

Surveillance: Post-event Strategies



Developed by the Florida Center for Public Health Preparedness

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Program Objectives

- Understand surveillance purpose and use in post-event epidemiologic investigation
- Aware of the steps in setting up a surveillance system

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Surveillance Defined

The ongoing, systematic collection, analysis and interpretation of health-related data essential to the planning, implementation, and evaluation of public health practice, closely integrated with the timely dissemination of these data to those responsible for prevent and control

KEY: Collect the right data in order to answer needed questions

CDC, 1963

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Purposes of Surveillance

- Determine baseline rates of disease by monitoring trends
- Detect epidemics, outbreaks, and public health emergencies in order to recognize unusual events
- Estimate the extent/magnitude of a problem
- Identify and describe populations at risk for a disease
- Describe the geographic distribution of a disease
- Assess public health interventions
- Aid in resource allocation

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How Surveillance Changed in Florida during the 2004 and 2005 Hurricanes

- Regular public health surveillance disrupted
- First surveillance system included DMATS, Emergency Rooms, and Shelters
- HIPAA waiver cited in DOH letter
- Electronic data implemented for last three 2004 hurricanes and 2005 hurricane season
- New method of analysis
- Special surveillance systems included the Medical Examiner and Poison Control

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How does Post-Event Surveillance differ from "Normal" Epidemiological Surveillance?

- Time/political pressure by providing data for decision making
- Primary purpose is to find a source rather than give a precise estimate of a risk ratio
- Identify requirements, local capabilities, and gaps
 - Surveillance often includes more than data gathering
- Supplement regular disease reporting
- Identify outbreaks and prevent spread of disease
- Describe distribution of illness and injury to guide public health interventions
- Respond to public and press concerns

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Agencies Involved In Disaster Management

Emergency Management	Hospitals
Fire	Law Enforcement
EMS	Red Cross
Public Health	Other NGOs

More information on the Emergency Support Functions, or ESF, structure of the Emergency Operations Center can be found at <http://www.floridadisaster.org/internaltraining/ESFs.htm>

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Planning a Surveillance System

Establish objectives

- Identify index case, characterize epidemiology, understand transmission, control outbreak, evaluate intervention

Develop case definitions

- Standardize for comparability over time and place, evolve in acute setting, may alter magnitude

Determine data sources

- Hospitals, labs, physicians
- Validity and reliability of data varies with reporting venue

Develop data collection mechanism

- Passive reporting, active reporting, survey, sentinel system, chart abstraction

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Planning a Surveillance System (continued)

Field test

- Ensure viability of collection method (e.g. acceptability, simplicity)

Analytic approach

- Level of detail varies significantly

Dissemination

- Electronic, Epi-X, EpiCom, public health advisories, media, newsletters, website

Use of analysis and interpretation

- Communication and evaluation

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Influences on Surveillance System

Surveillance programs are influenced by external controls

- Return time for testing
- Cost of testing
- Ability to provide follow-up
- Provider education
- Legal authority
- Public education/public opinion

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Steps For Setting Up A Surveillance System

- Assessment of available resources
- Locate sites for surveillance systems
- Implement surveillance by gathering data
- Download information from the DMATs and analyze it
- If identify something unusual, investigate (whether it is a rumor or real)
- Communicate findings

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Steps For Setting Up A Surveillance System

- 1. Assessment of available resources**
 - Find out what Hospitals, Clinics, Emergency Rooms, Dialysis Centers and Shelters are open and available
 - Identify the official and "unofficial" shelters and what health resources may be there
 - Even if the resources are not open, people might congregate at these areas in hopes of receiving care
 - Disaster Medical Assistance Teams (DMATs) may set up in parking lots as an area of operation

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Steps For Setting Up A Surveillance System (continued)

2. Locate sites for surveillance systems
 - Set up a clinic at sites where Disaster Medical Assistance Teams (DMATs) are located
 - Use information DMAT has collected or create forms that are easy for DMATs to use
 - In some cases, information the DMATs have about patients can be downloaded directly on to computer
 - Information collected by DMATs will include how many GIs, scrapes, nauseas, prescription refills, etc. were seen that day
 - It is important to carry a letter from the State Public Health Officer explaining that HIPAA exempts public health surveillance from its rules
 - This will ensure DMAT, Hospital, Physician, etc. cooperation

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Type of Data needed Post-Event

Morbidity data

- Routine and special surveillance
- Baseline data on endemic disease burden

Mortality data

Characteristics of affected zone

- Geographic size
- Type of population

Status of public health/health care resources

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How Data can be Collected Post-Event

Rapid needs assessment

- Conducted as soon as possible
- Identify communicable disease threats
- Outline public health needs

Special (temporary) surveillance

Data collection methods can vary

- Manual data collection is labor intensive but provides on-site assessments
- Electronic data collection is less labor intensive but may lose on-the-ground view

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Potential Data Sources

- Laboratories
- Infectious disease specialists
- Hospitals
- Emergency Rooms
- Physician's offices
- Poison control centers
- Schools
- Daycares
- Nurse Triage
- Medical Examiner
- Death certificates
- Police/Fire departments
- EMS/911
- Pharmacy data
- Veterinarians
- Nursing homes
- Occupational health
- Environment health

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Steps For Setting Up A Surveillance System (continued)

3. Implement surveillance by gathering data

- Set up protocol for gathering data - where, how often, etc.
- Collect patient info, case logs, etc.

