(175) Effects of Seasonal Variation on Hazardous Chemical Releases

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Background: Accidental and intentional chemical release incidents are an increasing threat to our society. These events occur year round under different seasonal circumstances. This study evaluates the impact of seasonal variation on hazardous chemical releases (HCRs) throughout the Hazadous Substance Emergency Events Surveillance (HSEES) database.

Methods: The HSEES database was used to test if there is an association between seasons and HCRs. Logistic regression was used to assess the type of HCR, the type of chemical substance, the first contributing factor, and the geographic region and the season of the year.

Results: In the USA, more HCRs occur during spring and summer than during fall or winter. In the spring and summer, more transportation-related releases occur. In the summer, there are more incidents involving acids, ammonia, chlorine, pesticides, paints, and dyes. There also is seasonal variation among the HCR incidents with respect to different areas of the country. In the Midwestern states, there are significantly more incidents in the spring and summer. However, in the Northeast, there are significantly fewer events in spring, and in the west, fewer events occur in summer. Overall, more events occur in the South, but in the South there are significantly fewer incidents in the fall. No association was found between the number of victims or the number of victims requiring hospital treatment and the seasonal variation.

Conclusion: Because a clear association is found in the seasonal attributes of some types of HCRs, more mitigation and preparedness activities are needed to reduce the occurrence of HCRs and to increase the effectiveness of the response.

Keywords: chemical releases; geography; hazardous substance; response; seasons

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(176) Preparedness for Mass-Casualty Incidents

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An Accident and Emergency Department (A&E) or Emergency Department has some special functions other than diagnosing and treating daily cases. Events with >3–4 injured or sick patients can occur. Do hospitals have plans for managing such cases?

A special exercise to explore the possible lack of management during mass-casualty incidents (MCIs). There were problems at the scene, including: (1) local communication; (2) identification of injured people; (3) documentation of on-scene triage; (4) communication between the on-scene command post and the place of first treatment; and (5) a difference in attitude between an exercise and (later) a real MCI.

During an actual MCI located in an urban environment, imperfect communication with the ambulance service, long reaction times, slow patient-processing, and the difficulties encountered with the administrative aspects of patient-uptake demonstrated the negative effects of MCIs.

Since the first exercise involved multinational players, the problems may not have been unique. Future research should describe the experience with such events, ways to bypass the hiatus between the on-scene and hospital-based groups, and prepare A&E or Emergency Departments for MCIs.

Keywords: disaster; disaster planning; emergency department; mass-casualty incidents (MCIs); preparedness

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(177) Acceptation, Evaluation, and Risk Acuity Classification Based on Andorra and Canadian Models: A Pilot Project in a Private, Tertiary Hospital in Rio de Janeiro, Brazil

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The objective of this study was to evaluate the impact of a triage scale design based on the Andorran Model of Triage Scale Design and the Canadian Risk Acuity System. It was designed to estimate the immediate risk, reduce waiting time to see a doctor, avoid patients leaving without being seen by a doctor, and reduce the return of patients.

This was an observational study and was carried out in The Hospital Quinta D'Or Emergency Department, Rio de Janeiro, Brazil. About 4,000 patients are evaluated per month and there is a 60–90 minutes waiting period to see a doctor at this hospital.

Patients were evaluated from 11–26 October 2006, considering a 24 h of 7 shifts per week by the Triage Team (TT). The TT consisted of: (1) one Social Assistant; (2) seven doctors and nurses; (3) seven emergency technicians; and (4) one triage-educated doctor, using an instrument based on the National Triage Scale. Overall, 996 patients were evaluated and grouped in a five-level triage assessment: 1 patient (0.1%) was a Level 5 (Emergent); (2) 50 patients (5.0 %) were Level 4 (Less Emergent); (3) 59 patients (5.9%) Level 3 (Urgent); (4) 281 patients (28.2%) Level 2 (Less Urgent); and (5) 590 patients (59.2%) Level 4 (Not Urgent). The medium triage period of time was 5.02 minute (st. 3–5 minutes).

This conclusion shows a similarity and confirms the predictive validity of the scale used in the Andorran model for judgment of the urgency of a patient's condition.

Keywords: Andorra model; Brazil; Canadian model; patient condition; urgency

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