



## HL7-NLM EHR Project Highlights (v4)

The goal of this 2 year contract is to provide Government Agencies and the private sector with an implementation guide for the transmission of patient information between disparate electronic health record (EHR) systems.

This will be done in stages by leveraging existing work within HL7 to increase the usability of messaging standards. To make solutions available earlier, this project will take an iterative approach where each phase produces a usable working product. Successive phases will refine what is learned in the previous phase.

The EHR project will have at least 2 phases. Phase I will produce a solution that will allow implementation of information flow between EHR systems using existing formats in a standardized query-response message set. It will include an implementation of a secure transmission mechanism encompassing encryption, authentication, and transport verification. Phase II will be an expansion of Phase I with messages that enable more semantic interoperability and a richer query set.

**Phase I** will implement a simple query-response message set executed between two EHR systems in the following conversational format:

1. A query from an authorized requestor to a record holder asks what information could be provided on a specific patient within supplied parameters.
2. The response provides a high level description or index of the information on that specific patient that could be transmitted in response to the request.
3. A follow-up query requests all or a specified subset (by type and date range, for example) of the specified patient's information.
4. The response contains a simplified but standardized information retrieval message that has one or more CDA documents as payload. The CDA documents, in turn, contain human-readable clinical records plus optional source data encoded in HL7 formats.

This conversation takes place within a secure transmission mechanism that handles encryption, segmentation, verification, and transmission over the internet. Mechanisms to move source data into and out of these messages will also be provided. The project is on schedule to deliver a working demonstration of this message suite by February 2005.

**Phase II** will implement a more complete query-response message set that preserves the semantic content of the patient information and includes the following tasks:

1. Identify issues beyond the data transmission mechanisms that are addressed in Phase I (e.g., patient ID, document ID, data integrity, system security, documenting origin of info).
2. Refine Phase I query-response messages to allow greater specificity of requested patient data and, based on those refinements, identify the mechanism for delivery of the information.
3. Create a HL7 CDA Release 2 transaction containing an arbitrary number of clinical statements, each able to handle a variable level of semantic interoperability from plain text to fully structured clinical information based on the capabilities of the record holder.

**Additional Activities:** Additional work includes formation of a stakeholder focus group, analysis of alternative local and international EHR information exchange models, definition of a clinical data element dictionary, a live data pilot, and balloting of changes required to standards. Implementation guides will be prepared for all functional activity.

**Contribution to the field:** Many communities across the country are seeking fluid and timely communication of health information. This project demonstrates a path to simple yet extensible communication of patient information with a complete set of software tools and instructions for implementation. In doing so, the project clarifies the requirements and lowers barriers to wide-scale standards adoption.

For project description and participation information go to the [www.HL7.org](http://www.HL7.org) website and select [NLM Contract](#) under Resources or email [NLMRFP@HL7.org](mailto:NLMRFP@HL7.org).