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# Using Hospital ED Data to Identify Mental Illness Trends After Hurricane Sandy

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## Objective

1) To define mental health keywords using daily hospital emergency department chief complaint (EDCC) data during and after Hurricane Sandy 2) To track short- and long-term trends in mental health EDCCs. 3) To compare mental health EDCCs in affected counties to the rest of the New York State population.

## Introduction

EDCC data provides an opportunity for capturing the early mental health impact of disaster events at the community level, and to track their impact over time. However, while rapid mental health assessment can facilitate a better understanding of the acute post-disaster period and aid early identification of persons at long-term risk,[1] determining how wide a net to effectively capture the critical range of mental health sub-categories has not yet been clearly defined. This project creates a comprehensive set of mental health sub-category keywords, and applies them to evaluate short- and long-term trends in post-Hurricane Sandy mental health outcomes in New York State.

## Methods

Mental health keyword lists were generated through a literature search, consultation with subject matter experts, and collaboration with New York City and New Jersey health department syndromic surveillance staff. These lists were used to collect mental health EDCCs before, during, and after Hurricane Sandy. We conducted statistical analyses to compare the number of mental health chief complaints in three affected counties (Nassau, Suffolk, and Westchester) with a non-affected area (the rest of New York State, excluding New York City). Three time periods were tested: the 12-day Sandy period, the three-month period post-Sandy, and one year post-Sandy. To control for seasonality, these periods were also compared to the average of the same date ranges for the previous five-year periods. Data were analyzed using SAS 9.3. Chi-square tests and negative binomial regression models were used to test associations with statistical significance at 0.05.

## Results

Eight sub-categories of mental health related keywords were generated. Compared with the unaffected area, the relative risk of EDCCs in the affected counties was significantly higher during the 12-day Sandy period (RR 1.16, 95% CI 1.03-1.31), the 3-month post-Sandy period (RR 1.18, 95% CI 1.12-1.24), and the 1-year post-Sandy period (RR 1.15, 95% CI 1.13-1.18). The increase in the 3-month period post-Sandy was not significant (RR 1.12, 95% CI 0.99-1.26). Analysis of population vulnerability to Sandy is still ongoing.

## Conclusions

This project provides a sound model for utilizing EDCC data. Tracking mental health trends during and after disaster events can provide valuable insight into the impact and trends of mental health EDCC on a community for the purposes of mitigation and future disaster planning.

## Keywords

syndromic surveillance; mental health; disaster

## References

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