

**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.

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### 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 Coconut 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 Coconut 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.

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### 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.

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### 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