

ABSTRACT

Utilization of Florida poison control data and Emergency Department chief complaint data to identify clusters of carbon monoxide poisoning

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Introduction

The Florida Department of Health (FDOH) previously monitored Florida Poison Information Center (FPICN) data for timely detection of increases in carbon monoxide (CO) exposures before, during, and after hurricanes. Recent analyses have noted that CO poisonings have also increased with generator use and improper heating of homes during cold winter months in Florida. Similarly, increases in CO poisoning cases related to motor vehicles have been observed during summer months. CO is an odorless, colorless, poisonous gas causing sudden illness and death, if present in sufficient concentration in ambient air. The most common signs and symptoms include headache, nausea, lethargy/fatigue, weakness, abdominal discomfort/pain, confusion, and dizziness. This presentation summarizes Florida's experience in identifying CO poisoning clusters using ESSENCE-based syndromic surveillance.

Methods

The ESSENCE-based syndromic surveillance system provides access to data from the FPICN, Emergency Department (ED) chief complaints and the FDOH reportable disease surveillance system (Merlin). ESSENCE was monitored for CO exposures during September 2009 through to August 2010, and all identified CO clusters were followed up and investigated. A cluster was defined as any two or more related cases of CO exposure. All CO cases matching the current case definition for CO poisoning were identified and entered into the FDOH disease reportable system, Merlin. Case ascertainment from these various sources was compared.

Results

The total number of CO clusters identified through ESSENCE-ED and FPICN data before investigation were 34 (88 reports of CO poisoning) and 19 (52 reports of CO poisoning), respectively. A total of 13 clusters were identified

by both the sources (total reports of CO poisoning: ED-35 and FPICN-46). Most of the clusters (ESSENCE-ED-15, FPICN-12, and both-2) identified through ED and FPICN data did not contain cases that matched the Florida case definition for CO poisoning and were therefore not counted as cases or confirmed clusters. About 11 clusters reported by ED and FPICN data (ED-4, FPICN-5, and both-2) did not have sufficient patient information for follow-up and were not confirmed.

Among all the reports that contained confirmed cases after investigations, 156 cases (confirmed-118, probable-16, and suspected-22) were reported from 1 September 2009 to 31 October 2010 in Florida. A total of 114 cases (confirmed-86, probable-13, and suspected-15) were associated with 34 different clusters. In all, 42 reported cases were not associated with cluster. Among all the confirmed clusters, ESSENCE-ED data have identified 15 clusters (61 cases), FPICN identified 2 clusters (6 cases), and 9 clusters (29 cases) were identified through both the sources. The remaining 8 clusters (18 cases) were identified by other sources such as hospitals (3), medical examiners' office (2), and a call from citizen/Media (3).

Conclusions

Additional data sources such as FPICN and ED chief complaint data are very efficient in detecting reportable conditions like CO poisoning. Three out of four recent clusters were detected using ESSENCE. Timely investigation and reporting of CO poisoning can be ensured by early notification to the local CHDs.

Acknowledgements

This paper was presented as an oral presentation at the 2010 International Society for Disease Surveillance Conference, held in Park City, UT, USA on 1–2 December 2010.