Beneficial Practices for Improving Biosurveillance

Prioritizing Your Surveillance Enhancements

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Webinar Hosts

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Webinar Hosts

- James Buehler, MD
  Professor, Health Management and Policy, Drexel University School of Public Health, Philadelphia, PA
NCPERRC Research on Surveillance

- 2013 research project with Public Health Informatics Institute to:
  - Identify guiding principles and best practices
  - Provide recommendations for surveillance system improvement
What did we learn?

- Information systems used during event should be used every day
- Relationships leading to data sharing should be nurtured well in advance of event

- **Continued investment in systems and staff needed to assure that systems are prepared**
Translating Research into Practice

Series of 4 webinars presented by:

- North Carolina Preparedness and Emergency Response Research Center (NCPERRC) at UNC-Chapel Hill
- Supported by Centers for Disease Control and Prevention, Office of Public Health Preparedness and Response
First 3 Webinars: Mass Gatherings, Natural Disasters, Outbreaks

_Some Common Themes_

- Information systems adapted to current event needs
- Planning and exercises with partners ahead of time
- Prominent role of syndromic surveillance
- Rapid, two-way communication with health providers
- Continued investments in systems/staff
Today’s guests

Perry Smith, MD
Research Professor, State University of New York at Albany, former New York State Epidemiologist

Chesley Richards, MD, MPH, FACP
Deputy Director for Public Health Scientific Services; Director, Office of Public Health Scientific Services, U.S. Centers for Disease Control and Prevention
Agenda for webinar

- **Case study** - Costs of enhancing surveillance systems in New York State - Dr. Smith
- **CDC Strategic Priorities for Enhancing US Surveillance Systems** - Dr. Richards
- **Your Questions**
  - Use question box to enter questions at any time
- **Additional information & resources**
What if you were in charge?

If you were given funds to enhance a surveillance system, how would you invest?
What do Surveillance Systems Cost?

A Case Study in New York State

Acknowledgements: Thanks to Hwa-Gan Chang and Alok Mehta, New York State Department of Health, for supplying cost and staffing information.
Four Surveillance Systems Considered

- Epidemiology
  - Electronic Laboratory Reporting
  - Communicable Disease Reporting
  - Emergency Department Syndromic Surveillance

- Public Health Laboratory
  - Reporting to Epidemiology and counties
Staff to Develop Systems
New York, 2000-2005

- Three Epidemiology Systems
  - 7 Developers
  - 3 Business Analysts
  - 1 Project Manager
- Public Health Lab System
  - 4 Developers
Staff to Maintain/Enhance Systems
New York, 2006-2013

» 6 Developers
» 2 Business Analysts
» 4.5 Programmers
» 1 Project Manager
Costs to Develop Systems: 2000-2005 (in $1000s)

Epidemiology: Electronic lab reporting, syndromic surveillance, and case reporting.

PH Lab: Reporting to Epidemiology and counties.
Annual Costs to Maintain/Enhance Systems: 2006-2013 (in $1000s)

Epidemiology: Electronic lab reporting, syndromic surveillance, and case reporting.

PH Lab: Reporting to Epidemiology and counties.
Limitations to Cost Analysis

- One state’s experience
- Varying technology environments
- Cost in today’s dollars and with today’s technology
- Assumptions...assumptions!
Cost Conclusions

- Considerable costs to develop surveillance systems
- Long-term financial commitment needed
- Funding both from state and from CDC grants
Case study discussion

How does your jurisdiction make surveillance decisions when faced with resource limitations?
CDC Surveillance Strategy

An agency initiative to improve surveillance

Chesley Richards, MD, MPH, FACP
Deputy Director for Public Health Scientific Services; Director, Office of Public Health Scientific Services, U.S. Centers for Disease Control and Prevention
CDC strategic directions

- **Health Security**
  - Improve health security at home and around the world

- **Leading Causes of Death**
  - Better prevent the leading causes of illness, injury, disability, and death

- **Public Health-Health Care Collaboration**
  - Strengthen public health/health care collaboration
What are the challenges?

- CDC operates, funds or works with > 100 surveillance systems
- Silos often function, but at a cost
  - Interconnections, interdependencies and efficiencies not realized
  - Local/state health departments with a plethora of systems and requirements
What are the challenges?

- Emerging Health Information Policy issues
  - Electronic Health Records
  - Meaningful Use standards
  - Interoperability requirements
What are the challenges?

- Slow adoption of technology advances
- Insufficient workforce with the right skills in right places
- Have not learned from previous failures, or successes
What are the opportunities?

- Decreased manual reporting from traditional data sources to more automated data use and analyses from novel sources.

- Improved interoperability among jurisdictions and data systems.
What are the opportunities?

- More novel partnerships/collaborations to overcome limited public health informatics resources

- A revolution in analytics, visualization and communication on public health data and information
CDC Top Priorities for Improving National Surveillance Systems

- Modernize National Notifiable Diseases Surveillance System
- Enhance BioSense system
- Accelerate Electronic Lab Reporting
- Accelerate Electronic Death Record Use
Modernizing the National Notifiable Disease Surveillance System

- Assuring a **common language**
  - Using HL7 language for all reports to CDC

- Developing a **state-of-the art platform**
  - Improving data exchange services

- Providing **technical assistance** to States
  - Supporting Program Implementation
Improving the BioSense System: BioSense 2

- Improved sharing of emergency department visit information across jurisdictions
  - Useful during Mass Gatherings and other events
- Cloud Computing Environment
- Assist in meeting Meaningful Use Requirements
Enhance Electronic Lab Reporting

- 64% of lab results were reported to public health agencies electronically in 2013
- Benefits: More timely and complete reporting
- CDC priorities to enhance ELR:
  - Work with large clinical labs
  - Electronic Health Records
  - Improve state capacity to receive ELR
Electronic Death Record Use-2014

Percentage of Death Records FullyFiled Electronically*
Using Electronic Death Registration System
Updated February 2014

*Funeral Home demographic and disposition information electronically; Certifying physician enters and files medical information electronically

Map showing the percentage of death records fully filed electronically across the United States. States are color-coded to indicate coverage levels. The map indicates varying percentages for different states, with some states showing higher coverage and others showing lower coverage or no system.
Enhance Electronic Death Records

- 37 of 57 vital records registration areas have an electronic death records system
- Benefits: More timely and accurate data
- CDC priorities:
  - Increase physician participation
  - Improve electronic death record systems
  - Enhance state capacity
Success on the surveillance strategy will...

- Reduce the burden on public health agencies
- Increase the range of data and tools for local public health decision makers
- Set the stage for strengthening, consolidating and improving our surveillance activities and systems
Discussion and Questions
Post-webinar resources

- Surveillance Knowledge Repository - Available now

- Online training resources - Coming soon!

*Please complete webinar evaluation survey*
Knowledge Repository

biosurveillance.weebly.com

Topics:
- Mass Gatherings, Boston Marathon
- Natural Disasters, Superstorm Sandy
- Outbreaks, H1N1 & seasonal flu
- Surveillance enhancements

- Archived webinars & slides
- Relevant resources
Conclusion

- Thanks to guests
- Thanks to CDC for support
- Thanks to audience

Contact us at NCPERRC@email.unc.edu