Consortium) - a non-profit voluntary confederation of federal, state and local health agencies; national and local professional associations; public and private sector organizations, and individuals - recognized the need to bring a common voice from the public health community to the national efforts of standardization of health and healthcare information.

In response to the HL7 EHR SIG's activities, on December 2, 2003 the Consortium launched an initiative to evaluate the HL7 EHR Functional Model from the public health perspectives - the PHDSC Ad Hoc Task Force on the Electronic Health Record – Public Health (EHR-PH). The goal of this voluntary initiative is to bring the participation of state and local public health agencies, public health research community and other stakeholders into the on-going efforts for developing the HL7 functional model for the EHR. During December 2, 2003 – March 8, 2004, sixty four volunteers from a diverse range of clinical health care, public health, research community, public and private sector have joined the Task Force to review the model from public health user perspectives to understand if the model supports core public health functions and data reporting to the public health agencies, and provides data for public health practice and research.

Work Processes and Challenges

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[1] DHHS' Position Letter with regard to HL7 EHR SIG deliverables and the upcoming ballot. January 7, 2004.

Work Processes. Based on the suggestion from the HL7 EHR SIG, the PHDSC Ad Hoc EHR-PH Task Force activities have been conducted by two working groups: Developers and Validators. The first group (Developers) designed the work process and response documents and the second group (Validators) reviewed the documents. The Developers group worked from December 15, 2003 through February 20, 2004 and the Validators group from February 10 through March 5, 2004.

On December 2, 2004, the Call for Participation in the PHDSC Ad Hoc EHR-PH Task Force was disseminated among (1) about 100 participants of the PHDSC session on the Future of Public Health Vocabulary and Public Health Data Standards held at the American Medical Informatics Association (AMIA) Annual Symposium in November 2003, and (2) via the PHDSC main listserv (about 300 subscribers). Responders identified their interest in joining the Task Force via e-mail, and indicated the group which they were interested in working with. Recruitment for the Developer group (27 persons) was closed on January 4, 2004. Recruitment for the Validator Group (28 persons) continued through February 5, 2004. Please see Attachment 1 of the White Paper for the list of participants.

Group activities have been conducted via conference calls and e-mail. The first conference call for both groups was held on December 15, 2004 during which HL7 EHR SIG representative (Dr. Don Mon, AHIMA) provided an overview of the history of the model development and its format. Developers had two other conference calls (January 5 and January 16, 2004) where the scope of the group activities and the format of the response documents to the HL7 were discussed and agreed on. Validators started their work via a conference call on February 10, 2004 followed by the 2nd call on February 26, 2004. The first version of the response document -White Paper - was developed by volunteers from Developer group. The document went through four revisions (three by the Developer group and one by the Validator group). All e-mail responses from participants have been reviewed for inclusion in the documents and stored in the Task Force files by name of the responder.

Challenges. The challenges of the PHDSC Ad Hoc Task Force on EHR-PH are the following:
  A. The voluntary nature of the effort.
  B. Aggressive timeline dictated by the timeline of the HL7 EHR model development process.
  C. Delays in receiving versions of the EHR model for review.
  D. Lack of guidelines from the HL7 EHR SIG on the methods for evaluating the EHR functional model and a format for Task Force participants to respond.
  E. The organizational structure of the HL7 EHR functional model. It is organized as a detailed 42-page table of function descriptions without introductory explanation of the scope of the model and its hierarchy. In this format it is difficult to grasp the model purpose and content.

The review of the HL7 EHR functional model has been conducted using the version dated December 23, 2003.

Outcomes

The members of the PHDSC EHR-PH Task Force believe that the EHR is critical to the improvement of coordination between clinical care and public health care systems and recognize its impact on public health data generation and reporting processes.

From the Task Force activities became evident that there is a need for better understanding of public health informatics perspectives among various stakeholders. This includes understanding of (1) public health organization (domain/programs and hierarchical fragmentations) and its stakeholders, (2) commonalities among public health domains/programs and public health settings in terms of data sources, users, public health goals and functions, (3) role of the EHR in integrating primary care and public health practices, and (4) involvement of various public health stakeholders in the national effort of standardization of health care data via EHR. Our first task was to build a consensus among the participants in the Developer group on issues (1) through (4), mentioned above, prior to conducting the review of the HL7 EHR functional model.

In this attempt we developed a White Paper entitled "Electronic Health Record: Public Health Perspectives" (attached). This document represents views of the PHDSC EHR-PH Task Force participants. The participants believe that the White paper can be used as an educational tool *(1) to communicate to the public health community a need for broader involvement in the national effort to standardize clinical and public health data and systems and (2) to describe public health perspectives on the EHR.*

Attachment 5 of the White Paper represents an attempt to cross-map the HL7 EHR functions to the core public health functions and interventions. It demonstrates that at this high level of abstraction, the core public health functions (assessment, policy and assurance) are well represented in the HL7 EHR functional model. However, more granular level of this cross-mapping is needed to assure the ability of the model to support public health work and data flows, *e.g.*, using Use Cases that reflect public health practices. The White Paper includes the list of Use Cases proposed for further more granular cross-mapping of the HL7 EHR functions to the storyboards of the Use Cases (Attachment 7) and three examples of the cross-mapping use case: immunization, hypertension and diabetes (Attachments 8A, B & C). This approach can further lead to designing and implementing the Use Case(s) demonstration projects on EHR application in public health.

The PHDSC EHR-PH Task Force activities formed a collaborative partnership of various stakeholders in the data standards development and implementation processes critical for public health. This is the first attempt to bring broader participation of the public health governmental and research communities, and the public and private sectors interested in public health into the development and validation of the EHR functional model processes. The participants view this initiative as a key endeavor in engaging the public health community in the national standards development and HIT implementation processes.

The response to participate in our Task Force strongly demonstrates the interest and commitment from the public health community to be a part of the EHR standardization process. Participants believe that the PHDSC Ad Hoc Task Force on EHR-PH can evolve into ongoing public health participation in the national EHR standardization efforts.

We would like to thank HL7 EHR SIG for the opportunity to be a part of this critical endeavor. We specifically would like to thank Dr. Donald Mon, Vice-President of Practice Leadership, AHIMA, for helping to launch this initiative, presenting a model overview to participants and being a liaison between the Task Force and HL7 EHR SIG. We are looking forward to continue working with HL7 EHR SIG on refining the EHR functional model and building together integrated clinical care and public health systems.

Co-Chairs of the PHDSC Ad Hoc Task Force on EHR-PH

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Enclosure: PHDSC. White Paper. Electronic Health Record: Public Health Perspectives, March 9, 2004.