State of Maryland: Developing an Event-Based Surveillance System

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Overview

- Description of Capstone/PHASE project
- Types of Surveillance
- Proposed Event-Based Surveillance background
- Surveillance tool methods
- Results of tool demonstrated through hurricane scenario
- Conclusion
- Future Recommendations
- Acknowledgements

Background

- Many types of surveillance:
  - Syndromic Surveillance (ESSENCE)
  - Drop-in Surveillance
  - Proposed Maryland Event-Based Surveillance System (MEBSS)

- MD is a diverse state
  - 24 public health jurisdictions
  - population of 5.6 million (2007 US Census Bureau)

Background

- MD is susceptible to both natural and man-made disasters:
  - hurricanes, flooding; terrorism due to Maryland's close proximity to DC
- MEBSS most advantageous in cities where most large scale events take place:
  - Baltimore City population: 636,000*
  - Ocean City population (height of season): ~345,000*/weekend

Methods
Surveillance Database

- MEBSS database populated with 60 events.

- The events are representative of the major populated areas throughout MD.
  - Baltimore City and surrounding area
  - Ocean City
  - Annapolis
  - Timonium and Howard County Fairgrounds

Methods
Surveillance Database

- Nine main fields:
  - Event
  - Facility
  - Facility capacity
  - Date
  - Season
  - Expected number in attendance
  - Profile
  - Contacts
  - Source

Methods
Surveillance Form

- Pretesting of form with businesses/organizations
- Finalized form may be sent/received as hardcopy, electronically (web-based) or by fax
- Form is user friendly
- Tracking events

