

Public Health Resources and Tools That Support Meaningful Use

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Public Health Informatics and Technology Program Office
Division of Informatics Practice, Policy, and Coordination**

Meaningful Use for Public Health Professionals: Basic Training

May 16, 2011 – CDC

May 24, 2011 – AMIA



Disclaimer

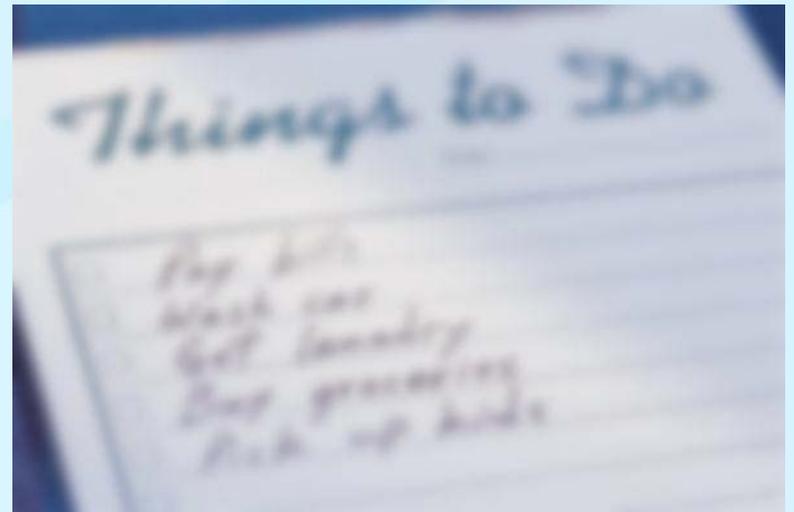
- ❑ **The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.**

Objectives

- ❑ **Describe the Public Health Information Network (PHIN)**
- ❑ **Describe how PHIN aligns with other federal health information technology initiatives**
- ❑ **Understand how CDC/PHIN tools may be leveraged for meaningful use**
- ❑ **Understand how CDC programs support the public health meaningful use objectives**

Your Challenge During This Session

- ❑ **Think of one way you could use this information in your current work**
 - What resource could be useful to you?
 - Why is PHIN important?
 - How can you make PHIN work for you?

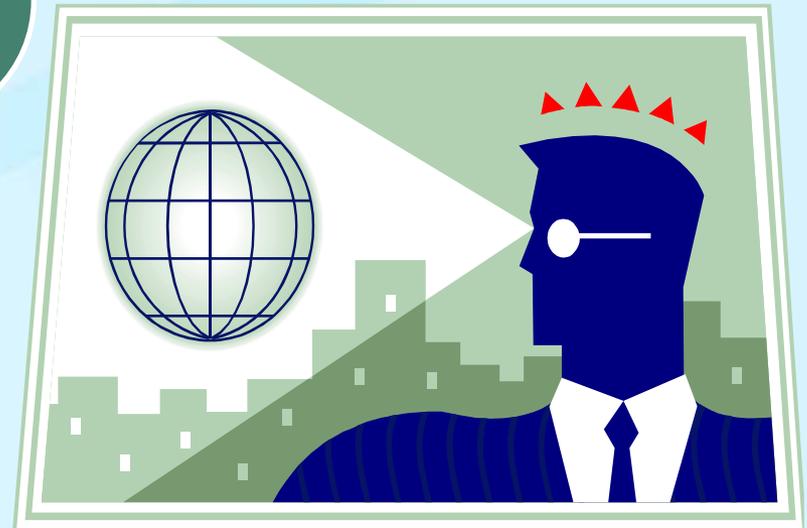


DESCRIBE THE PUBLIC HEALTH INFORMATION NETWORK (PHIN)

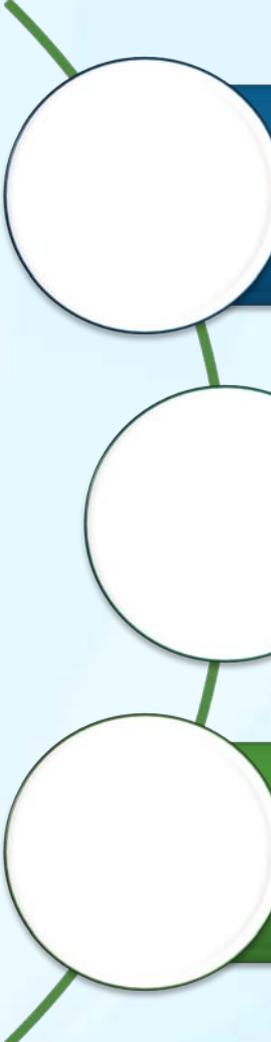
Public Health Information Network (PHIN)



Vision: An integrated healthcare and public health system using information effectively to advance population health and well being.



