

The Public Health Information Network: Making It Work

John W. Loonsk, M.D.

Associate Director for Informatics
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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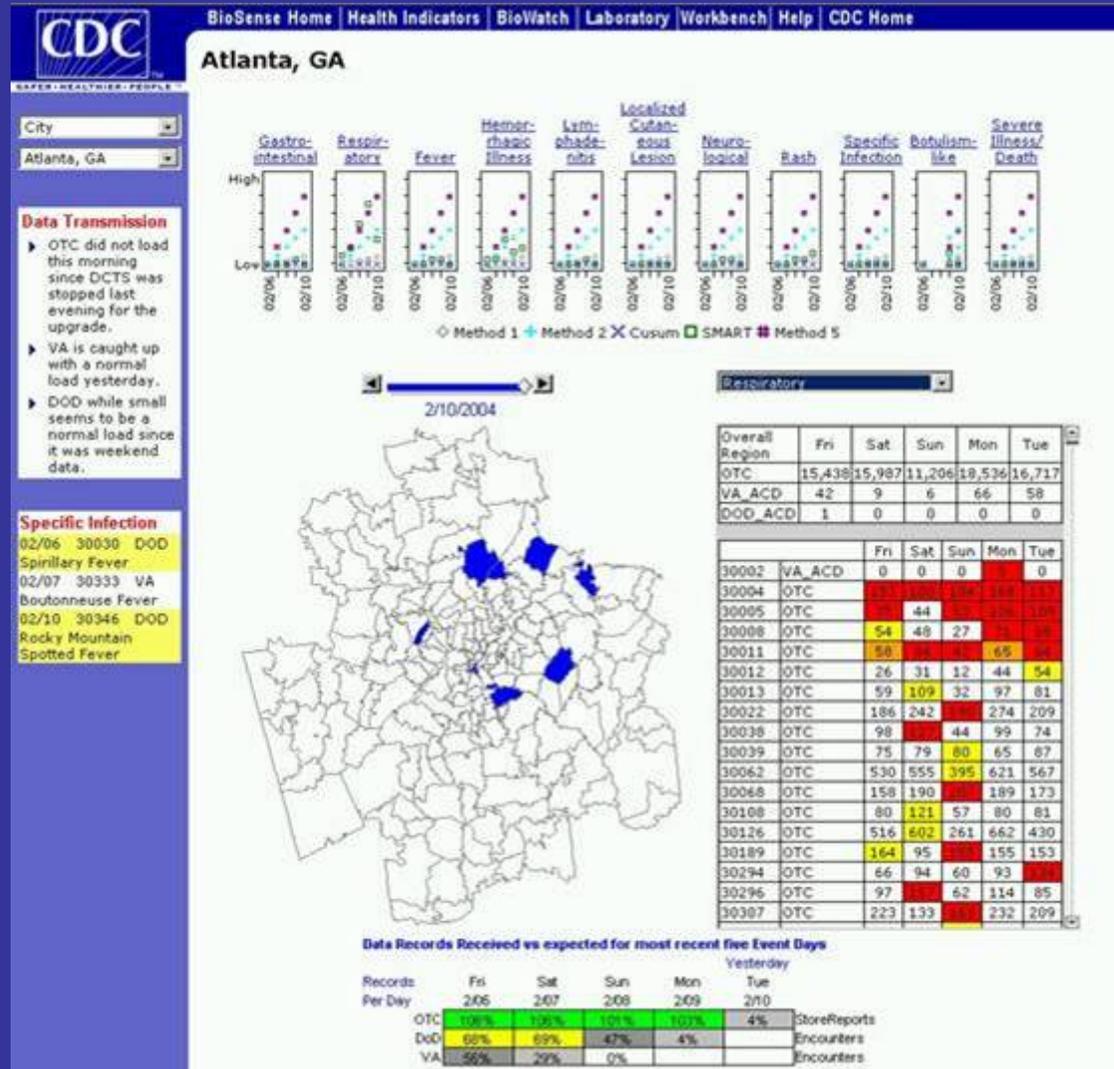
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The screenshot displays the Laboratory Response Network (LRN) web application interface. The window title is "Laboratory Response Network" and it includes a menu bar with "File", "Search", "Subjects", "Send Messages", and "Setup". The main content area is titled "Subject Detail" and contains a form for entering specimen information. The form fields include:

- * Specimen ID: 12353
- * Type: 1
- * Specimen Parent ID: 77554
- * Source Type: BBL - Blood bag
- Description: Pig tail sample
- Specimen Quality: E - Excellent
- Collection Method: NYP - Plate, New York City
- Collection Site: NY Health Center
- Collected: 2 /10/2003 @ 12:44:23 PM
- Received: 2 /10/2003 @ 12:44:23 PM
- Container ID: pig tail
- Type: [dropdown]
- Container Parent ID: 47477
- Specimen Additives: None
- Handling Code: AB12
- Number of Containers: 8
- Specimen Condition: Good
- * Specimen Role: Primary
- Specimen Source Site Information: n/a
- Shipping Label Information: n/a

At the bottom of the form, there are three buttons: "Add Specimen", "Save Specimen", and "Delete Specimen". Below the form is a table with the following data:

SpecimenId	SpecimenPar	SpecimenIID	SpecimenType	SpecimenSo
777777777	yy	176	0	ASP - Asplate

