# The Public Health Information Network: Making It Work

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Centers for Disease Control and Prevention

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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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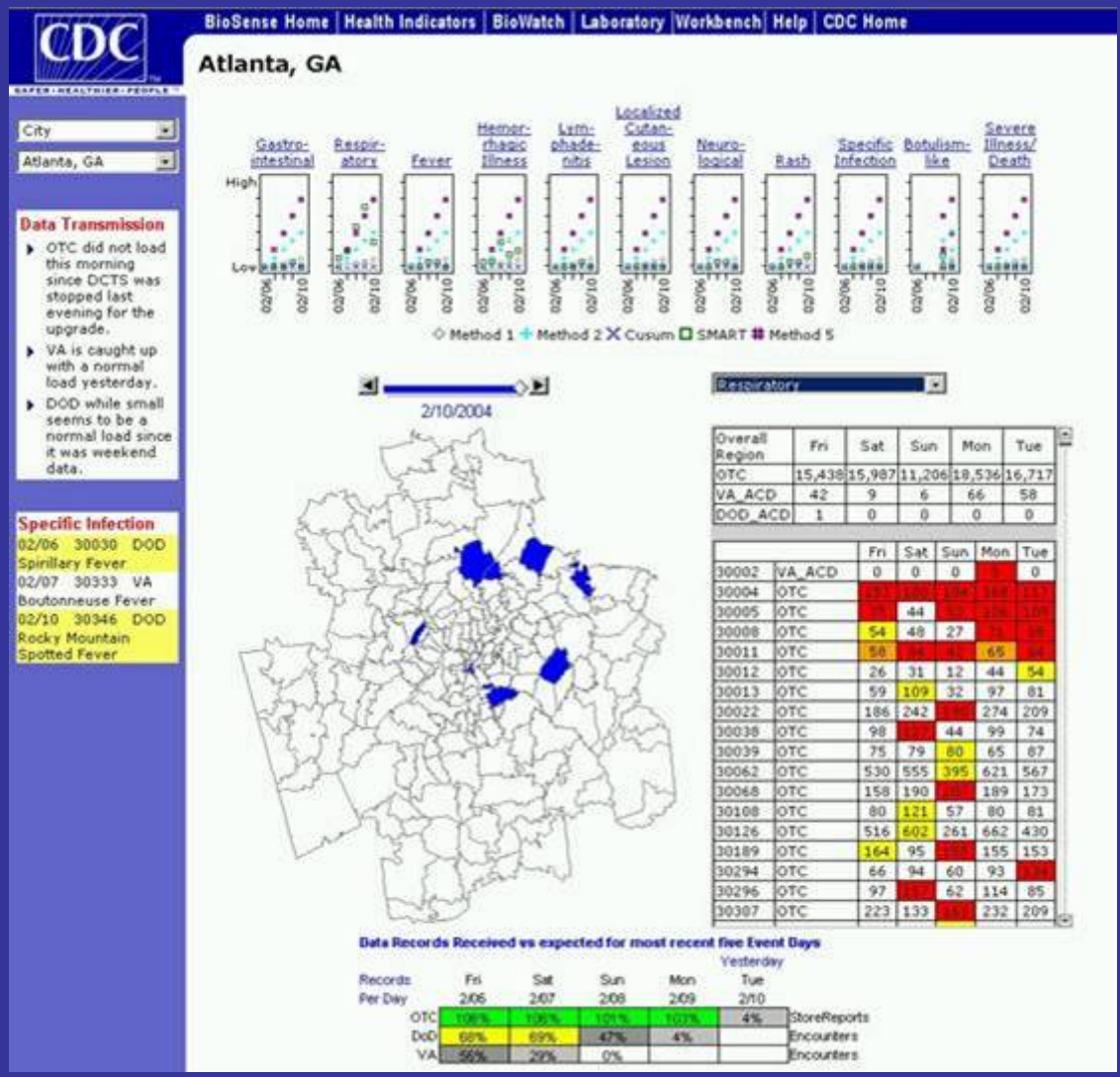