PHIN Strategic Goals



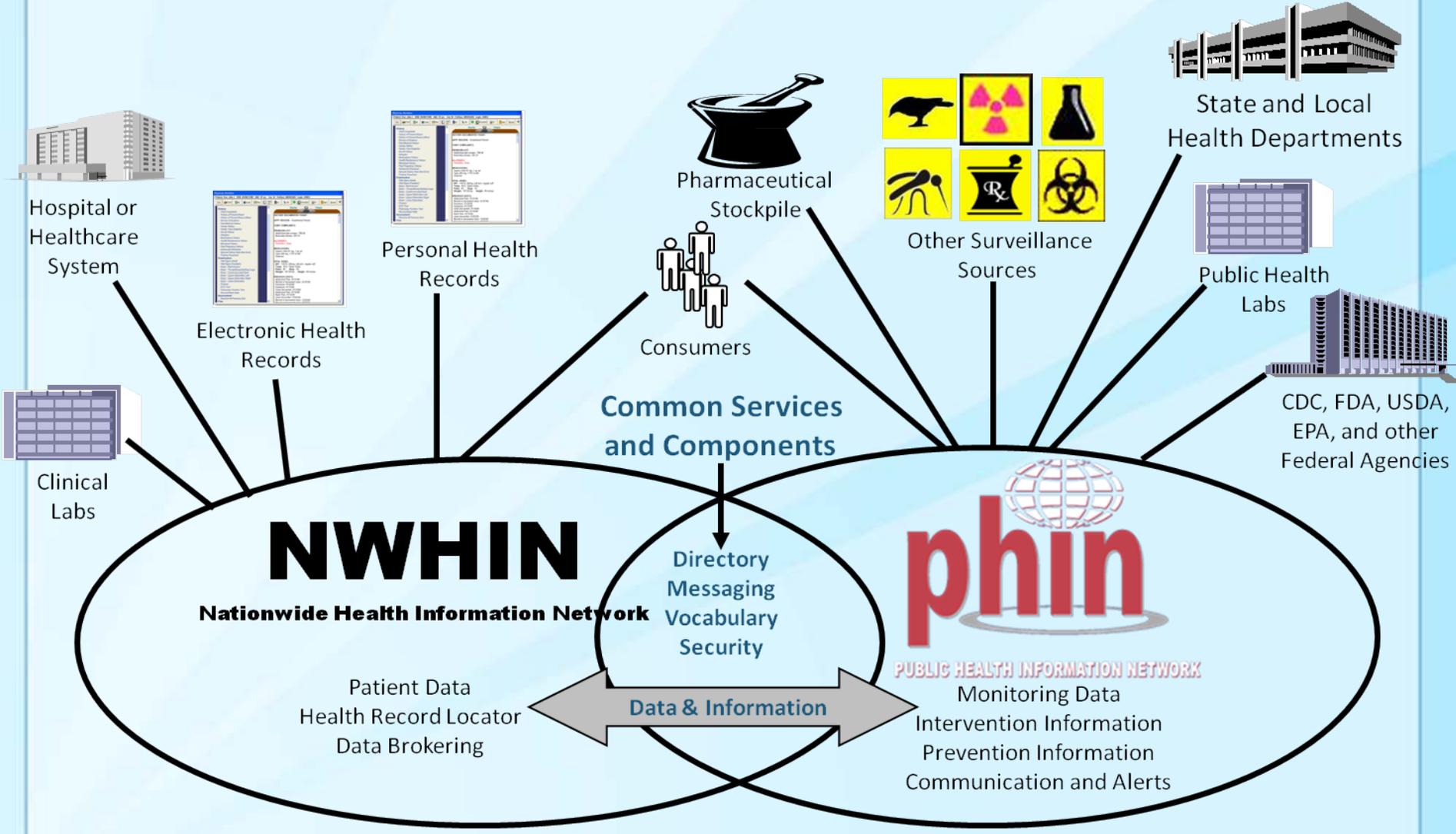
Provide leadership in the selection and implementation of shared policies, standards, practices, and services for nationwide public health information exchange

Define, advocate for, and support public health needs and roles in national health information technology and exchange initiatives

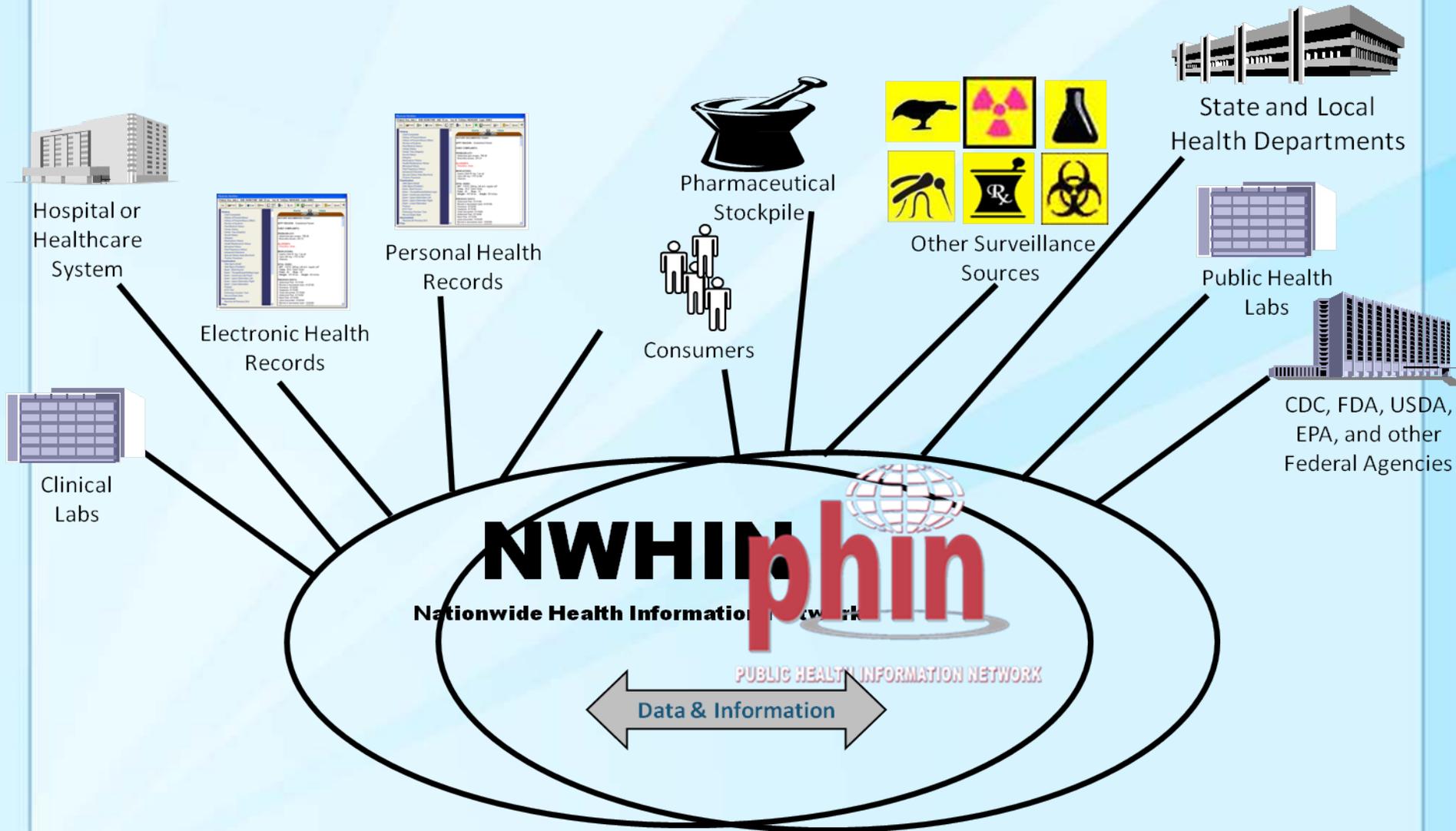
Perform key public health information exchange and standards management roles

