The Public Health Information Network: Making It Work

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Public Health Information Network

• Public health involves many organizations working together and exchanging information

• Current information exchange is frequently stovepiped by function and/or organization, is too slow, too inconsistent, and too manual

• The U.S. healthcare system, due to fragmented and heterogeneous technologies, does not readily share consistent data with public health

• The new realities of terrorism and naturally occurring disease trends require a new level of operation
Public Health Information Network

- Early Event Detection
  - BioSense
- Outbreak Management
  - Outbreak Management System, lab result reporting
- Surveillance
  - NEDSS
- Secure Communications
  - Epi-X
- Analysis & Interpretation
  - BioIntelligence
  - analytic technology
- Information Dissemination & KM
  - CDC Website
  - Health alerting
- PH Response
  - Countermeasure administration; isolation, vaccine, prophylaxis

Federal Health Architecture, NHII & Consolidated Health Informatics
Public Health Information Network - Process

1. Document **functional requirements** to support public health professionals (starting with preparedness)

2. Identify relevant **industry standards** - technical and data

3. Develop **specifications** based on the standards that are concrete enough to do work and can be tested

4. Make **systems available** to support these functions and that use these standards - now

5. Develop **“software elements”** to be used in different systems that implement the standards

6. **Fund** through the functions, standards and specifications

7. Support **certification** of the functions and specifications
1. Document **functional requirements** to support public health professionals (starting with preparedness)

- Change from “if you build systems – use these standards” to “you need to have systems that do these specific things”
- Documented functional requirements – starting with preparedness
- Preparedness areas include: early detection, outbreak management, countermeasure administration, secure communications and alerting
2. Identify relevant industry standards - technical and data

• Data standards – HL7, LOINC, SNOMED, and other industry based standards in part identified by CHI (Consolidated Health Informatics now a part of Federal Health Architecture), NCVHS

• Technical standards – oriented to systems interoperability, but also define some technical capacities (secure bidirectional data exchange, integration brokering, common master person index, continuity of operations, etc.)
3. Develop **specifications** based on the standards that are concrete enough to do work and can be tested

- Industry standards are high level
- Need very specific detailing, derivative of the industry standard, to make things work (e.g. implementation guide, logical data model)
- Focus on data exchange – including what data to exchange (messages) and what terms to use for those data (terminology)
4. Make **systems available** to support these functions and that use these standards - now

- Systems may meet all requirements, but implement standards and are available now
- BioSense, Outbreak Management System, PVS – Countermeasure Administration, Epi-X, HAN like alerting, NEDSS Base System
- Accelerate implementation – Application Service Provider (ASP) implementations, direct assistance
5. Develop “software elements” to be used in different systems that implement the standards

- Support, standards-based compatible partner and commercial system development
- Modular software elements that can be used in systems to support different functions
  - PHIN Messaging System – bi-directional secure data exchange – “EDI”
  - PHIN Vocabulary Services – standard reference table and formal vocabulary support
6. **Fund** through the functions, standards and specifications

- All CDC and HRSA preparedness supplemental funds (>2 billion)

- CDC director has now stipulated that all CDC grants and cooperative agreements will have language about PHIN standards adherence
7. Support certification of the functions and specifications

• Prototyped during Smallpox Vaccine Program
• Self-testing tools
• Certify:
  – Functional capabilities of systems to meet needs
  – Discrete set of testable metrics and messages
• Otherwise use identified system
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![Laboratory Response Network](image)
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