Conclusion: No studies were found that describe any form of standards for medical planning and the response of emergency medical teams in different types of mass gathering events (e.g., sports, religious, festivals). There is a need for minimum standards for emergency medical teams deploying as a surge in mass gathering events.

Prehosp. Disaster Med. 2023;38(Suppl. S1):s81–s82
doi:10.1017/S1049023X23002340

How the Deadliest Nightclub Fire in History Improved Medical Interventions and Regulations and Impacted Legal Enforcement

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Introduction: This presentation is a continuation of a WADEM presentation from 2013 entitled: *Fires in Social Settings: An Examination of Prevention Strategies.*
Method: Nightclubs should be a place of fun and frivolity, but sometimes they become a place of death and destruction. The fire at the Cocoanut Grove in Boston Massachusetts, USA, in November, 1942 was the deadliest nightclub fire worldwide with a death toll of 492 and over 130 injured. Since that tragedy, regulations that could prevent or mitigate lethal incidents at nightclubs continue to be unenforced globally. This presentation will describe not only elements leading up to the Cocoanut Grove fire, but the resulting advances that have improved the lives and safety of the public.
Results: The discussion begins by examining the general environment within the U.S. in fall of 1942. Appointed and elected officials tasked with protecting the public to reduce occurrences for such disasters failed in their performance of their respective roles. Groundbreaking medical advances used to treat the victims include the use of penicillin, methods of treating cutaneous burns, the use of electrolyte balance to aid in determining the ongoing treatment of burn victims, as well as other medical advances improved directly as a result of the fire. Additionally, the first systematic study of grief and survivors' guilt and the recognition of what is now called Post Traumatic Stress Disorder commenced.
Conclusion: Finally the divergent theories of the sources of the fires, how fire codes have changed in the aftermath as well as how the parties that were directly or indirectly responsible for the fire were disciplined by the judicial system will be reviewed.

Prehosp. Disaster Med. 2023;38(Suppl. S1):s82
doi:10.1017/S1049023X23002352

Stadium Disasters

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Introduction: Stadiums are an important part of the entertainment and sporting cultures of communities around the world, but the combination of outdated infrastructure with poor safety planning, large numbers of people gathering within a confined space, and the high frequency of such events have led to a number of significant disasters in the past.

This is a descriptive analysis of stadium disasters occurring between 1901-2021 which may provide useful insight for event safety personnel and disaster medicine specialists to better prevent and mitigate the effects of potential future stadium disasters.
Method: Data was collected using a retrospective database search of the Emergency Events Database (EM-DATS) for all stadium-related accidental disasters occurring between January 1, 1901-July 30, 2022. A disaster is defined by CRED in its glossary as "technological accidents of an industrial nature, or involving industrial buildings". All categories and definitions are predetermined by the EM-DATS as per their glossary.
Results: The May 24, 1964 Estadio Nacional disaster in Lima, Peru was the worst (in terms of deaths) to date with 350 deaths. This is followed by the 1982 Luzhniki Stadium disaster in Moscow, Russia (340 deaths), the 2001 Accra Sport Stadium disaster in Ghana (123 deaths), and the 1985 Hillsborough Stadium disaster in Sheffield, England (96 deaths) as well as 14 of the 40 stadium disasters occurred in Africa, 11 in Europe, 10 in the Americas, and five in Asia.
Conclusion: A total of 40 stadium disasters were included, leading to 2,025 deaths and 6,640 injuries. This equated to an average of 50.6 deaths and 166.0 injuries per disaster. Given the potential risk of mass casualty events, stadiums should incorporate disaster medicine education, training, and expertise in their emergency medical plans.

Prehosp. Disaster Med. 2023;38(Suppl. S1):s82
doi:10.1017/S1049023X23002364

Emergency Care to the Sound of Music

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Introduction: There are known higher rates of drug and alcohol consumption in music festival attendees. Patterns of MDMA use had been changing over a number of years however the festival season (Sept 2018 - May 2019) in NSW saw a dramatic rise in drug related mortality and morbidity which had not been seen in other states in Australia although similar instances had been noted overseas.

With over 70 music festivals in NSW in this period, five deaths in four months and 29 severely unwell patrons transported to NSW hospitals, the impact was significant.To support both the festival site and NSW hospitals a Health Response Team (HRT) deployment model was implemented
Method: The planning and intervention strategies included provision of onsite specialist critical care teams to complement existing event management and paid healthcare providers. Disaster management principles, although documented, had not previously been used in the music festival setting. To deploy such a team, guidance on equipment, pharmaceutical and

physical requirements were scarce. Our team developed processes and protocols for all aspects of this unique deployment.

