

Critical Success Factors for PHIN-Compliant NEDSS Solutions

*2nd Annual Public Health Information Network
Stakeholders' Conference
May 27, 2004*

*Melissa Stevens, MPH
Utah Department of Health*

*Nancy McQuillen
California Department of Health Services*

*Craig Cunningham
Information Technology International*

Utah NEDSS Initiative: SERPH

Utah's PHIN/NEDSS-compliant solution:

- The SERPH (Surveillance and Epidemiologic Response for Public Health) system

Utah: SERPH System

Goals of developing a PHIN/NEDSS-compliant system in Utah

- Ensure emphasis on meeting local and state needs
- Establish unified disease management approach
- Implement an enterprise solution for surveillance

Utah: SERPH System

Challenges of building an enterprise solution in Utah

- Political and functional challenges related to the structure and relationship of state and local health departments
- “Embracing change”, i.e. the necessity of flexibility in a surveillance system
- Identifying and accommodating various data sources, systems, and users

Utah: SERPH system

Success to date

- Rolling out West Nile virus module that will integrate data for humans, horses, birds, and mosquitoes
- Next will roll out module to collect data for select diseases (representing categories of diseases), including hepatitis A, chlamydia, tuberculosis, and SARS.

California NEDSS Initiative: WebCMR System

The Current Landscape of California Disease Surveillance

- 61 local health departments (LHDs); plus some regions, e.g. for CA STD program
- California LHDs range from small, rural, and manual -- to huge, urban and automated
- Diverse set of needs in jurisdictions and programs; diverse priorities.
- A plethora of various home-grown and commercial disease surveillance and reporting systems

The WebCMR system provides a new opportunity for a centralized, State-wide view of California disease cases and patterns. Several stakeholder groups, including both direct users and management levels, benefit from this statewide data management approach.

California Web-CMR

System Framework

Disease Plans (dynamic: data collection, workflow management, & planning)

Web-CMR Portal

- Provider Registration
- Extended CMR Submission
- Custom portal content
- Submission follow-up
- Security planning
- Jurisdiction
- Case Definition
- Custom Brand
- Facilities & Provider Mgmt.

Public Health Surveillance Management

- Episode Management
- Investigation Management
- Case Management
- Contact Management
- Outbreak Management
- Analysis & Visual
- Knowledgebase
- Reporting
- Administration
- Branding & Usability

Stakeholder Interaction

Registries

Routing – Access

Alert Notification

Message Transport

Standards & Coding

Legacy Migration

Security, Policy, & Procedure

PH Directory

Policy & Procedure Design and Implementation

Two Factor Security

WebCMR Beneficiaries

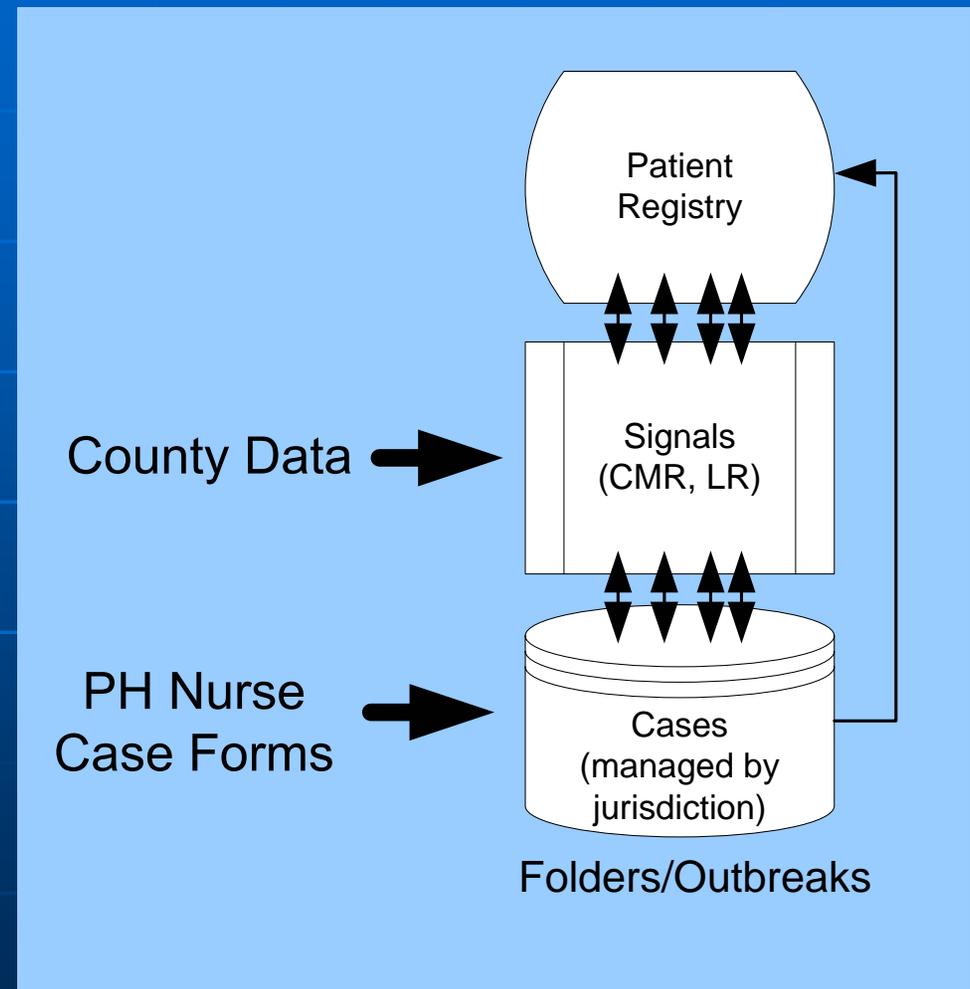
- Direct Users - LHD and State
 - CMR Tracking, Reporting (to State/CDC)
 - Case Managers (Nurses/Investigators)
 - Epidemiologists
 - Disease Program Specialists
 - System Administrators
- Direct Users – Clinicians
 - Physicians
 - Physician/Lab Staff
- Management Level Stakeholders
 - Local Health Officers
 - Communicable Disease Controllers
 - Data Managers, IT Managers