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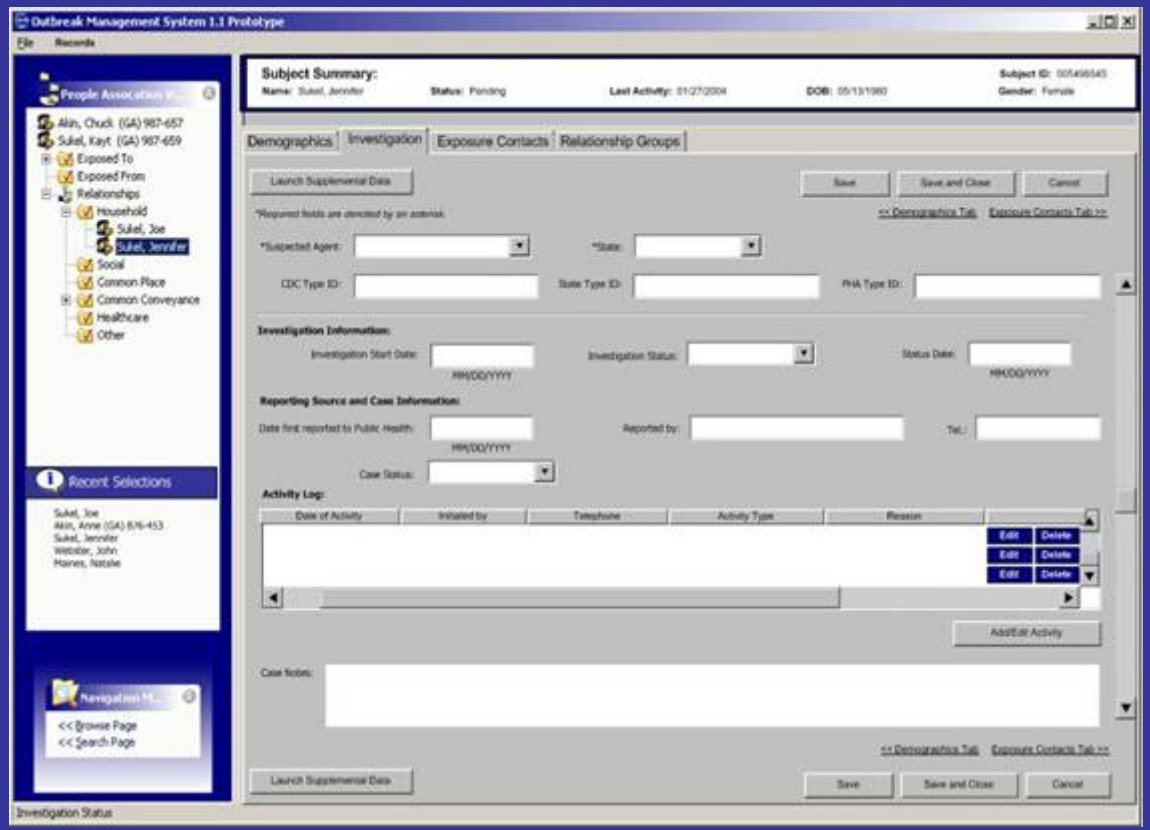

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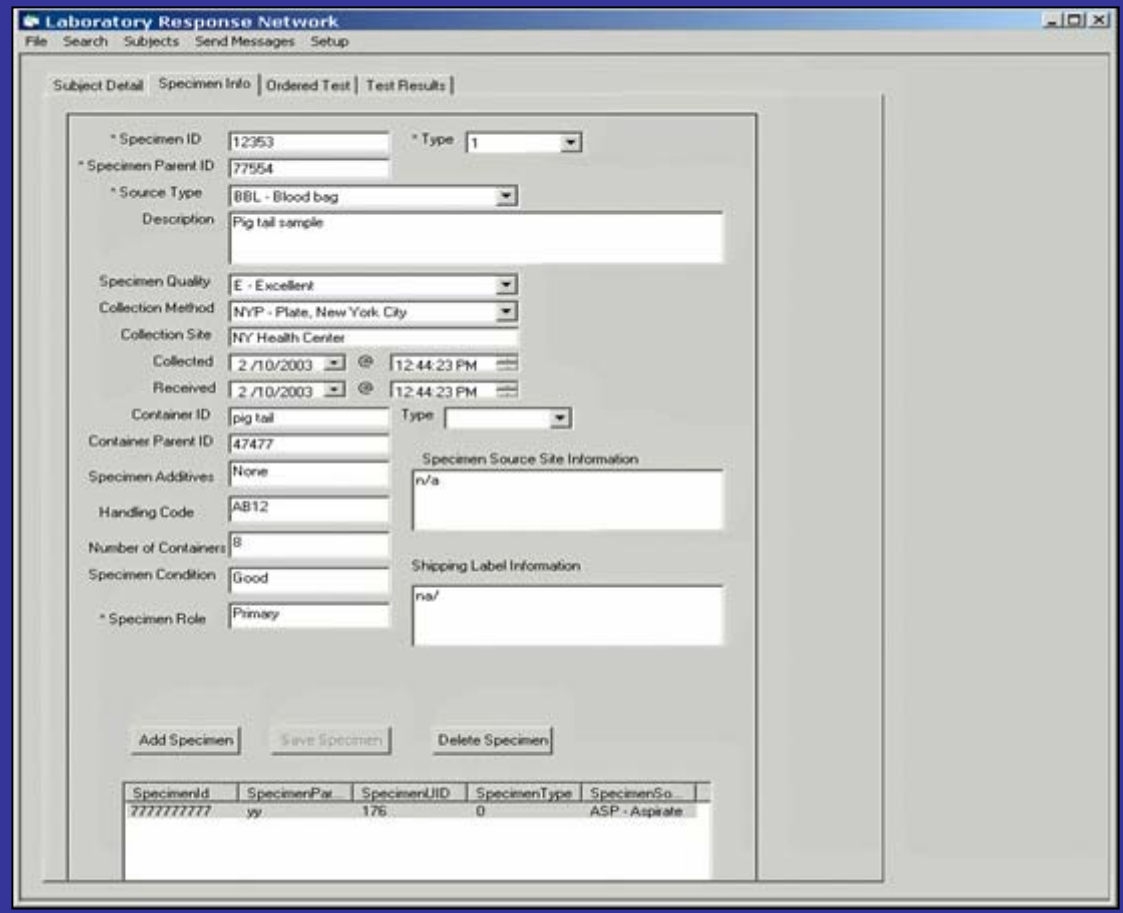