**DESCRIBE HOW PHIN ALIGNS WITH
OTHER FEDERAL HEALTH
INFORMATION TECHNOLOGY
INITIATIVES**

Data Exchange Model (Before)



Data Exchange Model (After)



**UNDERSTAND HOW CDC/PHIN
TOOLS MAY BE LEVERAGED FOR
MEANINGFUL USE**



PHIN Support Team

Funding Initiatives

CDC/PHIN Tools and
Resources



PHIN Support Team

❑ Technical Assistance

- Subject matter experts support the HHS regions
- Helpdesk
- Activities
 - Listservs
 - Websites
 - Nationwide calls

❑ Contact Us

- www.cdc.gov/phin
- PHINTECH@cdc.gov
- 1-800-532-9929

Funding Initiatives



Epi and Lab Capacity (ELC) Cooperative Agreements

- NEDSS
- BioSense



Public Health Emergency Preparedness (PHEP) Cooperative Agreements



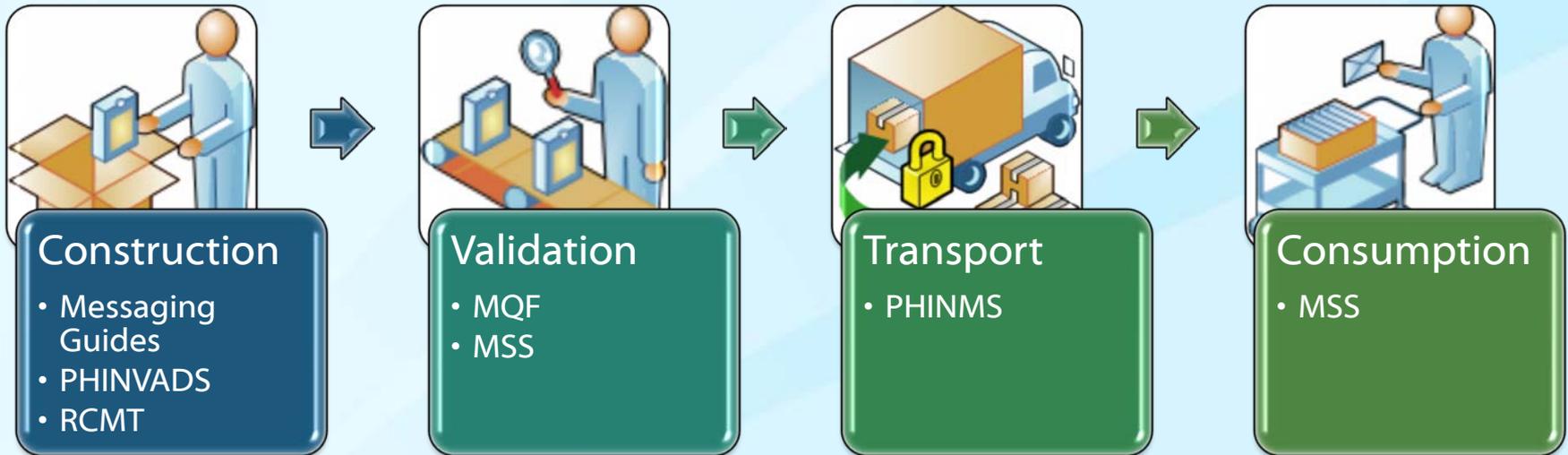
National Public Health Improvement Initiative Cooperative Agreement



