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THE STATE UNIVERSITY OF NEW JERSEY

Use of New Jersey Poison Information and Education System (NJPIES) During Hurricane Sandy


Northeast Regional Epidemiology Conference 2015

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Hurricane Sandy

- Most destructive storm of the 2012 Atlantic hurricane season
- Widespread power outages, evacuations, gas shortages, flooding
- Led to potentially toxic exposures, unintentional misuse of medicine, and a need for information related to poisons/toxins



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Background - NJPIES

- NJPIES, also known as the NJ Poison Control Center, is the sole poison control center in NJ
- 24/7 emergency and information hotline
- Serves the public and health care professionals
- Averaged 64,650 cases annually during 2010-2012
- Housed at Rutgers New Jersey Medical School in Newark
- Remained open during Hurricane Sandy (backup generator and ability to switch to direct telephone lines)

Background – Literature Review

Impact of Hurricane Ike on Texas Poison Center Calls (Forrester, 2009)

- During the evacuation and landfall period, mean daily call volume for gasoline exposure increased from baseline (pre-evacuation).
- During post-evacuation, mean daily call volume increased from baseline for both carbon monoxide and gasoline.

Background – Literature Review

A Review of Disaster-Related Carbon Monoxide Poisoning: Surveillance, Epidemiology, and Opportunities for Prevention (Iqbal, Clower, Hernandez, et al., 2012)

- Carbon monoxide poisoning is a leading cause of morbidity and mortality in disaster-affected areas.
- Generators were the primary exposure source for 83% of fatal cases and for 54% of non-fatal cases.
- Close to 83% of fatal and 53% of non-fatal cases occurred within 3 days of disaster onset.

Study Purpose

- Characterize the use of NJPIES in the days immediately preceding, during, and after Hurricane Sandy to determine opportunities for targeted public health education and intervention

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Methods: Data Source

- Retrospective review of electronic NJPIES case data. This presentation will cover period from Oct. – Dec. 2012
- Each call to NJPIES is recorded electronically, and calls are grouped into individual cases (can be multiple calls per case).
- NJPIES collects over 20 variables and a running narrative per case.
- Case data is stored in the TOXICALL® System, a data collection system developed for poison control centers.

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Methods: Data Collection

- Most Sandy-related cases had been coded as such by NJPIES staff either in real-time or retroactively via case narrative review
- Additional cases identified via case narrative review expanded the set of Sandy-related cases

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Sandy-related time points

Oct. 26-30 2012
Evacuation and Landfall

Oct. 31 2012–
Apr. 30 2013
Post-evacuation

May 1 2013 –
Mar. 31 2015
Long-term effects

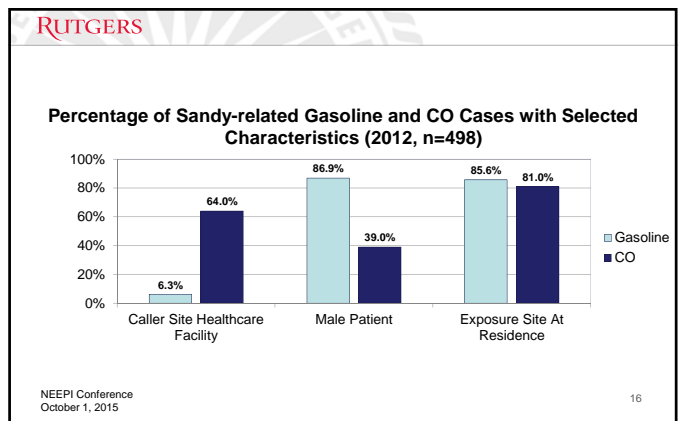
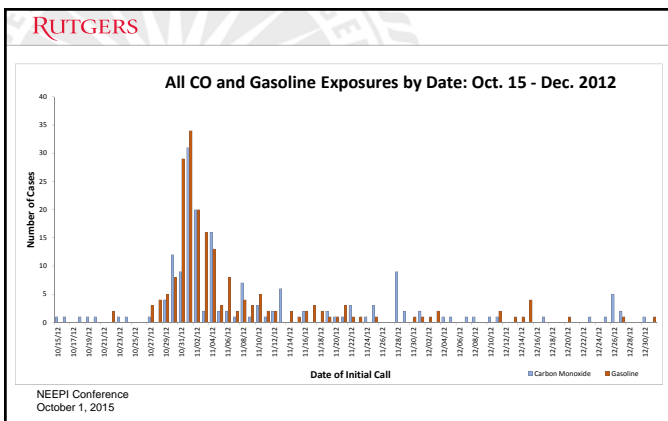
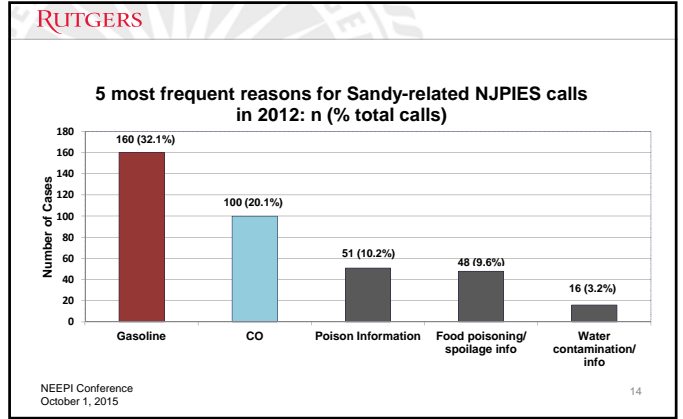
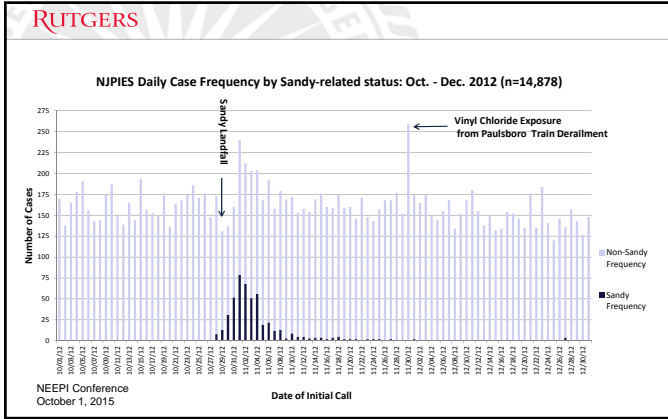
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NJPIES 2012 Sandy-related Case Frequency by Date (n=498)

