Implications for Public Health Policy and Operations: New York's Response to Hurricane Sandy

Asante Shipp Hilts, DrPH, MPH
Senior Coordinator, Office of Public Health Practice
New York State Department of Health
Assistant Professor, Dept. of Epi & Biostatistics
University at Albany, School of Public Health
Background

Sandy Impacts to NYS: Westchester County & Long Island

- Infrastructure damage
- Flooding
- Public health services interruption

[Map showing hurricane storm surge zones]
Study Goal

To assess the Sandy response strengths and challenges, and develop recommendations for public health system preparedness:

- New York State Department of Health (NYSDOH)
- Local Health Departments (LHDs)
- NYS Office of Emergency Management, WIC, Water, HIV/STD providers
The How: Mixed Methods Approach

Phase 1

Data Collection: Emergency reports

Qualitative analysis using CDC public health preparedness capabilities (PHPC)

Phase 2

Data Collection: Focus groups & interviews

Qualitative analysis using CDC PHPC

Phase 3

Data Collection: Anonymous surveys

Quantitative analysis
Selected Results
Most Cited LHD Staff Strengths by Capability from Emergency Reports in Phase 1

<table>
<thead>
<tr>
<th>LHDs, Percentage of 30 Total Strengths</th>
<th>Strengths</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency operations coordination</td>
<td>Sharing local resources</td>
<td>Town vehicles utilized to transport staff</td>
</tr>
<tr>
<td></td>
<td>Providing facility updates</td>
<td>Information shared to monitor at-risk healthcare facilities</td>
</tr>
<tr>
<td>Mass care</td>
<td>Operating emergency shelters</td>
<td>All available staff used to operate emergency shelters</td>
</tr>
<tr>
<td>Medical surge</td>
<td>Utilizing federal resources</td>
<td>Federal ambulances requested to support local medical transport needs</td>
</tr>
</tbody>
</table>
### Most Cited LHD Staff Challenges by Capability from Emergency Reports in Phase 1

<table>
<thead>
<tr>
<th>LHDs, Percentage of 123 Total Challenges</th>
<th>Challenges</th>
<th>Associated Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency operations coordination</td>
<td>Insufficient memoranda of understanding in place</td>
<td>Update and maintain standing contracts with municipalities to seamlessly share resources</td>
</tr>
<tr>
<td>Planning</td>
<td>Lack of protocol for power outages</td>
<td>Establish plan that includes securing generators for critical facilities</td>
</tr>
<tr>
<td>Environmental health protection</td>
<td>Hazardous road conditions</td>
<td>Enhance contact with public information officer to provide timely information on hazardous conditions</td>
</tr>
<tr>
<td>Information sharing</td>
<td>Lack of county wide communications</td>
<td>Create designated county-wide call-in number that becomes live when EOC is activated to provide updates</td>
</tr>
</tbody>
</table>
Most Cited NYSDOH Staff Strengths by Capability from Emergency Reports in Phase 1

<table>
<thead>
<tr>
<th>NYSDOH, Percentage of 1681 Total Strengths</th>
<th>Strengths</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency operations coordination</td>
<td>Routine conference calls</td>
<td>Conference calls conducted with federal, state, and local partners</td>
</tr>
<tr>
<td>Information sharing</td>
<td>Data accessibility</td>
<td>Disaster related information accessible by staff across the state</td>
</tr>
<tr>
<td>Surveillance &amp; investigation</td>
<td>Outbreak investigations</td>
<td>Outbreak investigations conducted at emergency shelters</td>
</tr>
<tr>
<td>Planning</td>
<td>Evacuation plans</td>
<td>Action plans developed for evacuee placement and repatriation</td>
</tr>
</tbody>
</table>
Most Cited NYSDOH Staff Challenges by Capability from Emergency Reports in Phase 1

<table>
<thead>
<tr>
<th>NYSDOH, Percentage of 706 Total Challenges</th>
<th>Challenges</th>
<th>Associated Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental health protection</td>
<td>Presence of mold</td>
<td>Determine staff needs for equipment and information</td>
</tr>
<tr>
<td>Emergency operations coordination</td>
<td>Inconsistent implementation of ICS</td>
<td>Develop information materials delineating incident command</td>
</tr>
<tr>
<td>Community recovery</td>
<td>Closing of public health agencies</td>
<td>Develop information packets about NYSDOH public health services</td>
</tr>
<tr>
<td>Information sharing</td>
<td>Lack of data sharing</td>
<td>Develop shared electronic system for partners with accurate real-time data for vulnerable populations, morbidity/mortality, evacuation needs, bed availability and transport needs</td>
</tr>
</tbody>
</table>
Phase 3 Results: Prepared for Sandy?

