

Abstracts of Oral Presentations-WADEM Congress on Disaster and Emergency Medicine 2019

CBRN

Chemical, Biological, Radiological, Nuclear, and Explosive (CBRNe) Preparedness: Perceptions of Australian Emergency Department (ED) Doctors and Nurses

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Introduction: Clinicians working in emergency departments (ED) play a vital role in the healthcare response to chemical, biological, radiological, nuclear, and explosive (CBRNe) events. However, ED clinicians' individual and workplace preparedness for CBRNe events is largely unknown.

Aim: The aim of this research was to explore Australian ED nurses and doctors' perceptions of individual and workplace preparedness related to CBRNe events.

Methods: The study populations were Australian nurses and doctors who work in EDs. Data was collected via a survey with 43 questions requiring binary responses or a rating on a Likert scale. The survey consisted of questions relating to the participant's previous disaster training, perceived likelihood of a CBRNe event impacting their ED, perceived level of knowledge, perceived personal preparedness, perception of ED preparedness, and willingness to attend their workplace. Data were analyzed using descriptive and inferential statistics.

Results: There were 244 complete responses, 92 (37.7%) doctors and 152 (62.3%) nurses. When comparing doctors and nurses, there was a statistical difference between gender ($p = < 0.001$), length of employment ($p = < 0.001$), and role in the ED ($p = < 0.001$). Doctors and nurses had a similar level of previous training except for practical training in mask fitting ($p = 0.033$). CBRNe events were considered separately. Perceived level of knowledge, perceived personal preparedness, and perception of ED preparedness were significant predictors of willingness to work in all CBRNe event. Perceived likelihood of a CBRNe event impacting their ED was not a predictor of willingness.

Discussion: This research contributes to an overview of the current status of Australian ED clinicians' preparedness for CBRNe response. To increase the willingness of ED doctors and nurses attending their workplace for a CBRNe event, strategies should focus on enhancing individuals' perceived level of knowledge, perceived personal preparedness, and perception of ED preparedness.

Prehosp. Disaster Med. 2019;34(Suppl. 1):s9

doi:10.1017/S1049023X19000384

Crisis State of Medical Readiness and Citizen Preparedness Importance for Radiological and Nuclear Incidents

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Introduction: In 2017, members of our workgroup published on the readiness for nuclear and radiological incidents among emergency medical personnel.¹ Our findings, along with a review of pertinent literature, suggest that the state of medical preparedness for these incidents is in crisis. A 2018 publication addressing nuclear terrorism preparedness relegates medical preparedness to a low priority and describes it as potentially dangerous.² The crisis status of medical preparedness for these incidents is addressed.

Aim: To establish a prepared medical workforce and trained public for those at risk from nuclear or radiological disasters.

Methods: This Institutional Review Board (IRB)-approved survey published an article and used a relevant literature review.

Results: Readiness for nuclear and radiological incidents is lacking in multiple areas including education, training, identifying medical needs, willingness to come to work, and perception of relative risk among medical personnel.¹ Confounding this is recent prominent publication downplaying and discouraging medical preparedness for nuclear terrorism.² The importance of a readied workforce and a prepared public is identified.

Discussion: In 2013, we formed a multi-national workgroup focused on preparing health professionals and the public for clinical management of casualties during nuclear and radiological disasters. Modeling has demonstrated predictable casualty injury and illness patterns suggesting that early appropriate medical response will save lives. Readiness demands an educated, skillful, and willing-to-engage medical workforce. Our 2017 publication identified several areas that place medical preparedness at risk.¹ A significant risk to medical preparedness may lie in prominent publications discouraging the pursuit.² We firmly believe that medical preparedness is essential and begins with a prepared public.

References

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Prehosp. Disaster Med. 2019;34(Suppl. 1):s9

doi:10.1017/S1049023X19000396