

Integrated Outbreak Management



PUBLIC HEALTH INFORMATION NETWORK

Second Annual Conference
www.cdc.gov/phin

May 25th, 2004



SAFER • HEALTHIER • PEOPLE™



Outbreak Information

- Currently an ad-hoc collection of:
 - Processes
 - Legacy Systems
 - Unstructured electronic information ie. spreadsheets, access databases
 - Paper
- Consequences of current state
 - Aggregation from multiple sources difficult and time consuming
 - Analysis difficult and time consuming
 - Poor data integrity
 - Real-time analysis and decision support impossible



SAFER • HEALTHIER • PEOPLE™



Outbreak Information

- Wouldn't it be nice if:
 - Standard case reports could be created from investigation data sets
 - Lab data could be easily linked to associated cases, contacts, environmental subjects
 - Maps could be created with a few mouse clicks
 - Data could be exchanged between partners with a minimum of mapping at time of need
 - Information on exposure contacts could be sent to clinics for treatment
 - All partners shared directory information and content standards for alerting



SAFER • HEALTHIER • PEOPLE™



Gathering Requirements

- Map out high level processes for outbreak investigation and management
- Categorize functional information groupings
- Determine overlap in information for different functions
- Identify sources of information that facilitate outbreak detection and containment
- Map information flows between functional areas
- Map functional groupings to existing or new systems
- Explore policy and procedures to support automated information sharing



SAFER • HEALTHIER • PEOPLE™



Outbreak Functions

- Laboratory
 - Specimen collection
 - Test order
 - Results
- Epidemiologic Investigation
 - Case determination
 - Exposure risk determination
- Countermeasures
 - Vaccine/drug administration
 - Follow up
 - Adverse events
- Contact management/containment
 - Follow up
 - Quarantine tracking
 - Interventions
- Case reporting
- Early detection
- Incident Management

**Outbreak Management
System Functions**



SAFER • HEALTHIER • PEOPLE™



Outbreak Functions

- Laboratory
 - Specimen collection
 - Test order
 - Results
- Epidemiologic Investigation
 - Case determination
 - Exposure risk determination
- Countermeasures
 - Vaccine/drug administration
 - Follow up
 - Adverse events
- Contact management/containment
 - Follow up
 - Quarantine tracking
 - Interventions
- Case reporting
- Early detection
- Incident Management

Outbreak Management
System Data Inputs



SAFER • HEALTHIER • PEOPLE™



Outbreak Functions

- Laboratory
 - Specimen collection
 - Test order
 - Results
- Epidemiologic Investigation
 - Case determination
 - Exposure risk determination
- Countermeasures
 - Vaccine/drug administration
 - Follow up
 - Adverse events
- Contact management/containment
 - Follow up
 - Quarantine tracking
 - Interventions
- Case reporting
- Early detection
- Incident Management

Outbreak Management
System Data Output



SAFER • HEALTHIER • PEOPLE™



Framework for Discussion

- Consider functions and requirements
 - Functions and requirements gathered from Lifecycle discussion
- Break out sessions
 - **Data sources** – what are the sources of data for outbreaks and how are the data used
 - **Information flows** – what are the data and communication flows between functional areas
 - **Processes** – what are the processes that map to system function and information flows
 - **Systems** - what are the existing or possible systems that encapsulate functions for a given area



SAFER • HEALTHIER • PEOPLE™



Topics for Discussion

- Data Sources
 - Early Detection
 - Clinical observations
 - Laboratory results from public and private sector
 - Physician reports from public and private sector
 - Contact tracing data
 - Vaccination and prophylaxis data
 - Medical record data



SAFER • HEALTHIER • PEOPLE™



Topics for Discussion

- Information flow
 - Communication between lab and investigation systems
 - Communication between early detection and investigation systems
 - How does information flow between city, regional, state and national health entities
 - What is the flow for case reporting
 - Information flow between investigators(epi) and contact tracing personnel
 - What is the information flow between outbreak management investigations and incident management
 - What are the policies governing information flow



SAFER • HEALTHIER • PEOPLE™



Topics for Discussion

- Processes
 - What process is followed to declare and outbreak
 - What is the process for assembling investigation team
 - What is the processes for large scale distribution of treatments
 - What is the process involved with contact follow up and quarantine
 - What process is in place for notifications and alerts



SAFER • HEALTHIER • PEOPLE™



Topics for Discussion

- Systems
 - What functional systems should be available for outbreak investigation and management
 - What systems do you have in place now
 - Are your systems sufficient for outbreak management
 - Are your systems integrated
 - If you don't have systems, how would you manage an outbreak



SAFER • HEALTHIER • PEOPLE™

