

Utilization of the Syndromic Surveillance Framework for Detection of Heat-Related Illnesses

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OBJECTIVE

This paper describes the application of syndromic surveillance methodologies to identify non-bioterrorism syndromes particularly, the incidence of heat-related syndromes during the hot Oklahoma summer months.

BACKGROUND

The use of syndromic surveillance in Tulsa County began as an attempt to identify symptoms associated with Category A agents, namely Anthrax. The underlying premise for adopting the system was the hope that an astute clinician, upon observing clusters of cases exhibiting certain symptoms, would rapidly notify the local health department so that an epidemiological investigation could be initiated. The system is also designed to send spatial and temporal alerts when cases of pre-defined syndromes are observed. Since 2002, when the system was first implemented, Tulsa Health Department has looked for other ways to integrate syndromic surveillance into its daily operations, and to expand its focus from an exclusive bioterrorism tool, to one that is broader in scope. One such way has been to utilize the system to identify other syndromes and conditions. Collected emergency data has therefore, been used to identify occurrences of animal bites, mental conditions etc. This paper addresses the use of syndromic surveillance for the identification of heat-related illnesses during the hot Oklahoma summer months [1].

METHODS

Oklahoma's hot summer months often result in increased emergency room visits with heat-related complaints such as dehydration, cramps and loss of consciousness. Outcomes for these visits range from mild therapies to hospitalization for more severe cases. Based on the reported chief complaints from 2002 – 2006, along with CDC case definitions for certain heat-related illnesses, syndrome definitions were created for the following: heat cramps, heat syncope, dehydration, heat exhaustion, heat stroke and heat edema [2]. Alerts were created to notify staff of each occurrence of these syndromes. Based on the results, daily and/or weekly results were reported to the local Emergency Medical System (EMS) Coordinator.

RESULTS

The system identified cases of heat-related illnesses. Heat syncope was the most commonly observed syndrome. It is defined as "loss of consciousness OR unconsciousness OR light-headedness OR weakness OR weakness AND dehydration OR dehydrated".

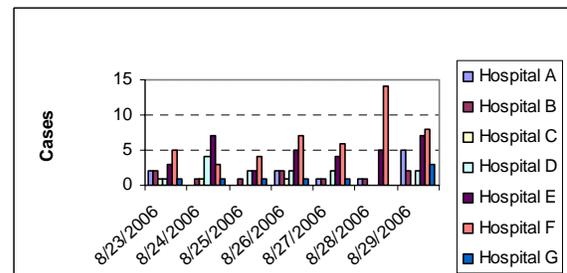


Figure 1 – Observed cases of Heat Syncope in Tulsa County, August 2006.

CONCLUSIONS

Syndromic surveillance is a valuable tool that can be used to identify conditions falling outside the scope of bioterrorism. Its use for identification of heat-related syndromes provided a forum for better serving the citizens of Tulsa County as the information gathered was distributed to healthcare professionals and to the general public so that appropriate interventions could be introduced. Tulsa Health Department will continue to monitor seasonal trends and will continue to identify other areas in which syndromic surveillance may be useful.

REFERENCES

- [1] Tulsa Area Syndromic Surveillance Data, 2002 – 2006.
- [2] CDC. Prevention and Management of Heat-Related Illness Among Spectators and Staff During the Olympic Games - - Atlanta, July 6-23, 1996. MMWR 1996; 45:631-633.

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