EHR-IIS Enhanced Interoperability Cooperative Agreement

- 20 Immunization Program Grantees
- \$21.4 M

CDC/PHIN Tools and Resources for Messaging



Construction: PHIN Messaging Guides

- ❑ Message mapping guides on PHIN website
- ❑ Syndromic surveillance guide

The screenshot shows a web browser window displaying the PHIN Message Mapping Guides page. The browser's address bar shows the URL: [CDC - Public Health Information Network \(PHIN\) - Res...](#). The page title is "PHIN Message Mapping Guides". The main content area features a heading "PHIN Message Mapping Guides" followed by a sub-heading "Find all Implementation Guides for PHIN applications and services here. The guides are in final format." Below this, there are five links, each with a PDF icon: [Case Notification Message Mapping Guides](#), [PHIN Communication and Alerting \(PCA\) Guide v.1.3](#), [PHIN Exchange Developer Guide v1.0](#), [PHIN Directory Exchange Implementation Guide](#), and [PHIN Secure Message Transport Guide](#). On the left side, there is a navigation menu with the following items: PHIN Home Page, About, Resources, Certification, Guides (expanded), Message Mapping, Requirements, Tools, Vocabulary, Messaging, Architecture, Resource Exchange, Technical Assistance, Standards, Activities, Communities, Meaningful Use, Library, Conference, News & Events, and Contact. On the right side, there is a "Text size:" control and a "Contact Us:" section with the following information: Public Health Information Network (PHIN), 1600 Clifton Road, Atlanta, GA 30333, 1-800-554-4477 (770-458-4477), TTY: (800) 458-4477, 24 Hour, and PHIN@cdc.gov. At the bottom of the page, there are icons for Email, Print, Share, Updates, Subscribe, and Listen.

Construction: PHIN VADS



- ❑ **Common terminology reference tool for accessing, searching, and distributing HL7 messaging value sets**
- ❑ **Promotes sharing and reusing of the value sets**
- ❑ **Allows access to the current, past and the future versions of value sets and value set collections**

Construction: PHIN VADS

How can you access it?

- ❑ PHIN VADS Web Browser <http://phinvads.cdc.gov>
- ❑ PHIN VADS Hyperlinks for Meaningful Use Stage 1 Vocabulary:
 - MU Stage 1 - [Immunization HL7 2.5.1 IG Vocabulary](#)
 - MU Stage 1 - [ELR HL7 2.5.1 IG Vocabulary](#)
 - MU Stage 1 – [Value sets related to Syndromic Surveillance](#)
- ❑ PHIN VADS Web Service – System to System exchange of vocabulary data
- ❑ PHIN VADS Lite – Local instance of VADS web services and database
- ❑ PHIN VADS Custom Downloader (using web services)

Construction: RCMT

Reportable Conditions Mapping
Table

RCMT provides all the lab tests (LOINC) and results (SNOMED*) associated with jurisdiction reportable and nationally notifiable conditions

Facilitates filtering and routing of reportable lab results to various PH Programs

Available June 2011, starting with nationally notifiable conditions

* SNOMED = Systematized Nomenclature of Medicine--Clinical Terms

Validation: PHIN MQF



Messaging



Quality



Framework

- ❑ **Structural, vocabulary, and message validation at the national level**
- ❑ **Supports validation for Stage 1 meaningful use – Reportable lab results and immunization registries**
- ❑ **Meaningful use *senders* can pre-test messages**
- ❑ **Meaningful use *receivers* can obtain MU-compliant test messages for pre-testing**
- ❑ **National conformance profiles available for download**

Validation: PHIN MQF

- ❑ <https://phinmqf.cdc.gov> (available through any internet connection)

The screenshot displays the PHIN Message Quality Framework (MQF) website. The header includes the CDC logo, the title "PHIN MESSAGE QUALITY FRAMEWORK", the version "Release 2.2", and a "Support" link. A navigation bar shows "Home". The main content area is divided into three columns. The left column contains a "References" section with links for "About MQF", "Release Notes", and "Supported Specifications"; a "Related Links" section with links for "ELR Specification", "Immunization Specification", "PHLIP Specification", "Specifications/Guides", "PHIN Certification", "PHIN MS", and "PHIN VADS"; and a "User Links" section with links for "ELR User Guide" and "Immunization User Guide". The center column features a "Welcome to MQF" section with a paragraph describing the framework, followed by a "Message Domains" section with a bulleted list of domains: Case Notification, Meaningful Use-Electronic Laboratory Reporting Receiver Profile, Meaningful Use-Electronic Laboratory Reporting Sender Profile, Meaningful Use-Immunization HL7 2.3.1, Meaningful Use-Immunization HL7 2.5.1, and PHLIP. The right column contains an "Instructions" section with three paragraphs explaining the site's layout and navigation. The browser's status bar at the bottom shows "Trusted sites" and a page number "1".

PHIN MESSAGE QUALITY FRAMEWORK
Release 2.2

Support

Home

References

- About MQF
- Release Notes
- Supported Specifications

Related Links

- ELR Specification
- Immunization Specification
- PHLIP Specification
- Specifications/Guides
- PHIN Certification
- PHIN MS
- PHIN VADS

User Links

- ELR User Guide
- Immunization User Guide

Welcome to MQF

The Message Quality Framework (MQF) is a flexible framework of services and utilities designed to assist public health partners with preparing and communicating quality, standard electronic messages as defined by the applicable messaging, vocabulary, and programmatic standards.

Message Domains

- Case Notification
- Meaningful Use-Electronic Laboratory Reporting Receiver Profile
- Meaningful Use-Electronic Laboratory Reporting Sender Profile
- Meaningful Use-Immunization HL7 2.3.1
- Meaningful Use-Immunization HL7 2.5.1
- PHLIP

Instructions

You have accessed the Home page of MQF.

The left column remains static as you use the system and provides you with References, Related Links, and User Links, and Profile Downloads.

The right column is dynamic and provides you with instructional information as you navigate through the system.

