LRN Results Messenger & LIMS Integration

Background

Laboratory results are a critical component of public health practice and help drive decisions during a public health response. To support early event detection and response, public health laboratories should have the capacity to share standard electronic data with one another and other public health partners. Enabling industry standards for laboratory data management and exchange will help ensure that public health partners can send, receive, and utilize laboratory results when and where they need them.

The anthrax events of 2001 provided an acute example of the importance of standards-based data interoperability among public health laboratories. More than one million laboratory tests on over 125,000 samples were reported during the event. Responding organizations did not have the capacity at the time to share critical laboratory data effectively using standard and interoperable means. Interoperable data exchange would have strengthened the response by reducing the amount of human effort and time required for effective data management.

Overview

The Laboratory Response Network (LRN) is a coordinated network of public health and other laboratories for which CDC provides standard assays and protocols for testing biological and chemical terrorism agents. LRN Results Messenger (LRN RM) was created to provide LRN laboratories with the ability to manage and share standard laboratory results data securely with public health partners. LRN RM represents the first step in an incremental approach to providing full standards-based electronic data exchange for this vital laboratory network. While the application is not intended as a substitute for a fully-functional laboratory information management system (LIMS), it is important for all LRN laboratories to be prepared.

The LIMS Integration (LIMSi) project is a parallel effort to LRN RM. It represents the next generation of the incremental approach to data exchange for the LRN. Its purpose is to enable laboratories to fulfill data exchange needs for the LRN using their own systems. LIMSi is currently facilitating collaborative efforts between CDC and public health laboratory subject matter experts to refine system requirements needed to configure LIMS to manage LRN testing. The LIMSi project is also creating a constrained version of the PHIN Laboratory Generic message guide that specifically targets the messaging and data mapping needs for the LRN.

LRN Results Messenger

LRN RM provides basic laboratory data management, including the ability to enter and share sample and results data. The application standard terminology code sets for Logical Observation Identifiers Names and Codes (LOINC) and Systematized Nomenclature of Medicine (SNOMED). Health Level Seven (HL7) 2.5 messages are encrypted and securely transported to partners using CDC's Secure Data Network (SDN) and PHIN Messaging System (PHIN MS) infrastructure.

LRN Results Messenger quick facts:

- Installed in over 150 LRN laboratories
- Captures test results for LRN biological assays and provides a platform for sharing results
- Data management and exchange for chemical terrorism will be added in Fall 2007
- Supports the data exchange needs of biological proficiency test exercises for the LRN
- Provides LRN laboratories with a mechanism to send electronic test requests to one another
- Tests can be messaged to CDC for consultation
- Users can attach files to test requests or results
- High-volume data entry is supported through a multi-user interface
- Application updates are automatically provided by CDC via an Auto-Update mechanism, reducing maintenance and administration costs

CDC — National Center for Preparedness, Detection and Control of Infectious Disease — LRN
Laboratory Response Network

International Locations: AUSTRALIA, JAPAN, UNITED KINGDOM, GERMANY
CANADA, ALASKA, HAWAII

LRN Laboratories March 2, 2007
n = 162

Legend:
- Public Health (110)
- Military (18)
- Federal (5)
- Food (12)
- Veterinary (9)
- International (8)