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

Claire Broome, MD

CLIAC

September 7, 2005

SAFER • HEALTHIER • PEOPLE™

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**

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

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

phin

PUBLIC HEALTH INFORMATION NETWORK

Federal Health Architecture, NHIN & Consolidated Health Informatics

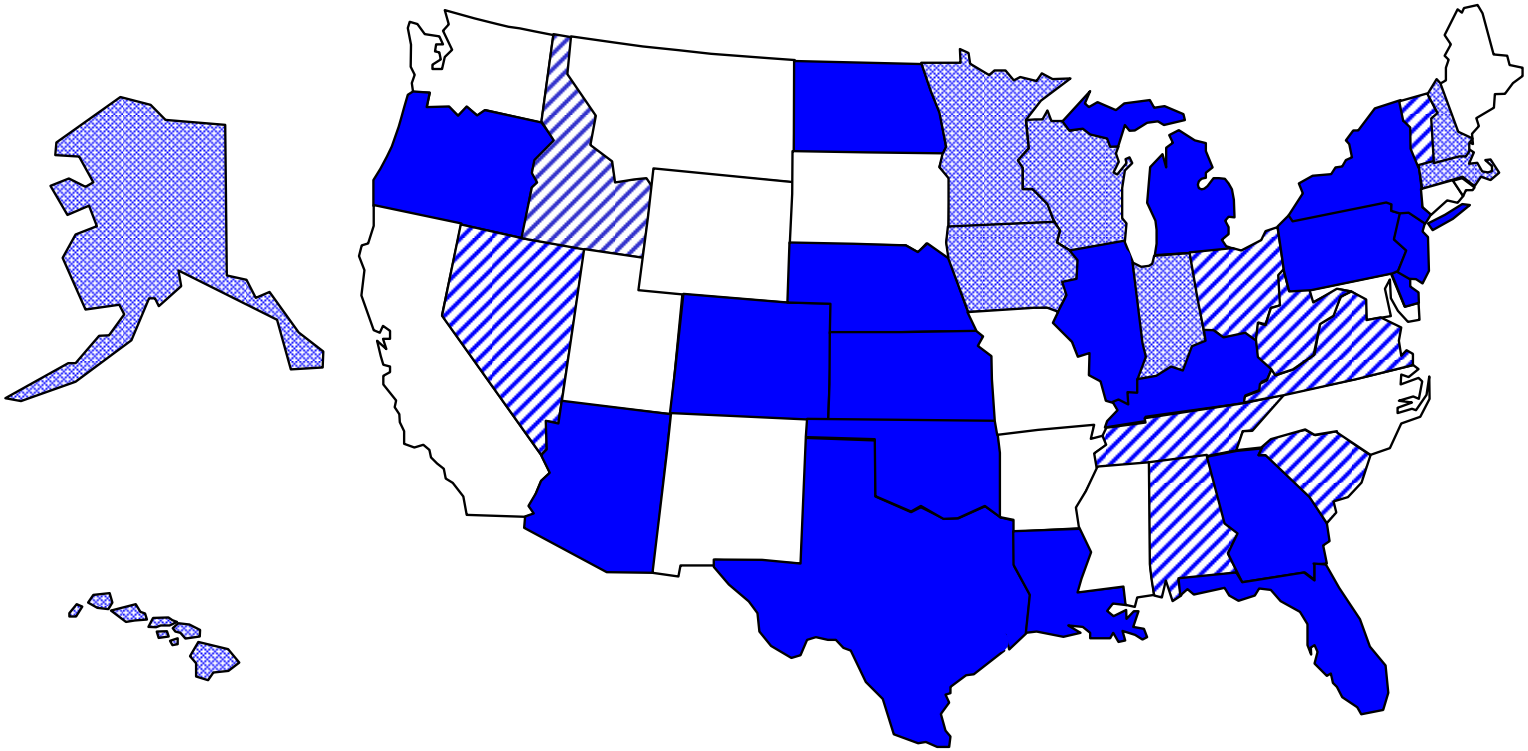
Health Information progress

- 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