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and minimize negative outcomes for patients, liability for festival leadership, and impact on local health care resources.

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## First Aid Training and Comfort in Non-Medical Event Staff

Matthew B. Munn

Emergency Medicine, University of British Columbia, Vancouver/BC/Canada

Study/Objective: To evaluate whether non-medical personnel feel adequately trained and prepared to act as first responders to potential medical emergencies at a multi-day music festival.

Background: Music festivals are a high-risk environment for medical presentations. Although dedicated medical services are often present at such events, non-medical volunteers and staff generally outnumber those with formal medical roles and are more likely to make the first point of contact with attendees in distress. Preparation for foreseeable emergencies makes sound safety sense, and more recently litigation has also underscored its importance in minimizing liability. Using the chain of survival model, the provision of timely first responder care by appropriately trained personnel has the best chance of affecting outcomes by minimizing morbidity, mortality, liability and impact on local health care infrastructure.

Methods: This study used an online survey provided to 2,200 non-medical staff and volunteers, at the 2016 edition of a weeklong electronic dance music event for 15,000 attendees.

Results: A total of 369 personnel participated, of that 87% had direct contact with festival attendees and 85% had some form of formal first aid training. However, only 51% of this training was up to date, 19% had no CPR training at all, and 49% of those who had did not consider it up to date. A majority of respondents felt first aid training would benefit attendees, but that it should not be a requirement for their position. Respondents were receptive to basic and advanced training free of cost. Most felt comfortable acting as a first responder in scenarios dealing with unconscious, agitated, non-breathing or pulseless patients.

Conclusion: Preparation of non-medical personnel for medical emergencies at music festivals can potentially increase safety and minimize negative outcomes. Such personnel appear comfortable with first response roles but may need help in maintaining training currency. Results may be applicable to other event types.

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## Effectiveness of Gamification of Mass-Gathering Health Concepts

Adam Lund<sup>1</sup>, Riley Golby<sup>2</sup>, Kerrie Lewis<sup>1</sup>, Sheila Turris<sup>3</sup>

- 1. Department Of Emergency Medicine, University of British Columbia, Vancouver/BC/Canada
- 2. University of British Columbia, Vancouver/BC/Canada
- Population Health And Chronic Disease Management, Vancouver Coastal Health, North Vancouver/BC/Canada

Study/Objective: To measure the effect of participation in a facilitated, board game-based, tabletop exercise focused on health services planning for Major Planned Events (MPEs).

Background: Current best practice for medical care at mass-gathering events involves the integration of event safety plans, on-site health services, and community acute health services into a systematic, coordinated, proactive approach. Unfortunately, as most teams operate in silos, lessons learned from previous event planning and implementation are not often systematically shared. In this study, we assessed the effects of an interactive tabletop gaming exercise on delivery and retention of mass-gathering conceptual knowledge. The use of gamification to deliver medical education is not a novel concept, but rather a well-documented method of engaging learners. Gamification provides opportunities for participants to apply knowledge in a "live-fire" context, to reflect on outcomes critically, and to use feedback and acquired skills to inform future behavior.

Methods: A convenience sample of 28 event race directors and 44 medical students were surveyed before and after engaging in a 90-120 minute, interactive, facilitated mass-gathering table-top exercise. Survey content assessed respondent comfort on a variety of pertinent considerations faced by event planners and medical direction teams. Domains of survey assessment included: attitudes and beliefs surrounding event preparation, event-specific medical knowledge, and event logistics.

Results: Comparison of pre- and post-exercise responses revealed that the mean and median comfort in all of the domains assessed improved within both populations. Participants rated this exercise as informative, and identified ways in which new knowledge would be applied at future MPEs.

Conclusion: In a convenience sample of race directors and medical students, the use of a facilitated mass-gathering health tabletop exercise is an effective delivery modality for the transmission and integration of knowledge related to the planning and delivery of health services for MPEs.

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## Point of Care Ultrasound at a Remote Multi-Day Mass Gathering: A Prospective Case Series

Ross Prager<sup>1</sup>, Colin Sedgwick<sup>1</sup>, Adam Lund<sup>1</sup>, Maja Stachura<sup>2</sup>, Daniel Kim<sup>2</sup>, Ben Ho<sup>2</sup>, Sam Gutman<sup>2</sup>

- Mass Gathering Medicine Interest Group, University of British Columbia, Vancouver/BC/Canada
- 2. Department Of Emergency Medicine, University of British Columbia, Vancouver/Canada

Study/Objective: We describe a novel application of Point of Care Ultrasound (POCUS) in a remote mass gathering at the 4-day Pemberton Music Festival 2016 attended by over 40,000 participants per day. The objective of this study is to prospectively evaluate the impact of POCUS on diagnosis, management, and disposition of patients.

Background: POCUS has become an important tool for hospital-based clinicians. This is the first study characterizing its use at a remote mass gathering where physicians face numerous challenges including limited resources, complex disposition decisions, and dynamic environments.