Environmental and Occupational Surveillance Activities at NJDOH: A New Use of Real Time Emergency Department Registration Data

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Background – EpiCenter™
- Secure online system collecting emergency department (ED) registration data in real-time
- Developed by Health Monitoring Systems, Inc. (HMS)
- 97% of NJ ED facilities (78 out of 80) online
- Monitors key words in chief complaint field
- Ongoing statistical analyses
  - Detects anomalies
  - Triggers notifications
- Used for both communicable & non-communicable syndromic surveillance

EpiCenter’s Capabilities
- Real-time data for all ED visits
  - Minimal work for reporting facilities day-to-day
- Multiple analysis options
  - Charts, graphs, and mapping
- Alert e-mails
- Download capabilities
- Custom classifier development
- Anomalies can be filtered by region, time, classifier, home or facility location

Surveillance Process
- Staff review case records with intake comments, patient status & ICD diagnostic codes
- If additional info needed, DOH contacts ED for details or clarification
- Comment section allows investigators to communicate notes to others
Line listing of patients detailing:
- Date and time of ED visit
- Sex and age of patient
- Patient’s residential zip code
- Hospital and record number
- Chief complaint/reason for visit

Using EpiCenter for Sandy
- Quickly established a “Hurricane” classifier
- Facilities were requested to use “Sandy” or “storm” as a key word
- In Oct 2012, 75 facilities reporting - several key hospitals in Ocean & Monmouth counties were not using EpiCenter yet

Sandy-Related ED Visits by Category, 2012
Data from EpiCenter Syndromic Surveillance System
Daily Counts of Sandy-related ED Visits by Category

Development of Surveillance Suite for Extreme Weather Events

- Carbon monoxide exposure/poisoning
- Disrupted outpatient medical care
- Cardiovascular
- Tree-related injuries
- Motor vehicle accident
- Gastrointestinal illness
- Respiratory illness
- Mental-health related illness

Examining Temporal Trends – Heat-related Illnesses in EDs, Summer 2015

Tracking Heat-related ED Visits, Summer of 2015

Analysis by J. Fagliano, NJDOH

NJDOH's Heat-related Press Release and Tweets

Analysis by R.E. Opiekun, data from EpiCenter, NJDOH
Additional Events Detected through EpiCenter Surveillance

- Chemical exposures
  - two children sickened by acute chlorine exposure in an apartment complex pool
- Occupational injuries, illnesses, & poisonings
  - exposure to toluene vapor at a nail polish manufacturing plant
  - six cases of pesticide exposure at a produce repacking facility
  - carbon monoxide poisoning of two police officers due to exhaust problems in their vehicle

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