Surveillance strategies are best based on the characteristics of the disease(s) and/or outbreak

- Passive surveillance assumes report will be made by data sources
- Active surveillance means looking for cases by interviews and clinic and/or Emergency Room visits

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Steps For Setting Up A Surveillance System (continued)

4. Download information from the data sources and analyze it

- Look for anything that stands out
- Compare data to baseline measures, if available
- Data sent back to team leader (at the end of each day) who assembles it
- Next morning the analysis arrives from headquarters
- Print the data out as a graph or table and give to data source as a courtesy

Building relationships is VERY important

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Using Surveillance Data for Analysis and Response

Estimate magnitude of the problem

- Is this a new outbreak or ongoing?

Determine geographic distribution

- How are populations in different locations being impacted?
- Is the impact dependent on location?

Portray natural history of a disease

- Generate hypotheses about disease trends or specific outbreak

Detect epidemics and define a problem

Identify populations groups who might benefit from intervention

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Using Surveillance Data for Analysis and Response (continued)

Evaluate control measures

- Interventions are effective when disease declines or plateaus

Monitor changes in disease and impacted population

- How are populations in different locations being impacted?
- Is the impact dependent on location?

Detect changes in health practices

Facilitate planning

- Identification of needed supplies and resources

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Steps For Setting Up A Surveillance System (continued)

5. If identify something unusual, investigate (whether it is a rumor or real)

- Determine if something is really going on
- Conduct the steps of an outbreak investigation
- Put together Investigation Teams
- Investigation may not involve sample collection as labs may not be available
- Deal mostly with symptoms and cause

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Steps For Setting Up A Surveillance System (continued)

6. Communicate findings

- Communicate information back to the DMATs
- Communicate info to the Public Information Officer (PIO), other health authorities and colleagues, and Incident Commander
 - Important to have a PIO on-site

Communication to the community

- Stop rumors
- Increase healthy behaviors
- Stop "bad" behaviors
- Increase trust in public health

Communication needs to be woven through each step

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Surveillance System – General Points

Surveillance team is on site to do more than just surveillance

- They are there to assess the needs of the people and to assist in getting those needs met
- They may direct people to the resources they need, coordinate transportation to the resource, and/or identify needed resources

Important to be safe

- Need to travel in teams of 2 or more

May be involved with rumor control

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Surveillance System – General Points (continued)

Sample collection does not occur often because labs not available and difficulty of shipping

- Usually deal with the situation by treating the symptoms of a suspected illness

It is important to form the right teams

- The right combination of skills, such as surveillance person, medical person, PIO, epi person, etc.
- It is important that the members of the team get along and understand their roles

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Always Check Equipment

Some essentials include:

- Laptop - with wireless connection capability
 - ICS centers have wireless access
- Skill in Excel is important
- Epi books such as *Field Epidemiology* by Gregg, et al or *Communicable Diseases In Man*
- Satellite phone is VERY important
- Paper, pens, food, water
- Badges and other identifying clothing are important to wear

A list of field supplies is included in your I-FIRST training materials

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Summary

- Understand surveillance purpose and use in post-event epidemiologic investigation
- Aware of the steps in setting up a surveillance system

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Acknowledgements

The following material and information was used with permission:

Alan D. Rowan, DrPH, MPA
Acting Bureau Chief, State Laboratory Services; Program
Manager, Florida Epidemic Intelligence Service Bureau of
Epidemiology Florida Department of Health

Field Surveillance for Disasters
Michigan Center for Public Health Preparedness
University of Michigan – School of Public Health
JoLynn Montgomery, PhD, MPH
Jim Collins, MPH, RS

These materials were adapted for use in Florida by the Florida
Center for Public Health Preparedness

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Acknowledgements (continued)

The following material and information was used with permission:

Hurricanes & Public Health:
Issues in Surveillance & Response for Florida
Roger Sanderson, RN, MPH, Joann Schulte, DO, MPH, and
Richard Hopkins, MD, MSPH
Regional Epidemiology Seminar, January 2006

Public Health Surveillance:
Challenges for the 21st Century
Janet Hamilton, MPH, Bureau of Epidemiology
Florida Department of Health
Regional Epidemiology Seminar, January 2006

These materials were adapted for use in Florida by the Florida
Center for Public Health Preparedness

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