Connecting for Biosurveillance: Essential BioSense Implementation Concepts

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Essential BioSense

BioSense Real-time Vision

• Early Event Detection

• Situational Awareness
  Help confirm or refute the existence of an event
  Monitor its size, location, and rate of spread
  Assess control efforts
BioSense Real-time Approach

- Real-time delivery of data related to illness syndromes, clinical severity, confirmed clinical findings from hospitals to BioSense

- Electronic “views,” analytics, and reports for national, state, and local public health, hospital, healthcare epidemiologists, other clinicians.
Cities with Hospitals in BioSense Implementation

- Atlanta, GA
- Baltimore, MD
- Boston, MA
- Chicago, IL
- Columbus, OH
- Dallas, TX
- Denver, CO
- El Paso, TX
- Indianapolis, IN
- Las Vegas, NV
- Los Angeles, CA
- Miami, FL
- Milwaukee, WI
- Philadelphia, PA
- Phoenix, AZ
- Portland, OR
- San Diego, CA
- St. Louis, MO
- Washington D.C.
BioSense Implementation Timeline

Dec’05
10 cities – 32 initial hospitals
Foundation → Clinical and Lab → Pharmacy, Rad

Apr’06
9 cities – 45 hospitals
Foundation → Clinical and Lab → Pharmacy, Rad

Aug’06
20+ additional cities – goal 350 hospitals
Foundation → Clinical and Lab

Dec’06

Data Types
Foundational: demographics, chief complaint, DC diagnosis, disposition, utilization
Clinical: vitals, triage notes, working diagnosis, discharge summary
Laboratory: orders, microbiology results
Pharmacy: medication orders
Radiology: orders, interpretation/results
Essential BioSense

BioSense Real-time

Topics for discussion

Jurisdictional-specific flexible public health application

Protects patient privacy

Captures only existing health data

Building a national system

Requires Rigorous Evaluation
Enables Public Health Access to Jurisdiction-Specific Information

- Many local public health agencies lack resources, desire to develop local biosurveillance system
- BioSense provides simultaneous access of health data by all levels of public health

Any reach back to hospitals for further public health investigation or intervention remains local
Captures Health Existing Data

- No data collection; unlikely to be done during health emergency

Using existing data for public health purposes provides a window on community health status
Protects Patient Privacy

Data sharing agreement signed with hospitals, detailing CDC / public health use and responsibilities

- Attaining 308D Assurance of Confidentiality, the highest federal protection
- HIPAA protections against further sharing outside of domain of public health

Obvious patient identifiers excluded; data anonymized prior to transmission

- Re-linking BioSense identifier only occurs at local public health level when situation necessitates
A National System is Preferable

• A national system means broader data availability possible by combining local and national sources
• BioSense focus on large national commercial laboratories, providing services to patients in multiple jurisdictions
• Developing analysis of national poison control center data in collaboration with AAPCC
• Begins the critical task of standardizing codes and increasing IT interoperability across systems

A step in the right direction for establishing a foundation for electronic reporting/EHR
Advances Local Public–Private Partnerships

- CDC BioSense analytics and surveillance reports available to hospital / health system
- Participation can support interoperability with local public health, advance development of electronic health record activities

Key aim: Reduce burden of clinical data collection by public health during the early investigation
Requires Rigorous Evaluation

- Independent assessment of system architecture and technical approach to begin May (Gartner Group)
- Analysis plan in development for all data types, algorithm application (assistance by Johns Hopkins APL)
- Engaging Centers of Excellence in Public Health Informatics to focus efforts
- CDC to award cooperative agreement for key evaluation aspects including
  - Usability
  - Data validity
  - Usefulness / utility
Further Development Requires User and Expert Input

• Initial users (local and state public health, participating hospitals) to participate in ongoing meetings/dialogue with CDC during 2006 – Atlanta May 23- 24

• Science / expert advisors needed to provide input – To be invited to Atlanta late this summer

• Plan for working with public policy groups / privacy advocates in development
Summary of Key Principles

- Sharing, sharing, sharing – what can / should public health do with already existing clinical, community health data
- Local public health remains lead for interventions, further investigation
- Patient privacy critical
- Using PHIN standards for vocabulary, messaging, and security

Progression from sentinel hospital approach to wide-spread implementation based on demonstrated program success
Public Good

• Truth: our current biosurveillance system today is not sufficiently sophisticated to meet the demands of pandemic influenza or other PH catastrophes

• BioSense will:
  • Empower health departments with advanced data collection, analysis, and visualization tools
  Improve our national public health capacity
  Increase electronic health communication
  Enable more efficient solutions
BioSense Implementation Status

• Since 2003, BioSense receiving and analyzing VA, DoD ambulatory care and lab order data
  ? VA & DoD - Develop plan for transmission of data in real-time
  ? Large commercial labs - orders and results

• Real-time data currently received data from 10 cities, representing 9 hospital systems, total 32 hospitals
  ? Minimum of 21 additional cities
  ? Goal is 350 hospitals for enhanced pandemic flu preparedness by end of 2006
  ? Addition of data from associated ambulatory care sites
Hospital Recruitment, 2005-2006

Initial hospital selection based on:
• Large metropolitan area
• High-volume ED
• Health systems with multiple hospitals
• Existing hospital IT (i.e. ED system)
• Timeliness of data
• Support of local public health
• Existing data/reporting relationships with CDC
Steps to Participating in BioSense

Hospital Recruitment to Implementation

• In coordination with state/local public health, meet with hospital leadership to secure commitment
• Negotiate data sharing agreement
• Assess current data and systems; develop project scope
• Perform detailed IT technical assessment; finalize statement of work and funding agreement
• Implement hospital data transformation and standardization infrastructure (HL7, vocabulary mappings)
• Enable secure, reliable data transmission (PHINms)
• Perform testing and ongoing support