1=strongly disagree to 5=strongly agree

Responsibilities clearly defined

Adequate information

Adequate resources

Training was sufficient preparation

LHDs
NYSDOH
Phase 3 Results: Current Training for Weather-Related Emergencies

(Respondents may not be part of employment category designated for training or practicing plan)
Phase 3 Results: Practiced Emergency Response Plan Since Sandy?

(Respondents may not be part of workgroup designated for training or practicing plan)
Operational Application of the Findings
Dissemination using “Information to Action Reports”

Results from WIC Service Provider Focus Group and Interview

- Challenges most cited by WIC service providers for each emergency capability (percentage of each capability at each level)

Figure 1. Challenges most cited by WIC service providers for each emergency capability (percentage of each capability at each level).

- Flood water damaged office facilities and equipment. Some temporary work arounds were used.
  - A lack of clear instructions from the manager’s office for what action to take in the office.
  - Some WIC staff were unaware that their clients were being transferred to alternate locations.

Figure 2. Challenges most cited by WIC service providers for each emergency capability (percentage of each capability at each level).

- Information sharing
  - Lack of communication about changes in service.
  - Difficulties in coordinating with other WIC agencies.

Figure 3. Recommendations most cited by WIC service providers for each emergency capability (percentage of each capability at each level).

- Effective communication and coordination.
  - Development of emergency plans and coordination.
  - Use of social media and text messages.
  - Testing emergency response plans.

Figure 4. Recommendations most cited by WIC service providers for each emergency capability (percentage of each capability at each level).

- Participants recommended more training and drills.
  - Regular exercises and drills.
  - Testing emergency response plans.

Figure 5. Test results from WIC Staff Survey

- 44% of staff reported that they had received training in emergency response plans.
  - 56% of staff reported that they had not received training in emergency response plans.

Figure 6. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.

Figure 7. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.

Figure 8. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.

Figure 9. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.

Figure 10. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.

Figure 11. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.

Figure 12. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.

Figure 13. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.

Figure 14. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.

Figure 15. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.

Figure 16. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.

Figure 17. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.

Figure 18. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.

Figure 19. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.

Figure 20. WIC services currently have an emergency response plan.

- 80% of staff reported that their WIC program had an emergency response plan.
  - 20% of staff reported that their WIC program did not have an emergency response plan.
Study Limitations

• Data collected 2 years post Sandy
• Staff turnover
• Small sample size for focus groups and interviews
Funding Source

This research was supported by Cooperative Agreement Number U01TP000567 from the Centers for Disease Control and Prevention (CDC):

‘Public Health Emergency Preparedness and Response Research to Aid Recovery from Hurricane Sandy’
Acknowledgements

• **Research team**
  • Guthrie Birkhead, MD, MPH; Millicent Eidson, MA, DVM; Trang Nguyen, MD, DrPH; Tavora Buchman, PhD; Asante Shipp-Hilts, DrPH, MPH; Yunshu Li, MS; Stephanie Mack, BS

• **Student interns**
  • Gina Pendolino, Emily Haner, Adam Yanson, Michelle Wemette, Kristen Vacca

• **Sandy guidance team representation**
  • NYSDOH Centers for Environmental Health and Community Health, NYSDOH AIDS Institute, NYSDOH Office of Health Emergency Preparedness, NYSDOH Bureau of House Counsel, University at Albany SPH, Columbia University, Sandy impacted Local Health Departments and Emergency Management offices


Thank You

Contact Information:  
Asante Shipp Hilts, DrPH, MPH  
[Email Link]  
(518) 486-6097