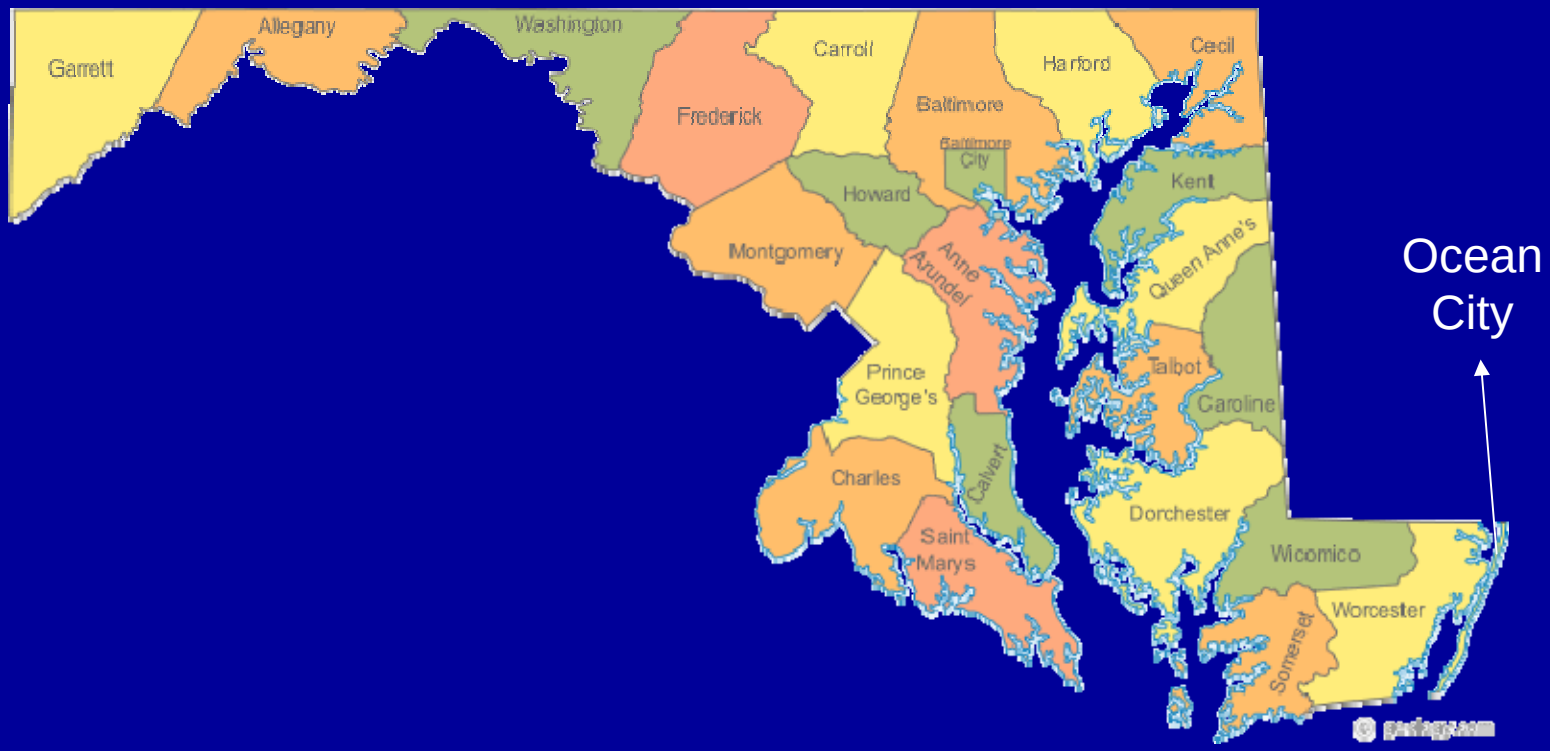
Methods
Surveillance Form

- Organization/Business information:
  - Basic contact data
- Event information:
  - Basic facility data
  - Facility capacity, season and type
  - Age groups and potential status of attendees
  - List and prioritize 3 potential threats to event

Hurricane Isabel

Photo courtesy of Cathy O'Neil at DHMH

Map of Maryland



Hurricane Scenario Illustration July 28, 2006- Ocean City, MD

- Notified July 25th of Category 3 Hurricane

- Access event database:
  - Height of beach/tourist season
  - Greek Festival at Convention Center

Hurricane Scenario Illustration July 28, 2006- Ocean City, MD

The database also shows:

- Expected number and types of people attending (such as families, teens, infants)
- Provides a quick approximation of the total influx to the Ocean City area.

