Goal

Create a standard transaction set and associated protocols that allow the movement of all existing EHR data between any two systems that:

Phase I: can transmit and receive the data with available HL7 transactions inside a "meta" transaction (by 4/1/2005).

Phase II: require the data to conform to a defined standard information model (by 8/31/2006).

Requirements

The defined transaction must:

1. be immediately usable.*
2. allow the movement of existing EHR data between two systems using a:
    a. Phase I: "meta" transaction containing a set of whatever HL7 transactions (messages, documents) the sending system can provide.
    b. Phase II: HL7 V3.x transaction based on a standard information model for an important subset of EHR information.
3. facilitate progress toward complete semantic interoperability, e.g. by supporting unstructured data transfers while providing a framework for addition of and evolution towards fully structured data transfer (must fit into larger and ongoing solutions).
4. demonstrate its feasibility by at least one implementation for each phase.
5. include, at a minimum, allowable requests, responses, and formats for each phase.

Key Use Cases

Phase I: Communicating with community health information exchange:

1. receiving system sends request to record holder asking what HL7 transactions could be transmitted for a given patient (initial query may be open or may contain constraints such as date range, location, provider, or type of information).
2. record holder responds with types and date ranges of available transactions (record holder decides what can be made available to receiver) that meet the constraints of the request.
3. receiving system replies with request to send a defined subset of transactions (may be all) that were indicated as available.
4. record holder sends HL7 "meta" transaction containing the requested set of HL7 transactions.
5. receiving system interprets received data. This may be just to index and display the human readable form or may include translation/integration functions with other EHR information for same patient from other sources (i.e., receiving system must figure out what was sent and what can be done with it).

Phase II: Communicating between two EHR systems:

1. System A sends a request to System B for specified subset of EHR information on a given patient (may be all). Initial query/response from 1-3 above can be used.
2. System B responds by translating as much of the requested information as possible to the standard information model, formatting per the EHR interchange standard, and sending the transaction(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 only the human readable form if the more structured and coded form cannot be interpreted.

Proposed Tactics
Phase I:
1. Define 3 HL7 Version 3 query-response transactions for available/requested types of patient data based on existing Version 3 transactions, or, where required, define new transactions using the Version 3 framework. Transactions will express the appropriate level of detail in query and response.
    a. Transaction 1 is a query from an authorized requestor to a record holder asking what information they could provide on a specific patient within supplied parameters (which may default to 'all').
    b. Transaction 2 responds with a high level description or index of the information on that specific patient that could be transmitted in response to the request and the HL7 format(s) in which that information could be made available. As above, start with a very limited scope then expand as time and resources permit.
    c. Transaction 3 is a follow-up request for all or a specified subset (by type and date range, for example) of the specified patient's information and the HL7 format it should be sent in (inside the 'meta' transaction described in 3 below).
2. Create a simplified but standard HL7 Version 3 CDA document retrieval message (consistent with work already done on claims attachment processing). The document retrieval message will have one or more CDA documents as payload. The CDA documents, in turn, will contain human-readable clinical records, as defined by CDA Release 1.0.
3. Determine the optimum method to provide for inclusion of source data coded in HL7 formats. Options to be considered are a) source data encapsulated within the CDA document; b) source data in a discrete segment within the document retrieval message, with appropriate linkage to the human-readable CDA.
4. Create sample CDA documents from a range of sources: V2 and V3 result messages and non-CDA textual sources.
5. Create a test implementation and demonstration of the transfer of patient data to provide Proof of Concept of the Phase I model within the test environment established by HL7 using PHIN (public domain) mechanisms to wrap and transmit HL7 messages (handles encryption, segmentation, verification, message media, transmission mechanism) for purposes of this project.*

Phase II:
1. Identify those issues beyond the raw data transactions that need to be addressed further than what is handled with the PHIN mechanism (e.g., patient ID, document ID, ensuring data integrity, ensuring system security, documenting origin of info).
2. Refine Phase I query-response transactions as necessary to allow greater specificity of kinds of requested patient data and specification of Phase II delivery mechanism.
3. Create standard HL7 Version 3 CDA Release 2 transaction to contain arbitrary number of clinical statements, 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.
    a. Using the existing HL7 Reference Information Model (RIM), Clinical Document Architecture (CDA), and Electronic Health Record-S (EHR-S) functional model as input, identify and describe the various alternative models for the exchange of EHR data.
    b. Obtain input from relevant stakeholders on the feasibility and desirability of the alternatives and on ways to improve the proposed model.
4. Create an HL7 implementation guide for transmitting all the data and documents comprising an entire electronic health record (EHR) between systems using these transactions, independent of source and destination architectures.
5. 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.
6. Submit and approve any additional standards through the HL7 standards development process.
    a. Make a pre-ballot of the draft standard available for public review and comment.

*NOTE: 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 specification. Also outside the scope is the creation and/or maintenance of any type of Master Patient Index.