Accelerating EMR interoperability with ELINCS

Streamlining lab connectivity to physician EMRs

A new standard for electronic results

What is ELINCS?

The EHR-Lab Interoperability and Connectivity Standards (ELINCS) project involves work with vendors, major clinical laboratories and other stakeholders—including HL7—to develop a national clinical data standard that is seamlessly adoptable by those utilizing other existing standards. It is a practical, real-world solution to solve the business problem of sending electronic reports between labs and ambulatory care units.

ELINCS was developed by the California HealthCare Foundation (CHCF) to standardize the transmission of electronic results from a laboratory information system (LIS) to a physician's electronic medical record (EMR) system. Once in the EMR system, the results can be integrated with the patient's EMR or EHR (electronic health record) and reviewed with the patient's medical history.

The ELINCS project was taken over by CHCF when the Office of the National Coordinator of Health Information Technology (ONCHIT) asked that they lead the development of an ELINCS implementation guide. It should be noted that the CHCF had already successfully developed an implementation guide for the batch reporting of lab results in California (CALINX).

ELINCS relies on HL7 and uses LOINC (Logical Observation Identifiers Names and Codes) as a way to standardize the laboratory observation terms. There are more than 40,000 codes available in LOINC, so ELINCS focuses only on those codes that are of largest value in an ambulatory care setting.

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While only a fraction of the available tests are covered under the ELINCS standard, those that are covered represent 80% of the physician interests.

Currently, ELINCS is used only for electronic results from labs to EMR systems at the application level, focusing on the piece most crucial to physicians.

ELINCS and EMR systems

Many physicians today still rely on traditional paper records to view lab or test results. But increasingly, physicians are adopting EMR systems and finding that they provide a far more efficient and productive method of viewing patient information—including results from the lab.
An EMR system's value increases dramatically when real-time transmission of electronic lab results occurs, providing a more complete patient profile in the EMR. Electronic integration is a faster, more accurate method to transmit results to your community of physicians because it replaces time-consuming manual entry and delivery, and minimizes the possibility of human error.

As more EMR systems are adopted by physician offices, more laboratory service providers are receiving requests to send results electronically to an EMR system. Fulfilling this request for multiple EMR systems can be facilitated by integration with the ELINCS standard. When both the lab and the EMR system are integrated with ELINCS, new connections can get up and running quickly without having to configure a custom interface.
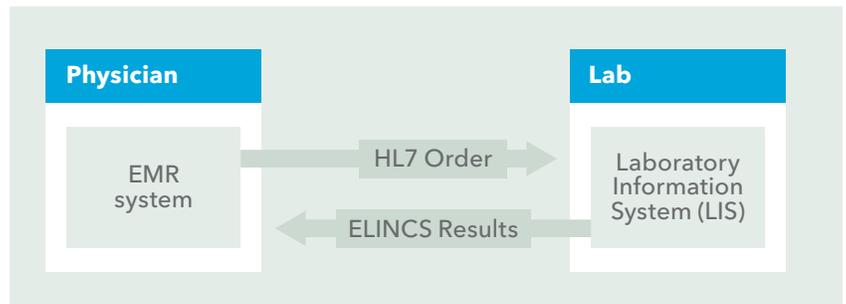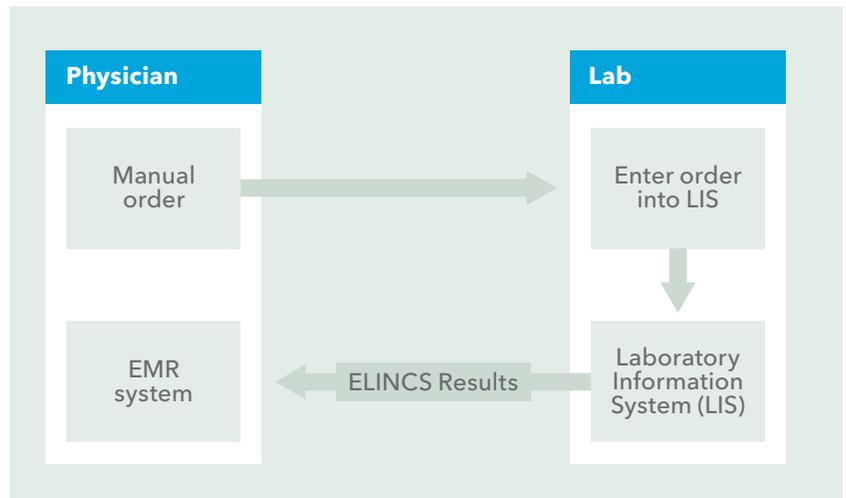
It is predicted that the ELINCS standard will ultimately expand the use of electronic medical records in physician practices and make electronic connectivity to labs less complex. Beginning in the spring of 2007, all new EMR/EHR systems seeking CCHIT (Certification Commission for Healthcare Information Technology) certification will be required to support the ELINCS v1.1 standard. Consequently, LIS vendors and labs need to consider adopting ELINCS.

Who uses ELINCS?

ELINCS is used by commercial labs and hospitals that need to send electronic results from their laboratory information system to ambulatory care providers' EMR systems.

ELINCS may be used for other business scenarios outside those explicitly described in the standard, such as to send data between multiple EMR systems or between a laboratory and a RHIO (Regional Health Information Organization); however, it is not really designed to be used for these purposes. The focus of ELINCS is on the sending of results from a lab to an EMR system.