Challenging Evacuation Measures

Photo from: images.worldres.com/.../lang1/map_ocean_city.png

Evacuation Limitations

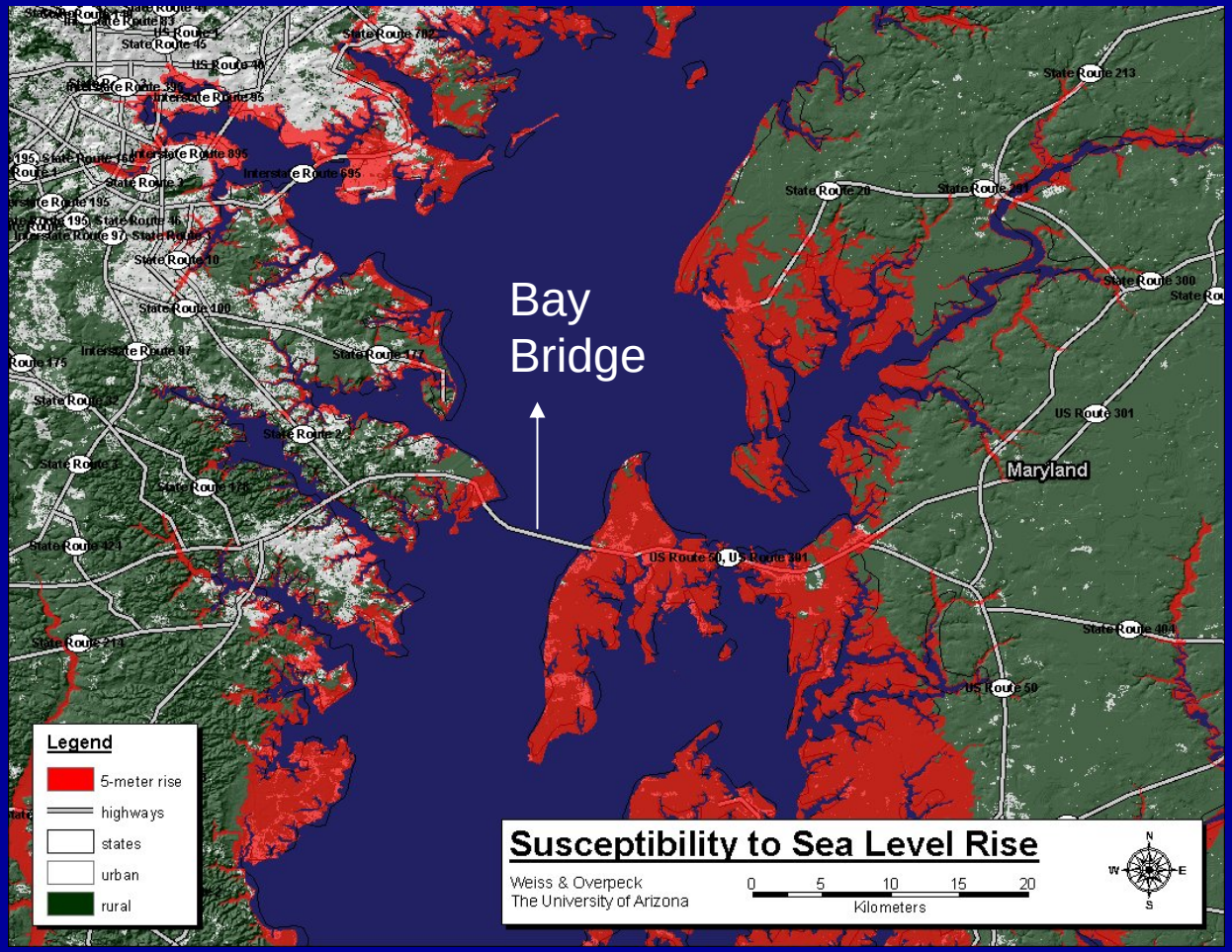


Photo courtesy of Cathy O'Neil at DHMH

Conclusions

- MEBSS is important for providing a tool to increase awareness in communities throughout Maryland.
- This system can help to lessen the impact of a disaster by allowing the health and medical sectors to plan ahead.
- The database of events can permit responders to see how many people will be in a given area at a given time, thus allowing for the preparation of surge capacity.

Recommendations

- Formatting form for internet access
- Web-based system security
- Training staff for MEBSS

Recommendations

- Incorporating MEBSS with GIS technology

- Linking MEBSS with an alerting/flag system
  - Similar to that of ESSENCE (syndromic surveillance)
  - For alerting purposes it would important to understand the influx above the normal baseline for the particular county of city that is being observed

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Questions????