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The screenshot displays the NEDSS web application in Microsoft Internet Explorer. The browser title is 'NEDSS - Microsoft Internet Explorer'. The address bar shows the URL: <https://nedss-test.cdc.gov/nedss/MyProgramAreaInvestigations1.do?ContextAction=Investigation>. The page content includes a navigation menu on the left with options: Home, Data Entry, Summary Data, Investigations, Reports, Help, and Logout. The main content area is titled 'View Investigation' and shows the user name 'Epidemiologist NEDSS'. Below this, it displays the Person ID (PSN470002005PSN) and Investigation ID (CAS470003000CAS). A series of buttons for 'Manage Vaccinations', 'Manage Observations', 'Create Notifications', 'Transfer Ownership', and 'Edit' are visible. The investigation details include: Name: 0829 @ DOB: Current Sex: Rabies, human Investigation. A list of links for 'Investigation Summary', 'Reporting Source', 'Clinical', 'Epidemiologic', 'Administrative', 'Associated Observations', 'Associated Vaccinations', and 'Notifications' is provided. The 'Investigation Summary' section shows: Jurisdiction: Northeast Region, Program Area: CEDS, State Case ID: GA, Investigation Start Date: 09/27/2002, and Investigation Status: Open. There is a checkbox for 'Share record with Guests for this Program Area and Jurisdiction'. The 'Investigator' section shows: Last Name: Bancroft, First Name: June, Person ID: PSN470002012PSN, Email, and Telephone/Ext. fields. The 'Date Assigned to Investigation' is 10/15/2002. The 'Reporting Source' section shows: Date of Report: 09/27/2002.

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The screenshot shows the CDC website interface in Microsoft Internet Explorer. The browser title is "Centers for Disease Control and Prevention - Microsoft Internet Explorer". The address bar shows "http://www.cdc.gov". The website header includes the CDC logo, "Department of Health and Human Services", and "Centers for Disease Control and Prevention". A search bar is visible on the right. The main content area is divided into several sections:

- Health & Safety Topics:** Includes links for Birth Defects, Disabilities, Diseases & Conditions, Emergency Preparedness & Response, Environmental Health, Injury & Violence Prevention, Travelers' Health, Vaccines & Immunizations, and Workplace Safety & Health.
- Publications & Products:** Includes links for Emerging Infectious Diseases Journal, MMWR, Preventing Chronic Disease Journal, and Subscriptions.
- Data & Statistics:** Includes links for National Data, State Data, Growth Charts, and more.

Key featured articles and programs include:

- Wildfire Safety:** Wildfires present health risks to anyone in their path. Assess your risk and ... [more](#)
- Diabetes Awareness:** Prevent or control diabetes and lower the risk of complications... [more](#)
- Holiday Safety:** Parents can take important steps to keep their children safe from choking... [more](#)
- Provide feedback on CDC's new Website:** Once you've looked through the site, please take a moment to provide your feedback... [more](#)
- FDA and CDC statement concerning rumors about recalled lot of influenza vaccine:** Rumors have been circulating that a "contaminated" lot of flu vaccine has been recalled by the FDA... [more](#)
- West Nile Virus - Fight the Bite!** Mosquitoes are still biting. West Nile virus infection can still happen during October... [more](#)
- Carbon Monoxide - Protect your family:** Take steps to protect your family from the unseen danger of carbon monoxide... [more](#)
- Severe Acute Respiratory Syndrome (SARS):** (English | en Español) The latest information about the disease... [more](#)
- Health, United States 2003: Trends in the health of Americans:** This is an annual report on national trends in health statistics. This year's report includes a highlights section... [more](#)

Additional sections include "Programs & Campaigns" (Screen for Life, National Colorectal Cancer Action Campaign, VERB™ - Extra Hour for Action) and "Conferences & Events" (Preparing for Environmental Challenges, Investing in Health).

The footer contains navigation links (Home, Privacy Policy, Disclaimer, Accessibility, FOIA, Information Quality, Contact Us), the slogan "SAFER • HEALTHIER • PEOPLE™", contact information for the CDC, and logos for "FIRST GOV" and the "Department of Health and Human Services".

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The screenshot shows a web browser window titled "Patient Vaccination - Microsoft Internet Explorer". The address bar shows a URL from the CDC's internal systems. The page header includes the CDC logo and the text "Information Resources Management Office Pre-Event Vaccination System".

The main content area is titled "Patient Vaccination" and includes a note: "The asterisk (*) denotes a required field." The form contains the following fields:

- *Vaccine Type: Smallpox (dropdown)
- *Organization: Douglas County Health Department (dropdown)
- *Batch: 9 : 4020077 : Feb 9 2003 3:30PM (dropdown)
- *Referring Organization: Avera St. Anthony's Hospital (dropdown)
- *PVN: PVN1000000000 (text input)
- *Vaccination Date: 02/27/2003 (text input)
- *Administered By: Dorraine Reynolds (dropdown)
- Consent To Photograph:
- Consent To Survey:
- Take Response Location: -Select- (dropdown)
- Exam Date: (text input) (mm/dd/yyyy)
- Examiner: -Select- (dropdown)
- Take Response: Major, Equivocal, No Take
- Adverse Events: (text area)

The left sidebar contains a menu with the following sections:

- Activities**
 - Add Organization
 - Search Organizations
 - Add Program Staff
 - Search Program Staff
 - Add Patient
 - Search Patients
 - Add Vaccine Batch
 - Search Vaccine Batches
 - Add PVS User
 - Search PVS Users
 - Upload Vaccination Data
 - Help
 - Logout
- Forms**
 - Patient Medical History Form
 - Take Response Form
- Reports**
 - Clinic Daily Activity Reports

At the bottom of the sidebar, it says "Release 1.1.2.2".