Overview

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Surveillance Definition and Introduction

• Surveillance:

• “ongoing systematic collection(s) and analysis of data and the provision of information which leads to action being taken to prevent and control a disease…” (Medterms, 2004)

• Active Surveillance
  • Examples: WNV mosquito sampling, March-October

• Passive Surveillance
  • Examples: Influenza reporting.
Why Special Event Surveillance?

- Potential for large-scale, unexpected outbreak
  - Multi-day events, harder to track
  - Single common event amongst otherwise spread-out population

- Agents of interest:
  - Foodborne toxins – *B. Cereus*, *C. Perfringens* Type B, *Shigella* (stx2)
    - Dose-specific, acts within single event/day
  - Transmissible – Anthrax, *C. botulinum*
Special Event Surveillance

• Examples:
  • G8 Convention – 4 days of control monitoring for baseline incidence performed prior to convention start.
  • 2002 Winter Olympic Games – No control period
    • RODS (Real-time Outbreak and Disease Surveillance) used to monitor spikes in incidence for a population > 2 million.

Objectives and Goals

• Primary: Develop Standard Operating Procedures for real-time special event surveillance operable by Maricopa County Department of Public Health staff.

• Secondary: Supplement SOP with venue-specific Field Operation Guides (FOGs)

• Secondary: Develop symptomology incidence baselines for detection of potential outbreaks during the special event.
History of SpES in Maricopa County

- Super Bowl XLII
- Fiesta Bowl 2009
- NBA All-Star Game
- Obama Convocation at ASU
Project Design

- Test the SOP drafted prior to 2011 MLB All-Star Special Event
  - Guidelines in SOP were followed by current SAFER students to conduct special event surveillance for five days.
  - After Action Report filed with MCDPH and included, MCDPH staff, Field Epidemiology Volunteers, and TOC liaisons.

- Revisions to SOP drafted and reviewed based on MLB All-Star event
  - MCDPH prepared for 2012 Glendale Fiesta Bowl
    - Different agencies than with MLB All-Star Event, no TOC.
Announcement of Event and TOC coordination for that function

TOC/Planning – Maricopa County Department of Public Health appoints department liaisons

Positions for the ICS, Field Epidemiology team, and TOC are determined

Positions filled by qualifications, experience, and availability.

TOC/Planning – Maricopa County Department of Public Health begins Pre-Event Public Health Survey

Based on staffing needs, ensure MCDPH has proper ICS work areas established.

Ensure working phones, working 'batphone,' and secure WebEOC access for those positions that need it.

Field Epidemiology position assignments are acknowledged by appointed surveillance team.

HDE and LFE call for volunteers based on TOC/MCDPH Liaison's determinations.

HDE and LFE design questionnaire for in-field use.

HDE, and LFE determine feasibility of online survey vs. paper survey strategies

(With Planning) Ensure off-hours phone schedule fits schedule of staff.

Train liaisons on equipment distributed by TOC, i.e. cell phones.

Attend TOC scheduled meetings

Obtain TOC regularly scheduled event calls and service access, distribute to necessary planning/liaison staff.

Generate event call schedule and service. Distribute schedule and service with necessary staff.

(With Planning) Test messaging system, batphone, and off-hours phone schedule.

Train those involved on WebEOC usage, guidelines, and purpose

Procure WiFi aircards if needed for field surveillance team

Procure 800 Mhz radios if event location requires them

Distribute aircards and radios to field surveillance team upon request.

Order mass printing of paper forms to ensure all volunteers have multiple copies for each day involved.

If online, establish a database, and communicate address and log in to ICS, TOC Liaisons, and Logistics.

If a paper system is implemented, distribute rough drafts of paper survey format.

Acquire wireless survey devices (i.e. Tablets with wifi/aircards enabled, laptops with wifi/aircards enabled.)

Finalize volunteer schedule(s) for event,
Flowchart Example

If online, establish a database, and communicate address and log in to ICS, TOC Liaisons, and Logistics.

• Each step refers to specific location in SOP.

• Main issues or steps addressed

Distribute aircards and radios to field surveillance team upon request.

• Flowchart accounts for wireless and paper survey formats.

• Color coordinated by MCDPH branch, or combination of branches.

(With Planning) Ensure off-hours phone schedule fits schedule of staff.
Event Conditions

- 2011 MLB All-Star Event
  - Event began at Phoenix Convention Center at 9am, continued until 10pm at Chase Field.
    - Multi-day event, different attractions each day, some repeat patrons.

- 2012 Fiesta Bowl
  - Tail-gating outside began 10am at earliest, game began 6 pm.

- From literature, assumed that special event sample isn’t representative of local population (less women, children, and elderly.)
Symptomology Comparison by Incidence

Event Symptom Category Incidence

<table>
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<tr>
<th>Incidence</th>
<th>GI</th>
<th>Skin</th>
<th>Respiratory Neurological</th>
<th>Ill Before</th>
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<tr>
<td>2012 Fiesta Bowl Incidence</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>2011 MLB Incidence</td>
<td></td>
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</tr>
</tbody>
</table>

- GI
- Skin
- Respiratory Neurological
- Ill Before
Challenges Encountered

• Loss of communications during peak usage of the event.
  • Backup wireless connections (Wifi, 3G, 4G networks,) are necessary in case of recurrence.
• Control surveys couldn’t be administered randomly to event patrons.
• Capturing demographics of patrons
Next Steps

- Use data from all 5 events to calculate baselines for Special Events based on number of people, time of year and venue
- Use baseline values to predict number of syndromic complaints at future events
All Events Combined by Temp

General Symptom Incidence by Event Temperature

- Gastrointestinal
  - Hot: MLB/President Obama Convocation
  - Cold: SB, FBs, NBA All Star

- Skin
  - Hot: MLB/President Obama Convocation
  - Cold: SB, FBs, NBA All Star

- Respiratory
  - Hot: MLB/President Obama Convocation
  - Cold: SB, FBs, NBA All Star

- Neurological
  - Hot: MLB/President Obama Convocation
  - Cold: SB, FBs, NBA All Star
Conclusion

- **Primary:** An executable SOP was drafted for the MCDPH and actively implemented into real-time special event surveillance preparedness. Further revisions being made based on County needs.
  - **Secondary:** FOG construction has begun, and can be updated as special event surveillance at venues arise.
  - **Secondary:** Baseline symptomology values were determined for special event surveillance.
    - Baseline values for outbreak alert determined.
    - Prediction models to be developed.
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Questions?