The center portion of the page is the area where you interact with PHIN MQF.

To continue, click the desired domain listed under Message Domains.

Trusted sites

Validation: MSS



Messaging



Subscription



Service

- ❑ **Structural and message validation at the local level**
- ❑ **Mapping of 2.3.1 to 2.5.1**
- ❑ **XML profiles available for states**
- ❑ **Community of Practice: NEDSS Messaging User Group**
- ❑ **Technical assistance to states**



Transport: Overview

- ❑ **The EHR/meaningful use regulation contains no requirement as to message transport**
- ❑ **Public health is invested in PHIN Messaging Service (PHINMS)**
- ❑ **ONC is piloting and supporting Direct**
- ❑ **Options:**
 - PHINMS
 - SFTP
 - Direct
 - Connect

Transport: What Should Public Health Do?

Near term: Try
to employ
Direct

Some software and
service providers for
clinical health will
be implementing
Direct

CDC/ONC target for
October 2011

Long term:
Collaborate
to determine
PH Transport
Strategy

Articulate business
level needs →
analysis → tech
requirements →
solutions

Use Standards and
Interoperability (S&I)
framework

- Endorsed by ONC

Consumption: MSS



Messaging



Subscription



Service

- ❑ **Integration engine, handles messages**
- ❑ **Provides content and structural validation**
- ❑ **Routes to appropriate surveillance system**

**UNDERSTAND HOW CDC
PROGRAMS SUPPORT THE PUBLIC
HEALTH MEANINGFUL USE
OBJECTIVES**

Programs

National
Electronic
Disease
Surveillance
System
(NEDSS)

Immunization
Information
Systems (IIS)

Syndromic
Surveillance
(SS)

Electronic
Laboratory
Reporting
(ELR)



What Is NEDSS?

❑ **Broad initiative**

- Promotes the use of data and information system standards to advance the development of efficient, integrated, and interoperable surveillance systems at federal, state and local levels
- Major component of PHIN

❑ **Designed to:**

- Monitor the health of the nation
- Facilitate electronic transfer of appropriate information from clinical information systems to public health departments
- Reduce provider burden in the provision of information
- Enhance timeliness and quality of information provided



Key Components of NEDSS



Leadership in the adoption of standards-based interoperable surveillance information systems that integrate epidemiologic, laboratory, and clinical information



Key tools for collecting, exchanging and analyzing information



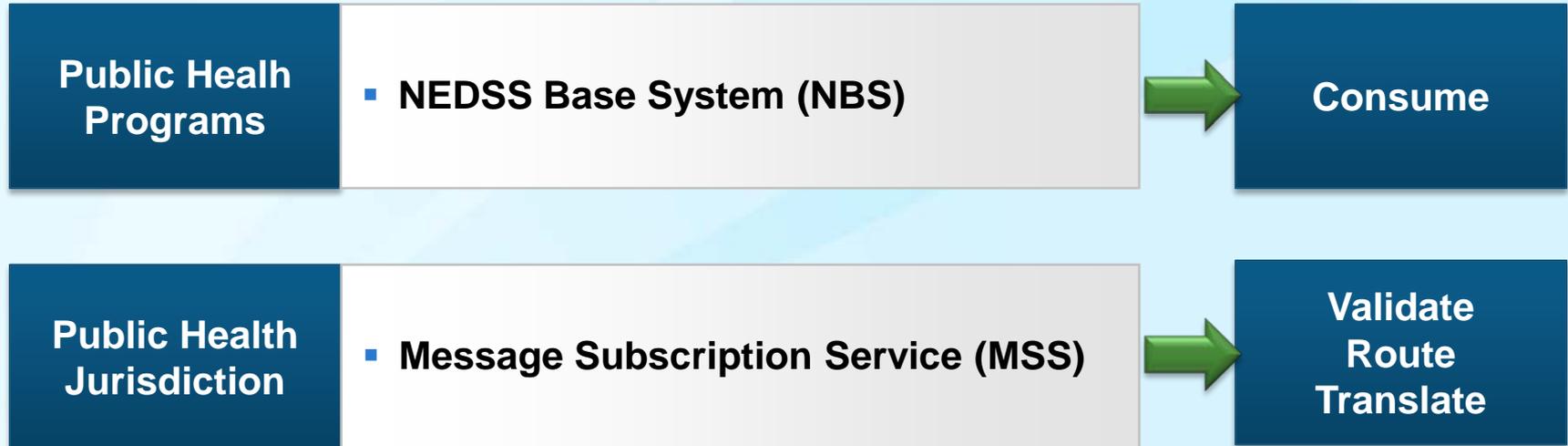
Surveillance infrastructure resources to state and local health departments for the required personnel, training and equipment



Meaningful use-compatible ELR infrastructure to support reportable disease surveillance

