

SYNDROMIC SURVEILLANCE IN SOUTHERN CALIFORNIA

FROM DATA SOURCES TO EVENT DETECTION: The Southern California Regional Surveillance Summit

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Introduction

Nearly 25 million people reside in Southern California. This region consists of many County and City Health Departments (LHDs), some serving a population greater than that of many U.S. states.

Many of the LHDs are in varying stages of syndromic surveillance exploration and development. Although a few LHDs have participated in national syndromic surveillance efforts and are far along in their efforts, many LHDs are just beginning to engage in these activities. The Southern California Regional Surveillance Summit provided the opportunity to exchange information about syndromic surveillance efforts across Southern California.

Summit Background

- Date: June 16th, 2003 Location: Escondido, CA
- Sponsored by San Diego County using BT preparedness funds
- Purpose: To provide a forum for regional health departments to actively exchange ideas and best practices in public health bioterrorism surveillance with the purpose of improving public health preparedness.
- Participants: LHD professionals engaged in syndromic surveillance efforts
- Format: Presentations from selected counties and roundtable breakout discussion groups

Participants

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| Imperial County | Santa Clara County |
| Kern County | San Diego County |
| City of Long Beach | San Francisco County |
| Los Angeles County | San Joaquin County |
| Orange County | San Mateo County |
| Riverside County | Ventura County |
| Sacramento County | California Department of Health Services |
| Santa Barbara County | Center for Disease Control |
| San Bernardino County | and Prevention (CDC) |



Selected County Presentations



Roundtable Discussions

Purpose: To identify promising practices and promote the active exchange of information and ideas as it relates each session.
Objective: Based upon past, current or future experiences, identify data sources, characteristics, and methods that appear most promising.

Data Sources and Collection Methods

- Data sources were ranked 1-4 (1 being highest) based upon completeness, timeliness, accuracy and public health relevance. The following are examples of data sources by rank:
 - 1 - emergency department, 911 call center, paramedic data,
 - 2 - coroner, absenteeism, nurse call centers,
 - 3 - OTC medications, animal health
 - 4 - laboratory results
- Collection methods ranges from paper tally sheets, email files, web data bases, FTP "drop boxes",
- No LHD indicated current automated data mining efforts with external LHD data sources

Aberration Detection Algorithms

- Statistical methods LHDs are using including: CUSUM, P&U Charts, EWMA, regression
- Various software packages: SAS, SPSS, Minitab, TRENDS (SPSS), SatScan,
- Analysis syntax (SAS, SPSS, Minitab) development process may prove useful in understanding the data characteristics.
- Although not used in most LHDs, automated analyses can reduce time and free up resources
- LHDs are interested in a few key sets of syntax shared regionally.
- Algorithms must take into account data source nuances

Model Syndromic Surveillance Systems and Information Technology Interfaces

- Most California LHDs are in the early stages of exploring and developing syndromic surveillance systems
- Most of the developing systems are chief complaint based
- The range of syndromic surveillance efforts includes syndrome tally sheets, event based efforts, automated analysis
- Five aspects to important when considering a new system: flexibility, redundancy, simplicity, automation, multi-use
- Customized commercial systems can be expensive
- Potential regional collaboration exists

Evaluating Signals and Alarms

- Evaluating signals can be time consuming
- When signals occur in multiple jurisdictions, sharing of information is critical and the state DHS can be a source of central dissemination of information.
- Useful approaches to evaluating signals: 3 Standard deviations,
- Where possible, additional patient diagnosis information is useful
- Temporal/Seasonal adjustments may be needed
- Need to compare current signal to historical signals
- Some surveillance approaches can be too sensitive
- "Analysis should not be allowed to consume resources if nothing can be done" *WH Foegen*
- In a real outbreak situation, surge capacity may limit full evaluation of alarms

Summary Results

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| <ul style="list-style-type: none"> • Very few counties have established a syndromic surveillance system • Most jurisdictions lack the expertise and resources to do automated aberration detection • Resources are limited (staff, software, IT support, etc) • Difficulty accessing the data; personal ties with reporting agencies are highly encouraged • Strong support for regional collaboration and use of standard methods and protocols | <ul style="list-style-type: none"> • Automatic data mining will reduce time and may improve quality • Hospitals are very sensitive to impact of extra surveillance work • Need multiple systems to improve specificity • There is no replacement for astute clinicians who report suspicious disease • This Summit provided an excellent exchange of information and lessons learned |
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Future Direction

- Future opportunities for regional collaboration will be explored.
- Best practices will continue to be shared across LHDs
- Regional training opportunities will be encouraged
- State DHS may play an active role in building and supporting collaboration