Initial Call Date	Number of Cases
10/26/2012	1
10/27/2012	1
10/28/2012	8
10/29/2012	13
10/30/2012	31
10/31/2012	52
11/01/2012	79
11/02/2012	68
11/03/2012	51
11/04/2012	56
11/05/2012	19
11/06/2012	22
11/07/2012	12
11/08/2012	13
11/09/2012	3
11/10/2012	9
11/11/2012	5
11/12/2012	5
11/13/2012	4
11/14/2012	4
11/15/2012	2
11/16/2012	4
11/17/2012	5
11/18/2012	2
11/19/2012	2
11/20/2012	2
11/21/2012	2
11/22/2012	1
11/23/2012	2
11/24/2012	1
11/25/2012	0
11/26/2012	1
11/27/2012	0
11/28/2012	0
11/29/2012	1
11/30/2012	0
12/01/2012	0
12/02/2012	0
12/03/2012	0
12/04/2012	0
12/05/2012	0
12/06/2012	0
12/07/2012	0
12/08/2012	0
12/09/2012	0
12/10/2012	0
12/11/2012	0
12/12/2012	0
12/13/2012	0
12/14/2012	0
12/15/2012	0
12/16/2012	0
12/17/2012	0
12/18/2012	0
12/19/2012	0
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12/21/2012	0
12/22/2012	0
12/23/2012	0
12/24/2012	0
12/25/2012	0
12/26/2012	0
12/27/2012	0
12/28/2012	0
12/29/2012	0
12/30/2012	0
12/31/2012	0
01/01/2013	0
01/02/2013	0
01/03/2013	0
01/04/2013	0
01/05/2013	0
01/06/2013	0
01/07/2013	0
01/08/2013	0
01/09/2013	0
01/10/2013	0
01/11/2013	0
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02/02/2013	0
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02/05/2013	0
02/06/2013	0
02/07/2013	0
02/08/2013	0
02/09/2013	0
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02/15/2013	0
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02/26/2013	0
02/27/2013	0
02/28/2013	0
02/29/2013	0
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03/04/2013	0
03/05/2013	0
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03/10/2013	0
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03/17/2013	0
03/18/2013	0
03/19/2013	0
03/20/2013	0
03/21/2013	0
03/22/2013	0
03/23/2013	0
03/24/2013	0
03/25/2013	0
03/26/2013	0
03/27/2013	0
03/28/2013	0
03/29/2013	0
03/30/2013	0
03/31/2013	0

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Sandy-related CO and Gasoline Exposures per 100,000*, Leading Counties, 2012

Carbon Monoxide Exposures		Gasoline Exposures	
County	Rate	County	Rate
Monmouth	4.1	Monmouth	3.8
Union	2.2	Somerset	3.0
Morris	1.8	Passaic	3.0
Burlington	1.6	Union	2.9
Bergen	1.4	Sussex	2.7
Middlesex	1.1	Morris	2.4
Ocean	1.0	Bergen	2.2
Warren	0.9	Essex	1.9
Mercer	0.8	Warren	1.9
Hunterdon	0.8	Hunterdon	1.6

*Based on U.S. Census 2012 Population Estimates
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- Challenges and Limitations**
- **Geographic Analysis:**
 - Case data includes only caller location (may differ from patient location)
 - Locations with heavily utilized healthcare facilities over-represented
 - **Case Narratives:**
 - Rich with data for case characterization
 - Only source of follow-up call dates
 - VERY time-intensive to review
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- Conclusions**
- NJPIES provided essential guidance and information to both healthcare facilities and individuals throughout New Jersey before, during, and after Hurricane Sandy
 - This study identified the need for enhanced public education and intervention particularly regarding:
 - Gasoline siphoning
 - Proper use of gasoline-powered generators and cleaning equipment
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Thank You!

Questions or Comments?

Sandy-related Call

One of the first calls occurred on 10.28.2012 at 5:30 pm (before Sandy landfall).

- Attempted suicide
- Son called after father, age 85, ingested 30 pills of Amlodipine after becoming upset from notice to evacuate.
- Residence close to beach
- Patient already in enroute to HCF when son called
- Outcome: Classified by NJPIES as moderate effect (non life-threatening symptoms usually indicating treatment with no residual disability)