

REQUEST FOR INFORMATION

Contract Name: Develop Phase II EHR Query-Response Message Set

Introduction:

The NLM EHR steering committee is asking interested parties to submit comments on the best way to break this contract up into 2-3 smaller parts each of which would extend the previous part but produce complete deliverables on it's own.

We are looking, where possible, to incorporate existing work as a recommended best practice into our working demo and implementation guide, rather than fund extensive new work. The goal is to make rapid progress, limit risk to the project and sub-contractors and reuse and build on existing development.

Possible ideas include:

- First implement medications, labs and active problem list.
- Consider frameworks other than CDA release II.
- Incorporate examples of use of services (e.g., terminology, patient identification) into message set.
- Expand the phase I query/response message set to be more complete as to the kinds of patient data that can be requested and delivered.
- Expand phase I query response message set as necessary to deal with indexed information/documents.
- Separately identify issues beyond the raw data transactions that need to be addressed for implementation (e.g., patient ID, document ID, ensuring data integrity, ensuring system security, documenting origin of info, etc.).

The comment period will be three weeks, after which we hope to formulate and post the next EHR Query-Response Message Set RFQ.

What follows is the current draft language that includes the overall phase II goals and task list.

Please send comments to NLMRFP@HL7.org or contact any member of the NLM EHR Steering committee.

REQUEST FOR INFORMATION

Contract Name: Develop Phase II EHR Query-Response Message Set

Summary

Phase I of the NLM Electronic Health Record Information Exchange project involved adopting an existing set of HL7 message definitions to allow disparate EHR systems to exchange patient data and implementing a working prototype to send and receive such messages. Phase II will expand this concept using the model-based HL7 Development Framework (HDF) to insure that the information exchanged enables as much semantic interoperability as possible. Key to the success of Phase II is designing a message set that can carry full semantic information of as much clinical information as possible and producing an implementation guide and tool set complete enough to enable reliable implementation by a broad range of vendors.

This project involves communications between two EHR systems:

1. System A sends a request to System B for a specified subset of EHR information on a given patient (may be all). The initial three query/response messages from Phase I can be used and refined as appropriate.
2. System B responds by translating as much of the requested information as possible to a standard information model, formatting per the EHR information exchange standard produced under this contract, and sending the message(s) to System A. Information can include complete documents and/or atomic data elements. System A now has all the information available for semantic interoperability and can fully integrate the new data into its EHR, although it has the option of using a human readable form if the more structured and coded form cannot be fully utilized.

Task Description

1. Identify those issues beyond the raw data transactions that need to be addressed for implementation (e.g., patient ID, document ID, ensuring data integrity, ensuring system security, documenting origin of info, etc.).¹
2. Explore the query-response capabilities of existing HL7 messages compared to the Phase I message set and interact with the chairs of the appropriate TCs to determine modifications to allow the Phase II query-response messages to be more complete as to the kinds of patient data that can be requested and delivered.
3. Generate specifications for Phase II query-response messages.
4. Review results of contract for 'Current Implementation Review' and incorporate into a specification for the Phase II delivery mechanism.
5. Using the HDF and decisions arising out of the previous task, design a standard HL7 Version 3 'payload' message to deliver an arbitrary number of clinical statements,

¹ NOTE: Although these issues should be identified and must be addressed in any implementation, appropriate security, confidentiality, and access control is subject to the rules governing the particular organizations and the agreements between them, and is outside the scope of this project. Also outside the scope is the creation and/or maintenance of any type of Master Patient Index.

each of which is able to handle a variable level of semantic interoperability from plain text to fully structured and coded clinical information, based on the capabilities of the record holder.

6. Using the outline provided, draft an implementation guide for transmitting all the data and documents comprising an entire electronic health record (EHR) between systems using these messages, independent of source and destination architectures.
7. Using the implementation guide, create a test implementation to provide Proof of Concept of the Phase II model by transferring a subset of meaningful clinical data, which demonstrates the feasibility of variable semantic interoperability between independent systems and refines the implementation guide and tool set.
8. If new or changed standards were required to accomplish these tasks, submit the additional or changed standards through the HL7 standards approval process.²

Deliverables

1. Report identified issues beyond scope of project that must be addressed in implementation.
2. Report results of exploration of the query-response message sets and propose modifications to be included in the Phase II query-response messages.
3. Report and produce tooling output from the design and/or constraints on the query-response messages.
4. Report results of analysis and propose specifications for the Phase II payload message.
5. Report and produce tooling output from the design and/or constraints on the payload message.
6. Submit a draft implementation guide that documents the implementation steps according to the supplied outline. Include any API and transform tools that enable the implementation.
7. Verify that the message set can be implemented from scratch using the implementation guide.
8. Report the results of the test implementation.
9. After refinements resulting from test implementation, submit a final implementation guide and tool set suitable for download and implementation by other organizations.
10. Participate in weekly HL7-NLM EHR Steering Committee conference calls.
11. Advise the HL7-NLM EHR Steering Committee on interactions with other modules such as the 'Current Implementation Review'.

Required Skills

HL7 Version 3 message design and tooling, CDA document design and implementation experience using the HDF.

Desired Skills

Implementation of HL7 query-response interactions between information systems.

² NOTE: If new or changed standards are submitted to HL7 for approval, a pre-ballot draft of the standards must be made available for public review and comment.

Expected Start Date

February 28, 2005

Estimated Hours

?

Expected Duration

?

Tools, queries, programs, transforms, models and methods used will be explicitly documented. Intellectual property will enter the public domain under the ownership of HL7.

Payment will be dependent on approval of the deliverable and payment by NLM to HL7.