An ISDS-Based Initiative for Conventions for Biosurveillance Data Analysis Methods:

Public Health Department Perspective

2012 Conference of the International Society for Disease Surveillance

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Typical LHD Syndromic Resources

- Short staffed
- Limited funds for IT projects
- Limited analytical capabilities
- Varying IT competencies
- Differing data sets and data formats
- Differing syndromic systems
- Etc...
BIOSURVEILLANCE

DATA

INFORMATION

KNOWLEDGE

SITUATIONAL AWARENESS

DECISION SUPPORT
BIOSURVEILLANCE

DATA

INFORMATION

KNOWLEDGE

Variability

- Data formats
- Analytic methods
- Dealing with noise
- Characterization limits
- Automation capability
- Differing standards

SITUATIONAL AWARENESS

DECISION SUPPORT
Response to Detected Anomalies

- Detection Method
- Syndrome group
- % Admitted
- Deaths?
- Geographic cluster?
- Prior day’s level?
- Recent level?
- Age groups?
- Severe syndrome?
- Detections in other data sources?
- Other epidemiological intelligence?
- Other diagnostic information

Public Health Response
- Action
  or
- No Action
  or
- Watch
USE CASE #1  - Local Health Dept

The Situation
• Recent increases
  • 911 calls, transports, and EDs.
• No clear explanation
• Concern about continuing pattern and possible impact on the regional health care system and capacity.

The Need
• Data driven actionable information
• Leverage additional descriptive, univariate and multivariate analysis methods
• Develop forecasting or use of indicators for future triggers
USE CASE #2 - Local Health Dept

The Situation
• Sporadic anomalies coinciding with rumors of non-specific community health impact
• No systematic way of drilling deeper than general person, place, time characteristics
• Hypotheses to test “when there is time and resources”

The Need
• Actionable information
• Rapid niche based analytics
• Standards to enable cross region/state comparisons
• Results which are automated and data driven
**Example Worksheet for Use Case #1**

### Problem Description

- A rapid data driven response and policy is needed to counter escalating impact on the region’s healthcare system.

### Input Data – what’s available

- Emergency Department data, 911, pre-hospital transports – typical fields
- Frequency of analysis – daily
- Baseline data: 5 years

### Output information – what’s desired

- “Level 2” characterization and niche based analytics
- Multivariate analysis and statistical models
- Identification of several hypotheses to test for fast results (not weeks or months)
- Simulated outcome ranges
- Probability assignments
- Forecasting

### Requirements

- A rapid data driven response
- Rapid deployment in existing environment
Biosurveillance

Problem/Need

Complete and forward Conventions Worksheet

Data Set?

Conventions Committee

Potential solutions

Public Health Agency

Surveillance Community (ISDS)

Conventions Community
What can heath departments do to support this Panel’s Goal?

• Embrace the vision
• Collaborate and contribute
• Provide Use Cases
• Consider providing a data set into a sandbox
• Become solution oriented
• Share collaborative success stories