NEDSS and Meaningful Use

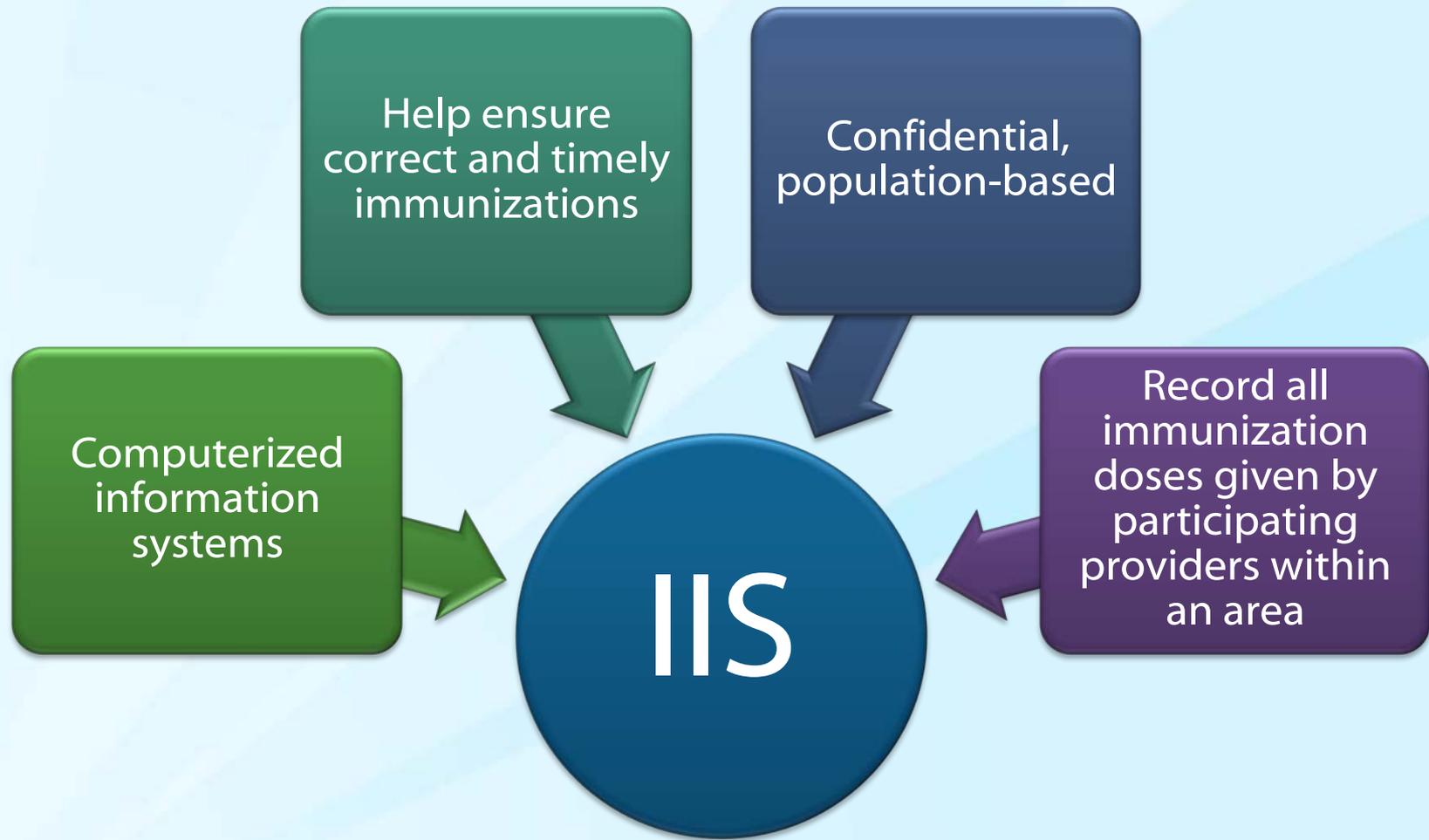
- ❑ **NEDSS tools that support meaningful use are:**
 - NEDSS Base System
 - Message Subscription Service



NEDSS Tools and Applications: How Can You Access Them?

- ❑ **Freely available to public health jurisdictions:**
 - NEDSS-Base System
 - Programmatic: Wayne Brathwaite (wsb2@cdc.gov or 404.498.6279)
 - Technical Lead: Arun Srinivasan (fos2@cdc.gov or 678.733.4692)
 - NEDSS Message Subscription Service, including request for technical assistance and training
 - Technical Lead: Arun Srinivasan
 - NEDSS Cooperative Agreement support, please contact the Epidemiology and Laboratory Capacity
 - Programmatic: Alvin Shultz (fcu9@cdc.gov or 404.639.7028)

What is an Immunization Information System?