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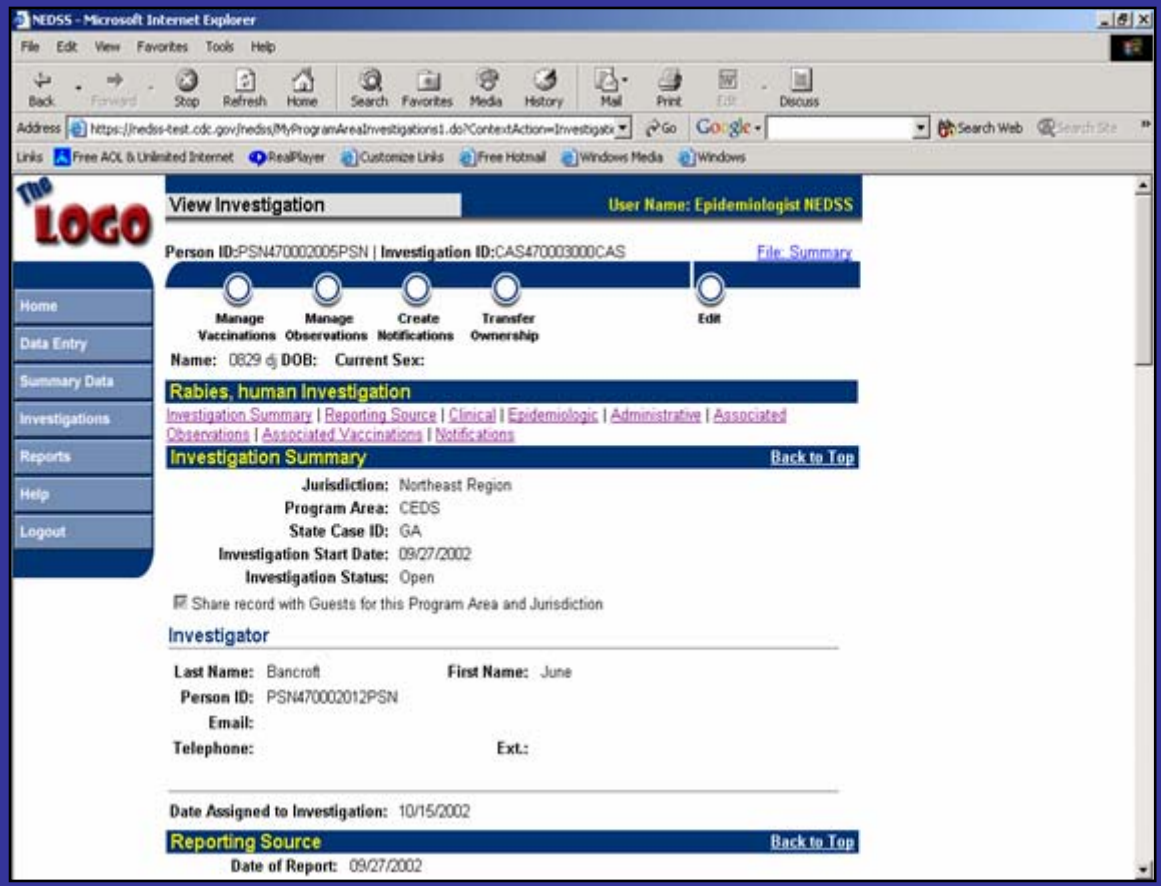

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