LHD User Benefits

- **CMR trackers/reporters:** Ability to accept/transfer incoming CMRs to other LHDs, view data of surrounding jurisdictions, and review/coordinate data reported to State
- **PH nurses/Investigators:** Increase case management productivity (help track case detail; data entry aids; workflow and task monitoring aids).
- **EPIs:** Observe patterns (disease occurrences, outbreaks) trends, baselines, anomaly detection.
- **Disease Program staff:** Customize data points, forms, and surveys for particular disease areas. Track co-morbidities.

Patient Registry Benefits

- Enables: location of persons, contacts, addresses, etc.
- Identify and merge duplications.
- Maintain current addresses.
- Provide access (where authorized) and locate cases in other jurisdictions, LHDs/programs.



State Benefits

- Expedite and streamline the reporting to the CDC.
- Minimize the plethora of formats: Data conversion, exchange efforts.
- Programs: Identify co-morbidity more expediently through the use of common data collection and sharing.
- Establish workflow by disease/area.
- Quickly locate persons, contacts, addresses, etc. via the patient registry (this benefit also available to LHD and program users of WebCMR).
- Manage outbreaks and emerging diseases within hours.
- Dynamic capability to modify disease plans and survey forms.

Physician Benefits

- Report CMR information for any CA LHD to a single site, by using web-based entry, single sign-on, single application
- Unique Web-entry form used in support of collecting common CMR information
- Web application will serve as future “information portal” for providers, to:
 - View summary morbidity data
 - Access related links, alerts, supporting information
 - View progress of lab tests, case confirmations

Standards as the “Glue” between California Systems

- The ever-present vicious temptation: to build peer-to-peer interfaces instead of forcing standards completion, standards training, standards implementation, and on-going standards conformance testing.
- Peer-to-peer interfaces (unique interfaces between two specific systems) seem easier and quicker in the short term, but would result in massive costs and lack of California-wide interoperability over the long term.

Three Critical Data Standards

- Multiple stored identifiers (per entity and act), exchanged as key links between disparate systems (ids for people, events/cases, etc.)
- Multiple types of “subjects” of investigations, i.e. persons, places, animals – enabling environmental applications and bioterrorism event handling
- Use of coordinated OIDs – for code system identification, but also as “qualifiers” on each id (i.e. “assigning facilities”, to indicate “whose” identifier is attached to a person or an event)
- . . . Plus many additional aspects of the RIM data model that lend flexibility

WebCMR Software foundation: ITI PHS³*

- Allows for dynamic creation and modification of observation sets, forms and surveys
 - Enables broader base of data collection specifically for the LHD
 - Provides ability to respond to ad-hoc data collection during an investigation
- Enables emerging disease response
 - Creation of new condition plan
 - Data collection, analysis, reporting and case management
 - Allows quick modification to forms, surveys and tasking as patterns are established
- Dynamic work folders provide access to essential data and information based on role and security permissions – ensuring the right information, to the right user, at the right time

(* Information Technology International: Public Health - Sentinel Surveillance Solutions
A NEDSS solution for state and local public health)

California Web-CMR

System Framework

Disease Plans (dynamic: data collection, workflow management, & planning)

Web-CMR Portal

- Provider Registration
- Extended CMR Submission
- Custom portal content
- Submission follow-up
- Security planning
- Jurisdiction
- Case Definition
- Custom Brand
- Facilities & Provider Mgmt.

Public Health Surveillance Management

- Episode Management
- Investigation Management
- Case Management
- Contact Management
- Outbreak Management
- Analysis & Visual
- Knowledgebase
- Reporting
- Administration
- Branding & Usability

Stakeholder Interaction

Registries

Routing – Access

Alert Notification

Message Transport

Standards & Coding

Legacy Migration

Security, Policy, & Procedure

PH Directory

Policy & Procedure Design and Implementation

Two Factor Security

Questions?

Melissa Stevens, MPH
Communicable Disease Program Manager
Utah Department of Health
melissastevens@utah.gov

Nancy McQuillen
PHIN Data Architect
California Department of Health Services
nmcquill@dhs.ca.gov

Craig Cunningham
Chief Operations Officer
Information Technology International
ccunningham@itiweb.com