Operational procedures included specific equipment, medications, documentation processes, and clinical protocols were developed and reviewed and refined after each festival.

Results: The effectiveness of the teams was evidenced through the early recognition and management of severe drug toxicity seen at the five festivals to which WSLHD deployed HRTs. This management resulted in good outcomes with minimal morbidity and no deaths of the 29 festival patrons treated by the HRT noting 25 required intensive care admission.

Conclusion: Innovative processes and collaborative arrangements enabled effective deployment to NSW music festivals. Expert HRTs were key in preventing drug related morbidity and mortality through early recognition and management of complications. Team members gained unique and invaluable experience as a result of their deployments and patients transported to hospital were managed more effectively.

Prehosp. Disaster Med. 2023;38(Suppl. S1):s82–s83
doi:10.1017/S1049023X23002376

Building the Evidence Base to Update the Key Public Health Considerations for Mass Gatherings Evaluation and Legacy

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Introduction: Leaving a viable public health legacy and sustainable improvements in health infrastructure and capacity should be key for mass gatherings (MGs). Legacy includes improvements in health systems, health behaviors and delivering future MGs. Legacy planning and evaluation should be considered early in planning however, they are often neglected due to lack of funding to support, embed learning and maintain a sustainable legacy, and often favored over the event running smoothly.

Building on the Public Health for Mass Gatherings: Key Considerations (KC2) (2015), an updated literature review will identify new evidence for evaluating MGs and their legacy. This review will inform the development of updated resources to reflect the changing global health landscape and learning from MGs hosted during COVID-19, which can inform ways of better embedding legacy and evaluation in planning and post-event.

Method: A systematic literature review methodology will be used. Electronic databases will be searched for relevant publications and grey literature of a wide range of MGs globally, focusing on evaluations, MG legacies, and impacts. Searches for specific technical areas e.g., surveillance, will also take place.

Results: The literature review undertaken to develop the KC2 chapter identified limited publications. The increased interest in this field, should lead to an improved evidence base while recognizing evidence for long-term evaluation and legacy impact may still be more restricted due to the challenges of undertaking these studies. Recent literature will likely reflect work undertaken to deliver MGs during COVID-19, which will be included to identify good practice and transferable learning.

Conclusion: Key findings of the review will be published, and the evidence base will be used to update the evaluation and legacy chapter of the KC2. There are also plans to develop a MG evaluation and legacy tool that will be applicable beyond the major high-profile funded events.

Prehosp. Disaster Med. 2023;38(Suppl. S1):s83
doi:10.1017/S1049023X23002388

Increasing Patient Tracking Compliance by Harnessing Frontline Clinician Engagement

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Introduction: A large urban jurisdiction identified a lack of experience and knowledge in use of the established regional patient tracking system among frontline emergency department employees. Lack of nursing retention, shifted departmental priorities throughout the pandemic response, and decreased opportunities for exercising were notable causes of this identified knowledge gap. Effective patient tracking has a significant impact during response to any event with the capacity to strain the hospital and healthcare system. Mass casualty incidents pose a global threat to all jurisdictions. Recognition of this threat magnifies the importance of establishing a patient tracking system and empowering frontline staff, through education and training, to immediately implement the exercised patient tracking platform.

Method: Bolstering hospital readiness through site visits and first-receiver clinician engagement during special event planning improved effective use of a citywide patient tracking system during planned events. "Just-in-time" training tools were developed and distributed during site visits. Notably, identification of key clinical staff at each institution was an important step in meaningful clinician engagement. Utilization of these systems during special events is an opportunity to exercise a high stakes procedure during a low stakes incident.

Results: Site visits and training material distribution effectively enhanced first-receiver participation in patient tracking during a special event in comparison to previous special events. Users required less prompting throughout the response, and the post-intervention survey indicated an increase in user confidence levels. Increased utilization of the system improved visibility into the hospital's lived experience while engaged in the response.

Conclusion: Targeted site visits and educational material tailored to first-receiver clinicians during special events improved patient tracking efforts throughout a large urban healthcare system. During real and planned events, person and patient tracking allows for patient load balancing across the healthcare system, assists with patient and family reunification, and directs future planning, funding, and first responder and receiver education.

Prehosp. Disaster Med. 2023;38(Suppl. S1):s83
doi:10.1017/S1049023X2300239X