The Utilization of Hospital-Based Decontamination Facility for Chemical Incidents

R Ponampalam MBBS, FRCS, FAMS
Singapore General Hospital, Singapore, Singapore

Introduction: The constraints of performing prehospital decontamination in mass casualty incidents involving the release of chemical agents at disaster sites in modern cities are notable. Compounding this are highly built-up urban areas with significantly high population density and traffic congestion. This places the burden of performing such decontamination on nearby healthcare facilities. Based on this need, public hospitals in Singapore have been equipped with decontamination facilities. We present a review of the utilization of this facility at our institution.
Method: A retrospective review of the utilization of the hospital decontamination station (HDS) was carried out, noting its frequency, purpose, and outcomes.
Results: Since its construction, the HDS has been deployed successfully many times a year for both routine training and disaster preparedness exercises. Despite the lockdown measures due to Covid-19, with concomitant reduction in social and economic activity, the HDS was activated five times for decontamination of chemical contaminated casualties. It is fortunate that, although HDS training activities were curtailed during this period, emergency department (ED) staff were still able to function effectively using prior experience, donning chemical protective suits, and performing decontamination. The semi-automated HDS facilitated rapid deployment which contributed to ease of use of this resource for timely decontamination of casualties with good outcomes.
Conclusion: Chemical incidents resulting in contaminated casualties are uncommon events. Nonetheless hospitals must be prepared to deal with this situation in a timely manner. The rapidly deployable HDS has become an important resource and an operationally ready solution for dealing with chemical contaminated casualties presenting at short notice to the ED. Regular training and deployment exercises utilizing the HDS provide staff familiarity critical to overall readiness for chemical incidents. This strategy provides a reliable countermeasure in an all-hazards approach to disaster preparedness at the hospital.

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The Effect of Weather and Heat-Related Variation on Patient Presentation and Transport Rates

Danielle DiCesare MD, Peter Duan MD, Desmond Fitzpatrick MD, Stan Paynter, Christian Zuver MD
Orange County EMS System, Orlando, USA

Introduction: Mass gatherings are becoming increasingly more common and require adequate preparedness in order to ensure the safety of participants. Standardized planning tools for optimal resource utilization during these events are lacking. We analyzed prehospital data from a high census US theme park to determine whether heat index and wet bulb index are predictive of patient presentation and transport rates.
Method: This was a retrospective analysis of prehospital data from a high census US theme park. Daily EMS data including call and transport volume as well as corresponding local weather information were gathered between May 2021 to September 2022. The relationship between patient presentation rate and transport rate and weather information was analyzed using Analysis of Variance Testing. Patient presentation rates were calculated based on average daily attendance according to unofficial attendance tracking sources. Seasonal attendance variation was accounted for by comparing variations in patient presentation and transports to the average call and transportations rates for that respective month.
Results: A total of 515 days of data were included. We found that higher wet bulb temperature readings correlated with both higher patient presentation rates per 10,000 attendees (>80F 4.09, 70-79F 3.39, <69F 2.84 patients; $P<0.05$) and increased hospital transport rates per 10,000 attendees (>80F 1.38, 70-79F 1.29, <69F 1.09 patients; $P<0.05$). Adjusted for seasonal variation of attendance, higher wet bulb temperatures were likewise correlated with increased presentation (>80F 102%, 70-79F 98%, <69F 93% of average patients per day; $P<0.05$) and transports (>80F 101%, 70-79F 100%, <69F 93% of average transports per day; $P<0.05$). Additional analysis noted similarly increased patient presentation and transport rates on days with higher maximum heat indices.
Conclusion: In the setting of a high census US theme park, higher wet bulb and heat indices were strongly associated with increased patient presentation rates and patient transport rates.

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Challenges and Complexities of Providing Emergency Medical Services During Covid-19 Pandemic in Nepal

Ramesh Maharjan MBBS, MD GP, DM[1], Sabin Thapaliya MBBS, MD[2], Prasun Tamang BA, IT[3], Rashmisha Maharjan MBBS, EMDM(c)[4]
1. Department of Emergency Medicine, Maharajgunj Medical Campus, Institute of Medicine, Tribuvan University Teaching Hospital, Kathmandu, Nepal
2. Department of Infectious Disease Medicine, Maharajgunj Medical Campus, Institute of Medicine, Tribhuvan University Teaching Hospital, Kathmandu, Nepal
3. Department of Information Technology, Tribhuvan University Teaching Hospital, Kathmandu, Nepal
4. Nepal Disaster and Emergency Medicine Center, Lalitpur, Nepal

Introduction: During the Covid-19 Pandemic, the Department of Emergency Medicine is the one of most busy in Nepal. Challenges and complexities of providing emergency medical service during the waves of the Covid-19 pandemic in Nepal were analyzed.
Method: Three years (2020 – 2022) of data was analyzed from Covid patients registered in Tribhuvan University Teaching Hospital (TUTH), Institute of Medicine for reference with National Data of Ministry of Health and Population, Government of Nepal.
Results: On November 15, 2022, there were 5,969,338 Covid PCR tests and 1,452,639 Covid Antigen tests in Nepal with