



# Data exchange between public health and clinical laboratories: why standards and interoperability are a critical part of quality

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# Laboratory Response Network

- Goal – an integrated multilevel laboratory network to provide rapid and critical laboratory capacity
- Coverage of both biologic and chemical agents
- **Participation of clinical, state and local public health, military, veterinary, agricultural, water and food testing laboratories**
- Federal participants include FDA, NIH, FBI, DoD, DOE, USDA, EPA
- **Data, information, and results exchange critical and complex**

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# Laboratory Response Network (LRN)

- ◆ Standardized reagents and controls
- ◆ Laboratory referral directory
- ◆ Secure communications and **electronic laboratory reporting**
- ◆ Agent specific protocols
- ◆ Training and technology transfer
- ◆ Proficiency testing

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# Public Health Information Network



Early Event Detection

Outbreak  
Management

Surveillance/Case  
Reporting

Connecting Lab Systems

Secure Communications

Analysis & Interpretation

Information  
Dissemination &  
Knowledge Management

Countermeasure  
administration and  
Response



**PUBLIC HEALTH INFORMATION NETWORK**

Federal Health  
Architecture, NHIN  
& Consolidated  
Health Informatics

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# Health Information progress

- eGov Consolidated Health Informatics adopts government wide interoperability standards:
  - ◆ HL7 messaging standards
  - ◆ LOINC—lab test identifiers
  - ◆ SNOMED—lab result content
- Government license for SNOMED made available 4/2004
- Proposed HL7 standard for Electronic Health Record
- Funding initiatives for Electronic Health Record



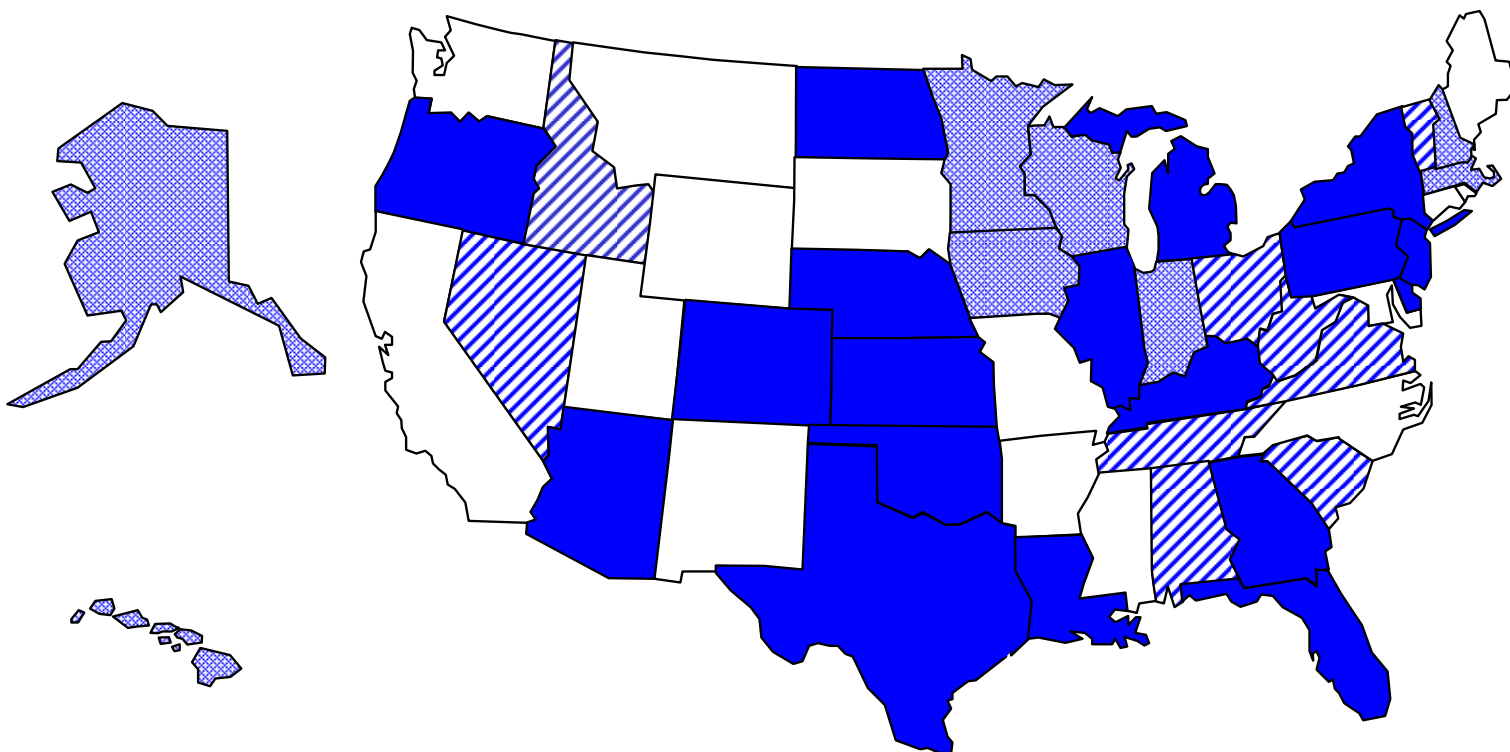
# PHIN use of standards for laboratory information exchange



- **HL7 2.x public health lab message**
  - ◆ **NEDSS surveillance systems**
  - ◆ **LRN messenger application**
- **LOINC, SNOMED**
- **PHIN MS – software tool provided by CDC for secure bidirectional data transport**
  - ◆ **Used by LRN; NEDSS; commercial products**
    - ★ **laboratory information management system**
    - ★ **integration broker**

# State NEDSS/PHIN Surveillance Functions

## April 2005



**Surveillance using web-based data entry - 9**



**Electronic Laboratory Reporting - 8**



**Both - 18**



# Information systems and clinical laboratory quality



- **Results reporting: timely, accurate, complete, automatic, decreased burden**
  - ◆ **Generate and accept HL7 messages with standard codes— ideally from LIMS**
- **Facilitate quality assurance testing**
- **Assign LOINC codes as part of test licensure**
- **Help clinical labs play leading role in national health data exchange**