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mental status is one of the most common presentations to medical services at these events. It is challenging to care for these potentially critically ill patients, in and out of a hospital environment. To date, best management practices remain unclear for this common and high-risk subset of the festival population.

Methods: We present a case series of patients presenting to medical services with an altered mental status, attending a 15,000 attendee, multi-day, electronic dance music event. A retrospective chart review was performed on patient encounter forms from 2014-2016 to identify alterations in patient content or consciousness.

Results: Three event years were reviewed with 328 of 4,032 unique medical presentations deemed to have had altered content or consciousness. Of the altered content subset, 22 required physical or chemical restraint. Of the 255 altered consciousness presentations, 144 were transient syncope-like cases, 37 were seizure-like cases, and 41 had GCS <= 8 documented at some point during the visit. There were no endotracheal intubations or deaths. Seventy percent of altered patients stayed less than 30 minutes, and LOS was found to be inversely proportional to the lowest recorded GCS.

Conclusion: Managing the altered patient at a music festival is challenging. True aspiration risk in the GCS <= 8 subset remains unclear. High risk features for poor outcomes in altered patients include significant desaturations, active vomiting in an unresponsive patient, metabolic abnormalities, associated trauma, severe agitation, and failure to meet discharge criteria. Analysis of medical presentations for altered mental status at a music festival suggest a handful of discrete clinical presentations and best practices. A good understanding of these presentations aids in preparing, training, and equipping for similar events.

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### Camping, Cowboys, and Country Music: Patient and Resource Management at Canada's Largest Multi-Day Country Music Festival

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Study/Objective: This case study examines types of patients, methods of patient management, types of medical staff/responders used to manage and build medical capacity at a Canadian multi day, residential music festival. Objectives also include how a similar model could be used to manage lower acuity patients in an out-of-hospital context during disaster situations.

Background: Medical response and deployment of a field hospital at Canada's largest multi-day country music and camping festival. With over 60,000 attendees camping on site, in a rural area for a 5-day period. Medical needs at this large mass gathering event are varied and diverse. Over the 5-day period, a private event medical company had over 3,000 patient contacts, which significantly deferred from local EMS and hospital resources. Diversion and planning ensured local capacity did not become overwhelmed.

Methods: Data collection is from the event company's patient documentation forms, which are correlated electronically through a database.

Results: Data includes: number of patient contacts, types of injuries/illnesses, duration of patient contact, duration of patient contact per injury/illness type, acuity levels of patient transports, breakdown of injuries/illnesses diverted from local hospital and EMS, festival incident location (campground, music stages, other), number and type of personnel used at event and types/amounts of medical equipment/consumables used at the festival.

Conclusion: As a case study on an entire multi-day music festival in Canada of 60,000 attendees and 3,000 patient contacts, on-site patient management contributed greatly to reduce EMS transports and hospital visits.

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# Global Mass Gatherings: Implications and Opportunities for Global Health Security

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Study/Objective: To look at how planning and delivering mass gatherings can be used to enhance global health security through enhancing compliance with International Health Regulations (IHR) and cross government working.

Background: Mass gatherings pose a health care challenge because of the increased risk of transmission of communicable diseases, due to the influx of international visitors, and the fact that participants disperse soon after the gathering - potentially spreading disease within their communities and potentially internationally. Early identification and response helps reduce the risk of widespread exposure and minimize the impact on both visitors and the local community. The dispersion of participants also poses a challenge for traditional surveillance methods. Planning and preparing public health systems and services for managing a mass gathering is a complex procedure. Advanced risk assessment and system enhancement are critical to identifying potential public health risks, both natural and manmade, to preventing, minimizing, and responding to public health incidents. However, these events are opportunities to enhance public health systems, International Health Regulations (IHR) compliance, and provide a significant legacy to the host country.

Methods: Reviewing the experience gained from planning and delivering a range of mass gatherings to determine the legacy for public health capacity and capability building - the legacy. This included looking at different approaches across a range of countries, types of events, and reviewing the recent management and preparations for mass gatherings during Public Health Emergencies of International Concern.

Results: Overview of some of the key areas of public health legacy from mass gatherings and the long-term impact.

**Conclusion:** Mass gatherings provide an excellent opportunity for the host country to enhance systems and preparedness

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against potential public health risks. The high profile, political, and media interest often associated with these events provides an excellent driver for this work.

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## Influence of the Program on Patient Presentations at Outdoor Music Festivals

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Study/Objective: This presentation will focus on the influence of the program on audience behavior and patient presentations through comparing two separate events: an outdoor contemporary music festival and a multi-cultural world music festival. Both are outdoor events held over multiple days and are staged within a week of each other in public parks in Adelaide, South Australia.

Background: The performer or performance is central to an event, yet the influence of the performance, or more generally the program, is an area yet to be explored in relation to the impact of health and safety at mass-gathering events. The program is defined as the planned activities, experiences, or performances scheduled to take place over the duration of the event, comprising the effects of the music, performers, and their actions.

Methods: Ethnography was the chosen approach, as it allowed for data collection in various forms including observation, photography, environmental data, and patient presentation rates. Content analysis was used to interpret the data. The data were organized into classification types and the empirical data were then further analyzed to identify the nature of the interactions and consequences of the program against patient presentations.

Results: While there were no standardized patterns identified, relating to changes in audience behavior or patient presentations based on temperature, humidity, or audience density, there was a clear relationship between the program and the amount and type of patient presentations at each event.

Conclusion: The program is the primary influencer having a direct influence on, and relationship with, audience behavior and the consequent number of patient presentations. By understanding the program's influence on audience behavior at outdoor music festivals, event designers and managers are able to modify programs in response to the real-time observable audience behaviors.

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#### A Proposed Minimum Data Set for Mass Gathering Health -Updates and Moving Forward

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Study/Objective: Collaborative, ongoing development of an integrated, systematic, evidence-supported data set for Mass Gathering Health (MGH).

Background: There is currently no standardized approach to data collection at mass gatherings, making comparisons across/between events challenging. From 2013 an international team of researchers collaborated to develop a Minimum Data Set (MDS) for Mass Gathering Health (MGH). They undertook a Delphi process for those with a strong background/interest in MGH, preceding and during the 2015 World Congress on Disaster and Emergency Medicine (WCDEM). At that time, consensus was reached about the need for a standardized dataset to support researchers and clinicians, to build the knowledge base underpinning MGH science. This presentation will provide an update about the next steps in developing the MDS.

Methods: Drawing on literature, previous Event/Patient Registry development, expert input and the results of the team's work, the authors developed a MDS framework with the aim to create an online MGH data repository. The framework was populated with an initial list of data elements. Experts and those interested in MGH were invited to participate in an online survey, to rank these data elements in terms of importance.

Results: A framework for a MGH-MDS together with a list of potential data items will be presented. Embedded in the data set will be the essential event phases (pre, during and post). Initial field names, field description, format and source(s) for data will also be shown. In addition, further steps towards developing an online data repository will be outlined. WCDEM 2017 participants will also be provided with a further opportunity to refine the framework and data elements during a congress workshop. Conclusion: The development of a MGH-MDS can grow the science underpinning this emerging field. Input from the international community is essential to ensure that the proposed MDS is systematic, comprehensive, and rigorous while remaining fluid and relevant for various users and contexts.

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### A New Concept of Disaster Preparedness for Mass Gathering in Ethiopia: Experience from In-depth Conference of Addis Ababa, Ethiopia

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**Study/Objective:** To describe a new concept of preparedness in mass gatherings for resource-limited settings.