Source: <http://www.cdc.gov/vaccines/programs/iis/what-iis.htm>

EHR- IIS Interoperability

2009 IIS Annual Report

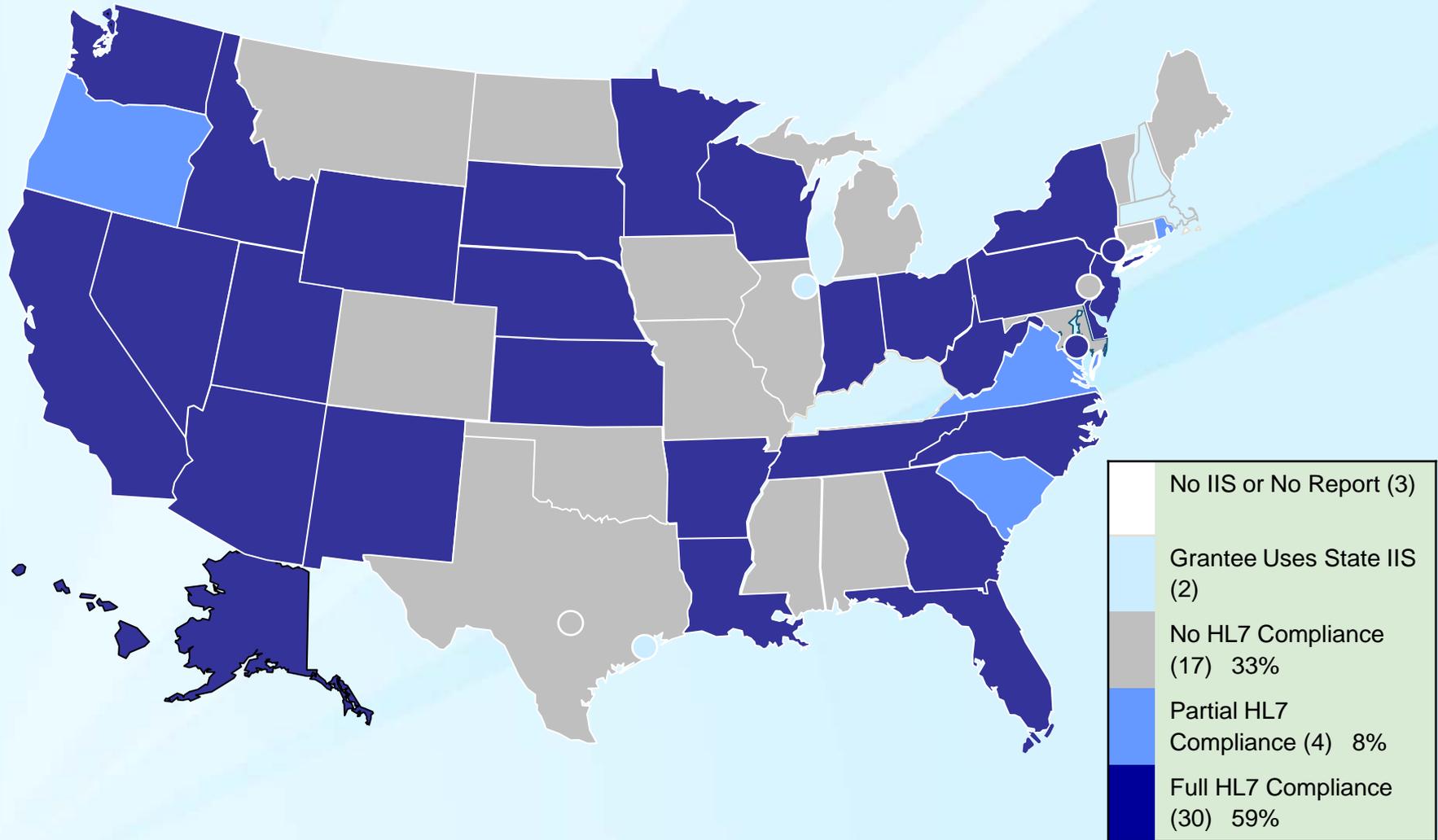
Question

How many EHRs provide immunization data directly to an IIS through an electronic interface?

Answer

37 grantees reported that 3,618 EHRs electronically report data to an IIS

Compliance with Health Level Seven Intl. (HL7) Messaging Standards in a grantee IIS-- US and six cities, 2009





What is Syndromic Surveillance?

❑ Syndromic Surveillance

- Public health surveillance emphasizing the use of near “real-time” pre-diagnostic data and statistical tools to detect and characterize unusual activity for further public health investigation
- Situation Awareness - Syndromic Surveillance is not always about detecting the disease, but also ‘what’s going on’

❑ Public Health Surveillance

- Ongoing, systematic collection, analysis, interpretation, and dissemination of data regarding a health-related event for use in public health action to reduce morbidity and mortality and to improve health



CDC Support of Meaningful Use Syndromic Surveillance

- ❑ **BioSense Program Redesign reflects approach to MU Syndromic Surveillance**
 - Collaborative user-centered design approach with CDC and partners
 - Technology supports surveillance, not the other way around
 - Stakeholders have ownership and CDC respects jurisdictional boundaries
 - State/Local Public Health
 - CSTE, ASTHO, NACCHO, ISDS, other professional organizations
 - Initial requirements gathering, ongoing feedback, program improvement

EHR Requirements for Syndromic Surveillance

- ❑ Developed by ISDS and BioSense Program
- ❑ User-centered process to define “what to send” to public health for meaningful use
- ❑ Includes 32 data elements commonly used by public health authorities to conduct syndromic surveillance
- ❑ Final guide published for public comment in Federal Register



Final Recommendation:
Core Processes and EHR Requirements for Public Health Syndromic Surveillance

International Society for Disease Surveillance (ISDS)
Meaningful Use Workgroup

January 31, 2011

Final Recommendation: Core Processes and EHR Requirements for Public Health Syndromic Surveillance
4. Core EHR Data Requirements
4.4 Minimum Data Set

4.4 Minimum Data Set

The following table contains a minimum list of data elements commonly used by PHA's to conduct PHSS. This list does not represent the entire list of data elements needed to support the full spectrum of current practice. Therefore, the actual data elements and specifications are subject to change in accordance with applicable state and local laws and practices.

Table 13: Minimum Data Set commonly used by public health authorities to conduct public health syndromic surveillance

#	Data Element Name	Description of Field	Usage	Cardinality	Value Set	Notes
Treatment Facility Identifiers						
1	Facility Identifier (Treating)	Unique facility identifier of facility where the patient originally presented (original provider of the data)	R	[1..1]	National Provider Identifier	<ul style="list-style-type: none"> Use facility identifier for state or local reporting only. This is due to agreements with many health data providers that explicitly state that states or localities will not expose them to a third party like the federal government when reporting above state level. This number should be specific for each facility location (not a number representing an umbrella business). It is recommended that National Provider Identifier (NPI) be used for the Facility Identifier.
2	Facility Name (Treating)	Name of the treating facility where the patient originally presented	O	[0..1]		<ul style="list-style-type: none"> If this data element is captured and maintained as part of the facility registration process, it may not be sent with every message. See section on Facility Registration. This data element captures data for

ISDS Meaningful Use 56



Supporting State and Local Syndromic Surveillance Efforts

- ❑ **BioSense partnering to develop community-owned “catcher’s mitt”**
 - Technical assistance to help state, local public health take advantage of meaningful use by helping them “catch” meaningful use data
 - Addresses ASTHO survey finding - fewer than 25 percent of jurisdictions are meaningful use ready, especially for syndromic surveillance
 - Joint CSTE, ASTHO project funded by BioSense Program
 - Includes other federal partners and national providers
 - Focuses on human aspects of public health surveillance by using a social network approach to strengthen the community and encourage sharing and collaboration
 - Helps state, local public health take full advantage of automated data collection

What is ELR?