Pandemic Influenza Scenario

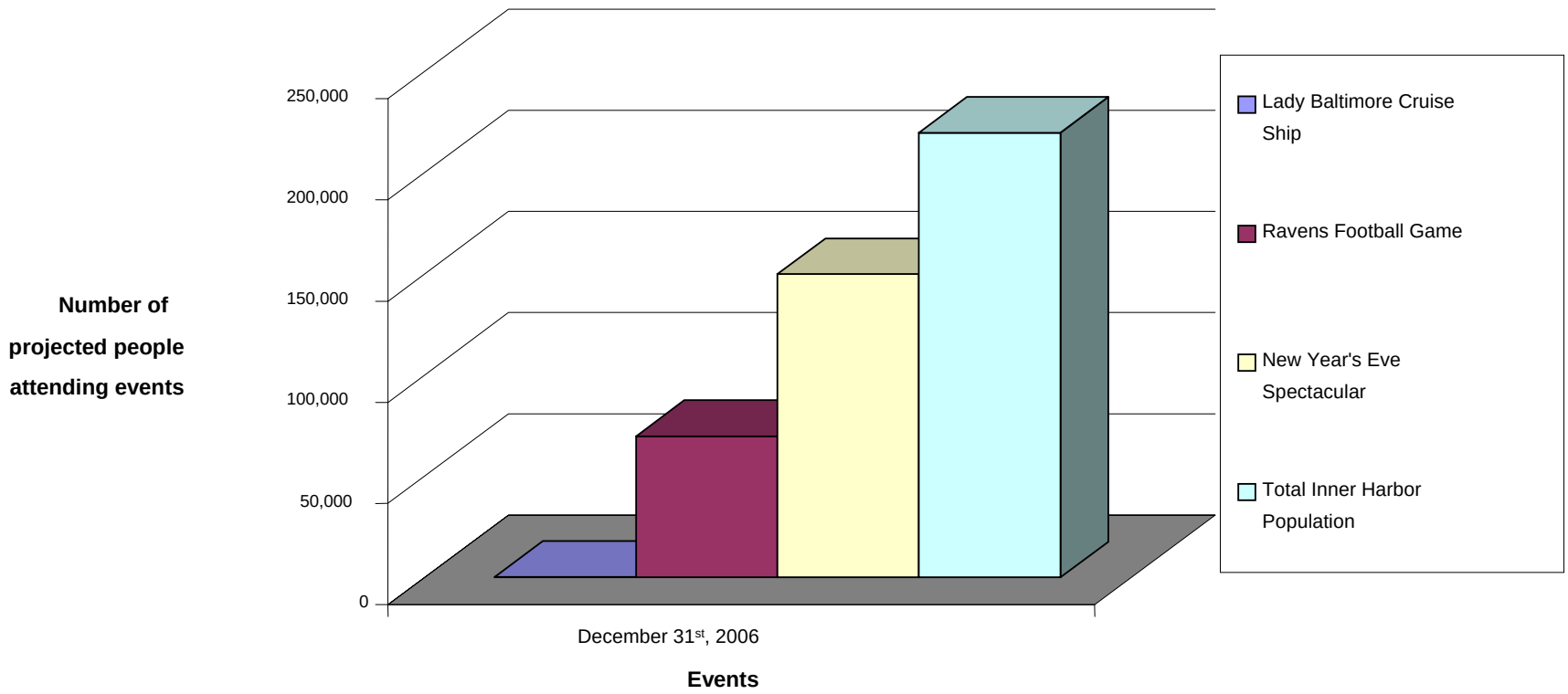
Outbreak December 31, 2006

Baltimore, MD
December 31, 2006

- The MEBSS database is accessed and contains some main events in Baltimore City:
  - Ravens football game
  - New Year’s Eve Spectacular celebration
  - New Year’s Eve cruise on the Lady Baltimore in the Inner Harbor.

- The database also shows
  - Expected number and types of people attending (such as families, teens, infants)
  - Provides a quick approximation of the total influx to the Inner Harbor area.

Event Attendees in Baltimore Inner Harbor Area December 31st, 2006



Conclusion

- The database will provide information on the potential magnitude of the incident
- It will suggest the level of surge capacity that must be prepared for.
- Incorporating GIS capabilities will show geographical locations and clustering of individuals

Conclusion -2-

- In the case of a H5N1 outbreak, the database would provide information that would be useful
  - for quicker requests and activation of state and federal assistance for resources and such as the Strategic National Stockpile
  - more rapid response to the area, allowing access to the national stockpile in a more timely fashion.

Snapshot of Event-Database

Event	Facility	Facility Capacticy	Date	Season	Expected Number in Attendance	Category	Profile	Contacts	Source
Baltimore's 26th Annual Artscape 2007	Bolton Hill and Midtown Belvedere Neighborhood- Batimore, MD- MICA Campus	Total: 1.5 million in attendance	July 20-22, 2007	Summer	Total: 1.5 million in attendance; > 75,000/day	Annual Event	Artscape, the region's premier celebration of the arts, features continuous musical performances by local, regional, and national talent on four outdoor stages, indoor and outdoor visual arts exhibitions, film, theater, the Artists' Market with crafts and works of art for sale, opera, dance, fashion, street theater and special activities geared towards children	Phone 410.752.8632	http://207.114.6.204/resources/up165.aspx;

Event Based Surveillance Form

1. Company/Organization Name:
2. Contact Name:
3. Address:
4. State: Select... *
5 Postal Code:
6. County: Select...
7. Title:
8. City:
9. Phone Number:
10. Fax Number:
11. Email Address:

Event Information:

1. Event Title:
2. Facility Name:
3. Facility Address:
4. Date: Start * End
5. Time: Start Select... End Select...
6. Event Type: Select...
7. Season of Event: Select...
8. Event Capacity:
9. List and Prioritize 3 potential threats to this Event:
   1.
10. Potential Age group Categories attending event - Choose all that apply

☐ Infants ☐ School-age Children ☐ College Students ☐ Seniors (65+)
☐ Toddlers ☐ Teens ☐ 24-64 years

11. Potential Status of Event Attendees - Choose all that apply:

☐ Political Organizations ☐ Dignitaries and/or Public Leaders ☐ Sports Figures/Teams
☐ MD State Governor ☐ Baltimore City Mayor ☐ Active Military Duty ☐ Out-of-State Governors ☐ County Medical Officer ☐ Veterans
☐ Religious Leaders ☐ Other- Please Specify

Additional Notes/Information: