

# Federal Perspective on Disaster Epidemiology: Superstorm Sandy

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# Research as Part of Public Health Emergency Response



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## Research as a Part of Public Health Emergency Response

Nicole Lurie, M.D., M.S.P.H., Teri Manolio, M.D., Ph.D., Amy P. Patterson, M.D., Francis Collins, M.D., Ph.D., Thomas Frieden, M.D., M.P.H.

N Engl J Med 2013; 368:1251-1255 | March 28, 2013 | DOI: 10.1056/NEJMs1209510

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Article	References	Citing Articles (1)
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In the past decade, a succession of public health emergencies has challenged preparedness response capacities of government agencies, hospitals and clinics, public health agencies, and academic researchers, in the United States and abroad. The epidemic of the severe acute respiratory syndrome (SARS), the 9/11 terrorist attacks, and the anthrax mailings stand out as examples in the early years of the decade. In addition to natural disasters such as the 2010 earthquake in Haiti and the 2012 Superstorm Sandy, other recent events — including the 200

In the past decade, a succession of public health emergencies has challenged preparedness and response capacities...

Each of these emergencies has yielded important information and data...to improve preparedness and response.

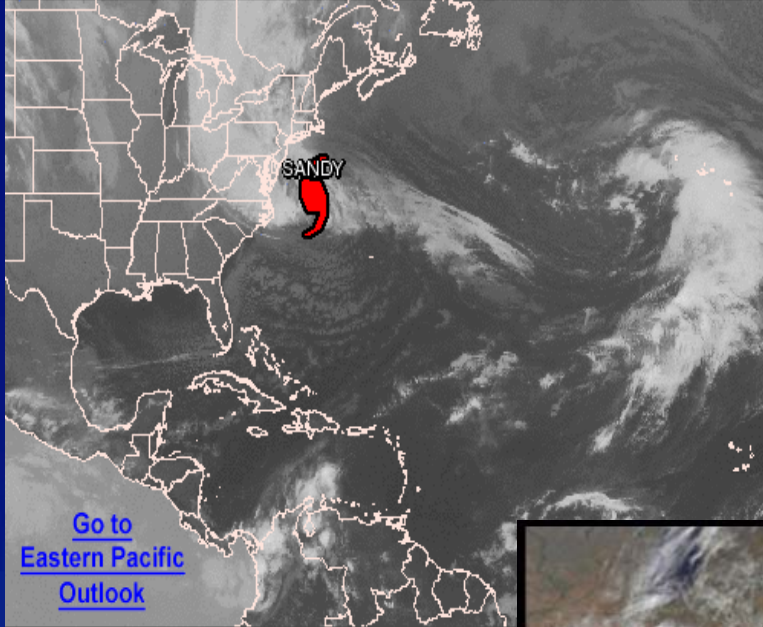
The knowledge generated through well-designed, effected executed research is critical to our future capacity

Lurie, N., Manolio, T., Patterson, A. P., Collins, F., & Frieden, T. (2013). Research as a part of public health emergency response. *New England journal of medicine*, 368(13), 1251-1255.



# Graphical Tropical Weather Outlook

National Hurricane Center Miami, Florida

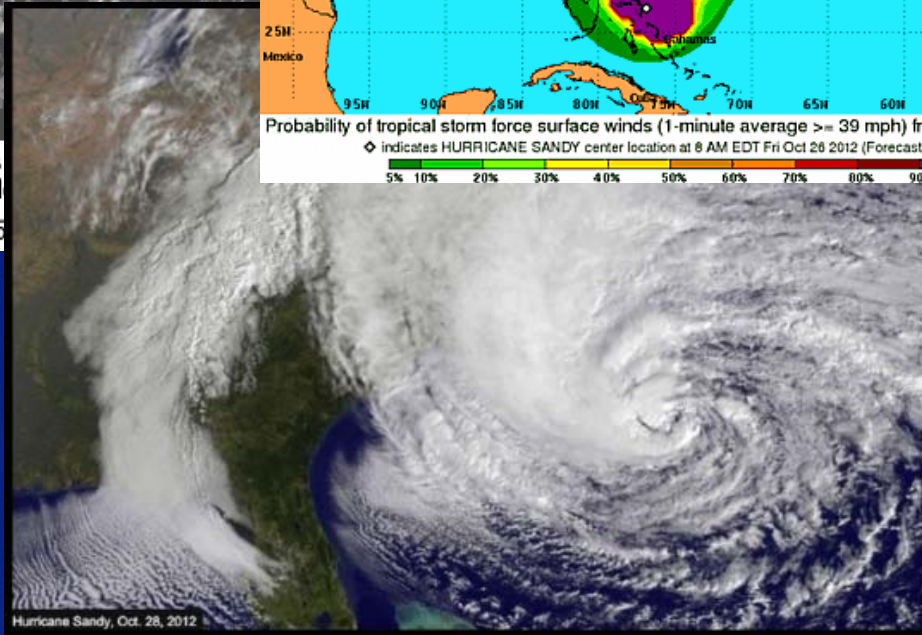
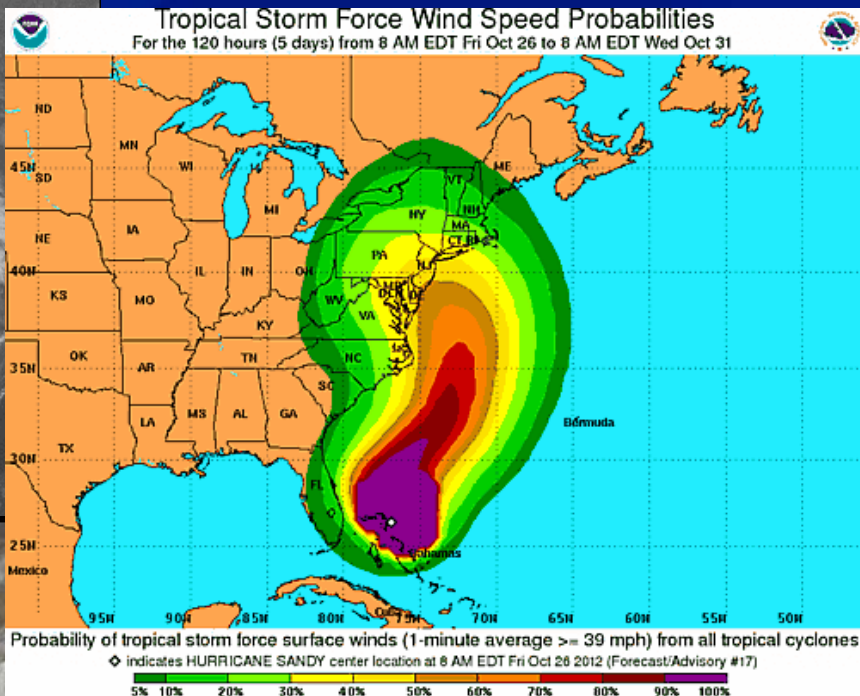


[Go to Eastern Pacific Outlook](#)

800 AM EDT MON OCT 29 2012

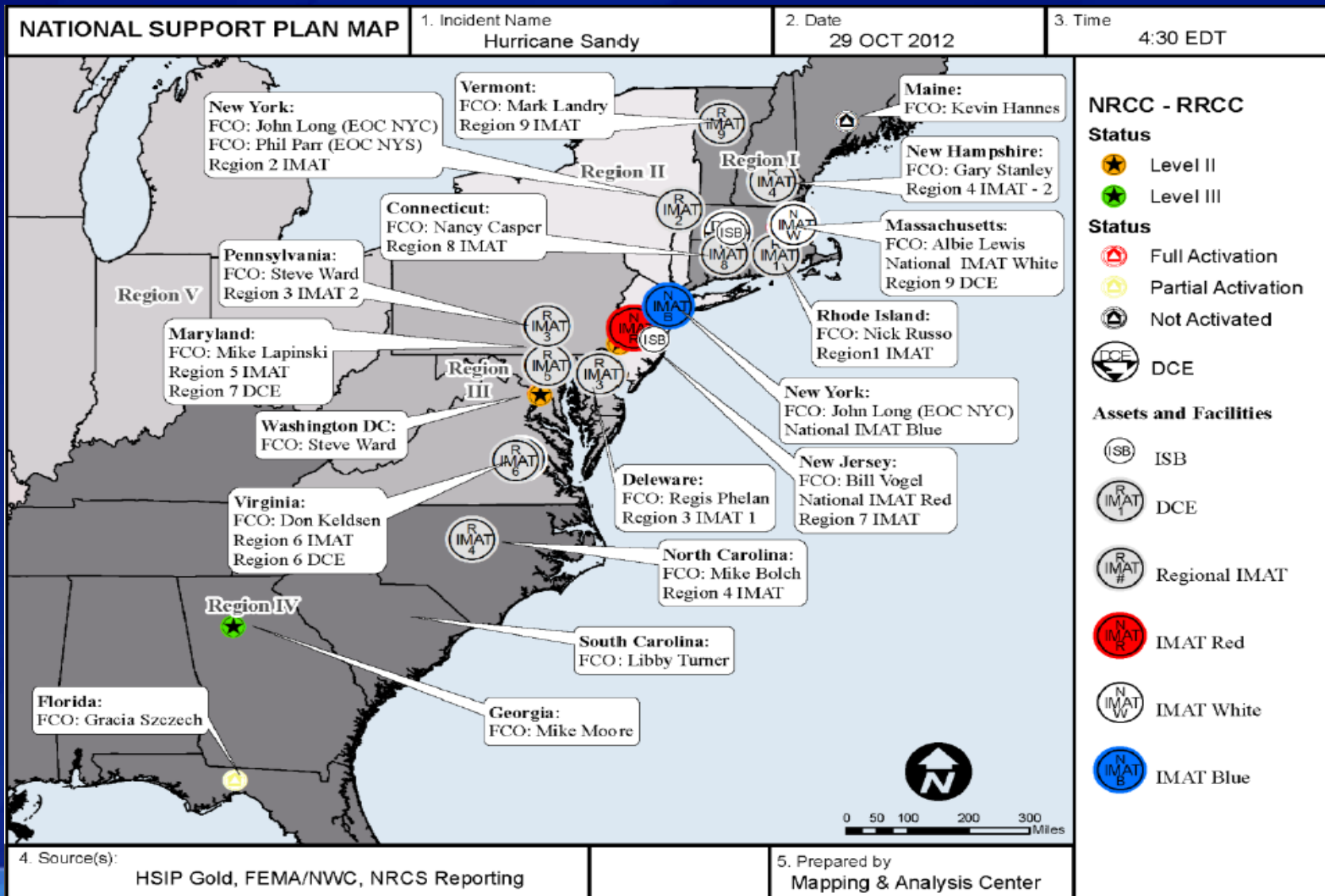
Outlined areas denote current position of systems Outlook. Color indicates probability of tropical cycl

Low <30%      Medium 30-5



Hurricane Sandy, Oct. 28, 2012

# Initial Federal Response



# Disaster Epidemiology Response Activities

- ❑ **Rapid Needs Assessment**
  - NYC assess mental health impact
  - Modified CASPER sampling strategy
  
- ❑ **Surveillance**
  - Morbidity
  - Mortality
  
- ❑ **Integrated Research Approach**



# Disaster Epidemiology Response Activities

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## American Red Cross Shelter Surveillance

- ❑ Since 1987 CDC has collaborated with Red Cross on disaster health surveillance
- ❑ MOU to advance coordination of disaster surveillance activities
- ❑ Client health data collected from shelters with medical stations is transmitted to CDC, analyzed at CDC, and reported back to Red Cross and partners



## Shelter Surveillance- New Jersey

- ❑ Red Cross volunteers in NJ overwhelmed; requested assistance from CDC to collect shelter surveillance data
- ❑ CDC collaborated with NJ DOH to collect shelter data and implement a sustainable method for remote reporting
- ❑ Field team focused on largest shelters, those expecting to remain open the longest and those with Red Cross Health Services (21 of 93 NJ shelters)
- ❑ Data sent daily to CDC; data was aggregated and summarized in daily report





# Shelter Surveillance- New Jersey

- ❑ **Aggregate, syndromic data**
  - Captured health needs: acute, follow-up, exacerbation of chronic condition, injury
  - About 50% presented with acute symptoms; 33% follow-up care
- ❑ **Data collection more complete and timely with deployed staff; once established, process continued with smart phones**
- ❑ **Based on recommendations, simplified surveillance form and created additional training materials**



## Shelter Surveillance- New York

- ❑ NY data collected via Red Cross volunteers (CDC not deployed to assist)
- ❑ Surveillance in Red Cross shelters, NY shelters (after 2 first 2 weeks)
- ❑ Surveillance with outreach services
  - Includes household visits, hotline calls, distribution centers, hotel visits
  - Outreach teams targeted multiple geographic areas
- ❑ Most common reason for visits were follow-up care, mental health and exacerbation of chronic conditions



# Aggregate Surveillance Reports

- ❑ Collate data from various surveillance sources
- ❑ Create comprehensive national picture
- ❑ Difficult because of varied data collection methods

**ASPR**  
ASSISTANT SECRETARY FOR  
PREPAREDNESS AND RESPONSE

**Fusion**

ASPR Fusion Cell Surveillance Report\* (FOUO)  
Sandy Response  
1 November 2012

**I. Analyst Notes**  
This report serves as an initial summary of patient encounters for this response. It is intended to provide situational awareness for ESPB partners.

**II. Encounter Counter**

Patient Encounters	Registration Date	Total (ALL)
1	30OCT2012 - 31OCT2012	161

**III. Res**  
At the t

**IV. To**

**Rank**

**Surveillance Data Captured by American Red Cross and New Jersey Shelters During Hurricane Sandy, November 2012 – Disaster Relief Operation (DRO) 144-13**

Reporting Date: November 21, 2012

**Total Clients Seen**

- 5 shelters completed aggregate forms for November 20, 2012
- Total number of client visits on November 20, 2012 (24 hours timeframe) was 87\* (Figure 1)
- Shelter 1 had the highest frequency of client visits (n=38) followed by Shelter 2 (n=23) and Shelter 3 both with 9 client visits.

**Figure 1. Daily (24 hrs) number of client visits seen by shelter, Hurricane Sandy, New Jersey, Oct. 30 – Nov. 21, 2012**

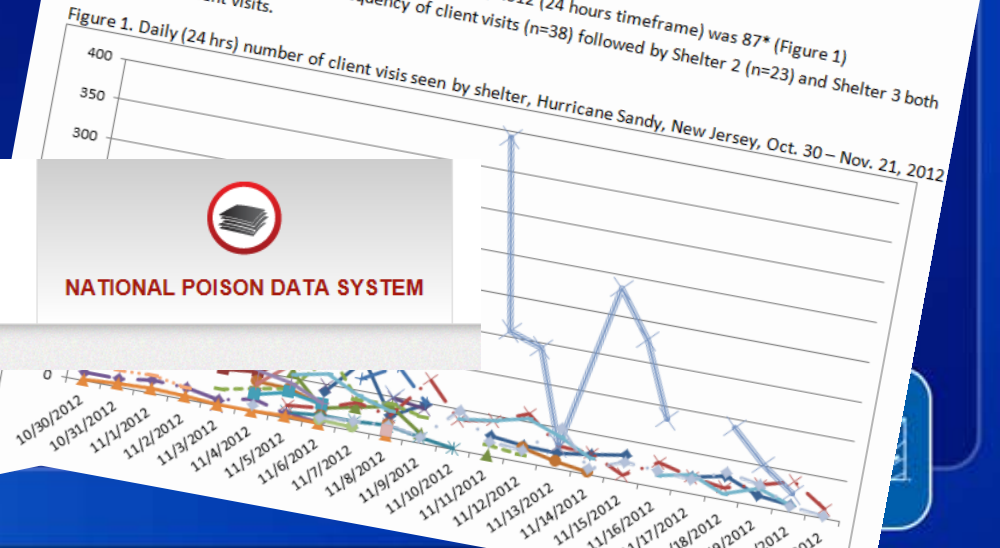
**POISON**  
**Help**  
1-800-222-1222  
AAPCC

**ALERTS**

**PREVENTION**

**NATIONAL POISON DATA SYSTEM**

Age Range	n	%	n	%	n	%	n	%
<2 years	-	-	-	-	4	11	7	71
2 to 17 years	3	21	7	64	21	55	18	18
18 to 65 years	11	79	4	36	10	26	18	-
>65 years	-	-	-	3	8	-	-	-
No Data	-	-	-	27	32	64	89	91
Incoming Acuity	13	93	3	27	5	13	9	9
Non-Urgent	-	-	7	64	1	3	-	-
Urgent	7	-	1	9	1	3	-	-



# Public Health Outcomes of Surveillance Efforts

- ❑ **Surveillance efforts brought together partners for data sharing**
  - American Red Cross
  - NJ Department of Health
  - NY Department of Health
  - Centers for Disease Control and Prevention
  - Local health departments
- ❑ **Timely data sharing fostered public health interventions**
  - Signage, resources for public health
  - Rapid response to disease outbreaks
  - Targeting of health resources (prescription refill assistance, physicians/nurse practitioners)

# Recovery: Integrated Research Approach

- ❑ Experiences from differing disasters have revealed gaps in information that can be addressed through better science and research<sup>1,2</sup>
- ❑ Experts convened from DHHS, state health departments and other organizations to examine how response and recovery to disasters could be enhanced through science and research
- ❑ Disaster Relief Appropriations Act of 2013 created to support research priority areas to aid recovery from public health impact of Sandy
- ❑ A portion of funds were given to CDC for Sandy-related research

<sup>1</sup>Dynamics of Preparedness Conference, held November 2012, University of Pittsburgh, Pittsburgh, PA  
([https://midaspitt.edu/index.php?option=com\\_content&view=article&id=269&Itemid=474](https://midaspitt.edu/index.php?option=com_content&view=article&id=269&Itemid=474))

<sup>2</sup>Lurie, N., Manolio, T., Patterson, A. P., Collins, F., & Frieden, T. (2013). Research as a part of public health emergency response. *New England journal of medicine*, 368(13), 1251-1255.



# CDC Funding Opportunity Announcement (FOA)

## □ CDC FOA

- \$4,325,000 funding available for research projects

## □ Priority Research Areas

- Mold mitigation and related health issues
- Characterization of the morbidity and mortality among the at-risk and general populations impacted by Hurricane Sandy
- Evaluation of the public health system response



# CDC Research Supported by Disaster Relief Appropriations

- ❑ **Investigation of carbon monoxide (CO) exposures**
  - Characterization of CO exposures
  - Determine risk factor and prevention strategies
  
- ❑ **Mortality surveillance evaluation**
  - Compare death certificates, Red Cross data, and media reports
  - Determine accuracy of media reports for use as timely data



# Questions?

## Contact information

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The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention

