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
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

Federal Health Architecture, NHIN & Consolidated Health Informatics

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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
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

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