Reportable/Notifiable Conditions

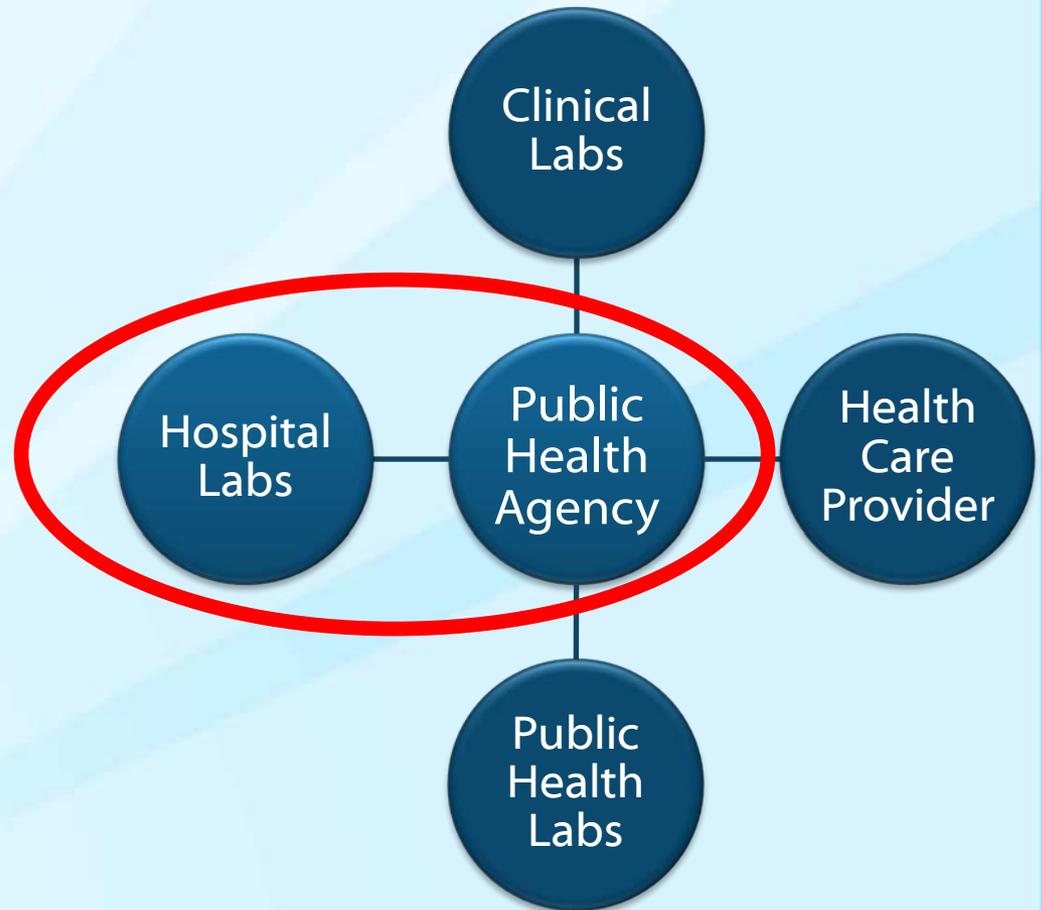
State statutes vary:

- **List of reportable/notifiable conditions**
- **Time line for required reporting**
- **Fax/phone/mail/electronic/structured**



What is ELR for Meaningful Use?

Submission of electronic data on reportable lab results to PH agencies or meaningful use reportable lab results





How is CDC Supporting ELR?

❑ **CSTE/CDC ELR Taskforce**

- In close partnership with APHL

❑ **HITECH funding**

- Laboratory Technical Implementation Assistance for Public Health
 - 10 states being supported by APHL
- Standard and Reusable Solutions for Hospital Laboratory Submission of Reportable Lab Results to Public Health
 - 500 hospital laboratories to connect with public health agencies so they can meet meaningful use requirements through Surescripts award

CDC Websites

- ❑ **CDC PHIN Website: www.cdc.gov/phin**
- ❑ **CDC Meaningful Use: www.cdc.gov/ehrmeaningfuluse**
- ❑ **PHIN VADS: <http://phinvads.cdc.gov>**
- ❑ **PHIN MQF: <https://phinmqf.cdc.gov>**
- ❑ **NEDSS site: www.cdc.gov/nedss/**
- ❑ **IIS site: www.cdc.gov/vaccines/programs/iis**
- ❑ **ISDS site: <http://syndromic.org/projects/meaningful-use>**
- ❑ **BioSense Program Redesign: <http://biosenseredesign.org>**

Your Challenge During This Session

- ❑ **Think of one way you could use this information in your current work**
 - What resource could be useful to you?
 - Why is PHIN important?
 - How can you make PHIN work for you?
- ❑ **Jot down your thoughts**