Although ELINCS is focused on the results standard only, electronic connectivity can be streamlined further by using HL7 to also deliver lab orders. The electronic exchange of patient data would then occur with both orders and results. 4

ELINCS streamlines HL7 for labs

The HL7 standard provides a way to transmit lab results using a standard message format. However, physicians and labs can become hindered by the many components of the result message that are not used, that are used differently by each connected system, or that do not apply to lab reporting. Often a specialized interface must be implemented to transmit messages that are compatible with the widely varying configurations of the connected systems. In the case where a lab simply wants to transmit results quickly to an EMR system, this task can prove expensive and time-consuming.
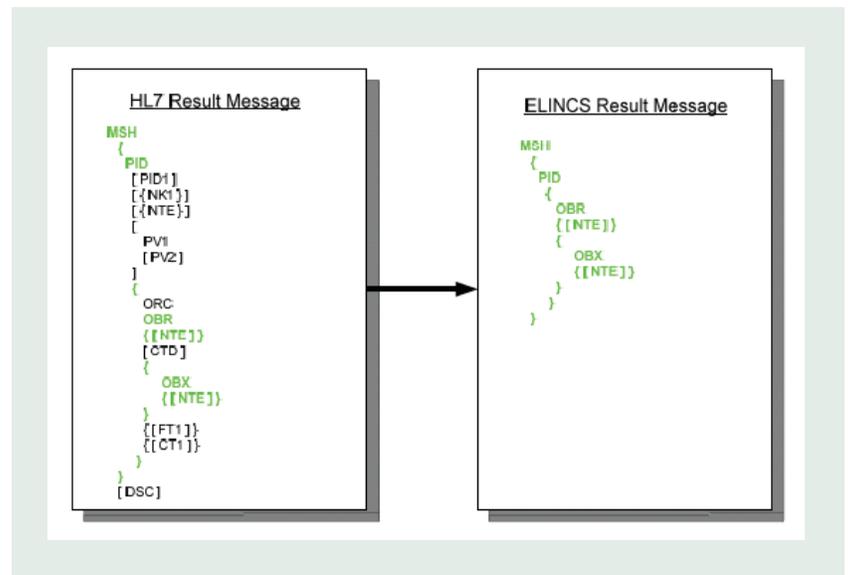
The ELINCS standard limits the scope of a general HL7 result message (ORU) and helps in solving this problem for labs. It creates a practical method for delivering results in:

- A standardized format
- A format that works seamlessly with the HL7 standards
- A format that includes only those components that are useful for lab result reporting

The ELINCS standard is based on the HL7 ORU format. But the complexity of the result message has been simplified by excluding certain parts or adjusting cardinality. This is done in a way that streamlines a generic HL7 result message into a tailored result message, so that it becomes more useful in a lab reporting environment.

ELINCS builds upon existing concepts of the HL7 standard by acting as a profile layered on top of it.

HL7 will adopt ELINCS and assume responsibility for maintaining and developing the ELINCS standard beginning with HL7 v2.5.1. This will assure a lasting partnership between the two standards and continued seamless communications between your lab and your connected EMR systems.

Benefits of integration with ELINCS

Integration with ELINCS enables your lab to quickly connect to increasingly popular, modern EMR systems without having to create custom message configurations.

The benefits of integrating with ELINCS include:

- Greater ease in interfacing with EMR systems that currently use ELINCS, because the standard is defined (still requires an LIS interface)
- Fast, reliable delivery of electronic test results in real-time using a TCP/IP communication layer
- Immediate acknowledgement of successful transmission of data using a TCP/IP communication layer
- Elimination of slower, manual delivery of results

- Connectivity with multiple EMR systems without requiring a custom interface
- Readily available electronic results that can be transmitted to integrated ambulatory systems
- Guaranteed lab result connectivity with all CCHIT certified EMR systems

The end result is that dollars are maximized, patient care is improved, and medical record accuracy is increased.

Implementation considerations

All parts of the lab result reporting process must meet the requirements of ELINCS in order to transmit successfully and integrate seamlessly with multiple systems.

To use ELINCS, a provider or lab must negotiate message transport functionality with the receiving ambulatory EMR system. ELINCS dictates the formatting and coding of data for electronic messages, but does not specify the transportation method. Most labs currently using the HL7 standard, however, already utilize TCP/IP with MLP (minimum lower layer protocol) as the transportation method.

In addition, all parties integrated with ELINCS for lab results must agree on the ordering methodology—electronic or manual. This is because lab order forms (i.e. requisitions, order codes, and business rules) are not standardized. For example, the code used for a CBC (complete blood count) test varies widely from lab to lab, as do the forms used to order the test.

Summary

Once the ELINCS standard is adopted, it will allow your lab to communicate results quickly and easily with the growing number of EMR systems in the ambulatory care setting. The ELINCS standard covers results reporting for the most common tests encountered in the lab environment. It is of great value to physicians as the use of EMRs/EHRs steadily increases.

ELINCS compliance assures results are delivered to your physicians in a compatible format and in a timely manner. It improves patient care through seamless integration with the EMR and the patient's medical history, allowing the physician to identify trends and compare results.

Adoption of the ELINCS standard also eliminates the lab's need to create custom interfaces for new EMR connections. The end result is more time to devote to fulfilling physicians' needs, less money spent on delivery of results, and a more defined approach to connecting with new EMR systems. With the CCHIT soon requiring new EMR systems to conform to the ELINCS standard, it is essential that labs begin to consider adoption of this standard to transmit results to all physicians in their ambulatory care community.

About Corepoint Health

Corepoint Health solutions deliver interoperability for healthcare organizations and simplify the complexities of healthcare data through practical software applications, consulting and training. Our innovative and proven software solutions leverage clinical data flow efficiently for a diverse group of healthcare entities including hospitals, imaging centers, laboratories, clinics and healthcare vendors. This next generation approach to healthcare data and streamlined workflow is where Corepoint Health specializes in helping customers discover the power of integration.

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