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Editorial

From mass gatherings medicine to mass gatherings health: Conclusions from the 3rd International Conference on Mass Gatherings Medicine, Riyadh, Kingdom of Saudi Arabia



Background

Mass Gatherings (MGs) are defined by the World Health Organization (WHO) as occasions whether planned or spontaneous that attract enough people to strain the planning and response resources of the community, city or nation hosting the event (World Health Organization, 2008). These events present health challenges for the attendees and host as well as opportunities for health legacy (World Health Organization, 2015). These themes were first explored during the 1st International Conference on Mass Gatherings Medicine organized by the Saudi Ministry of Health (MOH) and the *Lancet infectious Diseases*, and held on October 23–25, 2010, in Jeddah, Kingdom of Saudi Arabia (KSA) (McConnell and Memish, 2010). The Jeddah declaration was adopted at the end of the conference, which outlined pragmatic steps to achieve internationally coordinated goals for the new discipline of “Mass Gatherings Health” (Memish and Alrabeeah, 2011). The declaration received subsequent regional and international support (Memish et al., 2012).

The 3rd International Conference on Mass Gatherings Medicine

On the seventh anniversary of the first conference, and under the Patronage of the Custodian of the Two Holy Mosques, King Salman bin Abdulaziz Al-Saud, the Global Centre for Mass Gatherings Medicine (GCMGM), Saudi MOH, in collaboration with Alfaisal University, organized the 3rd International Conference on Mass Gatherings Medicine on Oct 23–25, 2017, in Riyadh, KSA. The conference was attended by local, regional and international experts in mass gatherings health and management, representatives from the WHO, directors of the WHO collaborating centers on MGs, governmental and non-governmental officials and scientific and educational institutions as well as healthcare professionals and students. The event involved 38 expert speakers from 15 countries arriving from the Eastern Mediterranean region, Europe, North America, Africa, Asia and Australia. The conference included 40 presentations on various topics and was a platform for knowledge and experience sharing, discussion and debates as well as being an important chapter in the evolution of “Mass Gatherings Health” as a discipline.

Conference themes

The event was held under the slogan “*From Mass Gatherings Medicine to Mass Gatherings Health: Evolving Perceptions and Practices*” and covered 8 themes reflecting the heterogeneous approach required for provision of a safe and healthy environment at MGs and which goes well beyond the traditional concept of medicine as outlined in the 2010 Jeddah declaration. These themes are highlighted below.

Mass Gatherings: key concepts

The conference opened with a session dedicated to key concepts in MGs, starting with an introduction to mass gatherings health and its evolution from the strict notions of emergency and disaster medicine to the more inclusive concept of health. There was emphasis on the multidisciplinary approach needed to ensure the health and well-being of people attending MGs and the communities hosting them. This multidisciplinary approach was reflected in the conference’s diverse themes in mass gatherings health and management. A number of presentations followed exploring key public health considerations for MGs including public health planning and surveillance, travel medicine and the public and global health implications of MGs. A recurrent theme was the important contribution of mass gatherings health to health system strengthening and public health and global health security. The session ended with an introduction to the WHO designated network of international collaborating centers on MGs including the GCMGM. The activities of the network are crucial in supporting the WHO program in MGs at the country, intercountry, regional, interregional and global levels.

Public health for MGs: experiences

The session was aimed at sharing experiences on the public health aspects of planning for and managing various types of MGs. Experts involved in religious MGs such as the Hajj and Umrah in KSA and the Bishwa Ijtema in Bangladesh as well as sporting events including the 2010 FIFA World Cup in South Africa and the London 2012 and Rio 2016 Olympic and Paralympic Games, shared their experiences with the audience. Of note was that many of these

MGs took place during public health emergencies of international concern, like the Ebola and Zika virus outbreaks, which added to the complexities of public health preparedness and management of these events. It was made clear that knowledge and experience sharing from previous MGs was critical in optimizing planning and management of future MGs worldwide.

Risk and risk management at MGs

This session explored risk, risk mitigation and health response at MGs. Presentations addressed risk assessment at MGs, a crucial step in event planning and risk mitigation ([World Health Organization, 2015](#)), and the concept of resilience in the context of MGs. Another topic featured prominently in the session was health services planning and response including during emergencies, drawing from experiences in various MGs such as the Hajj, sporting events and music festivals. Presenters emphasized the importance of having clear plans, effective communication and training and drills for effective emergency response at MGs.

Communicable diseases at MGs

Communicable diseases at MGs are a major concern for global health security ([World Health Organization, 2008](#)). Experts in the field presented on work conducted at various MGs including the Hajj, the Kumbh Mela Hindu pilgrimage, sporting events and music festivals. Presentations addressed communicable disease at MGs from occurrence and implicated pathogens to surveillance tools and strategies for prevention and control of infections. Of particular interest was the role of MGs in the globalization of pathogens and spread of antimicrobial resistance as well as the important topic of emerging infections. Presenters stressed the importance of further research in the areas for a better understanding of transmission mechanisms, prevention strategies and treatment options of communicable diseases at MGs as well as the organisms involved.

Non-communicable diseases and other health risks at MGs

The session was dedicated to non-communicable diseases and other health risks at MGs, starting with heat-related illnesses and mitigation strategies. The latter is a topic of major significance for the Hajj given that the event is entering the hot cycle in times of global warming. There was an emphasis on the need for standardization of heat-related illnesses terminology and definitions and management strategies as well as calls to consider innovative approaches including engineering solutions to mitigate risk especially in the context of Hajj. The topic of cardiovascular diseases and their management at MGs was also specifically addressed as well as occurrence and management of non-communicable diseases in general during Hajj from the experiences of both Nigeria and the South East Asian countries. There were calls for more research into the burden of these diseases and optimal management strategies especially in MGs such as the Hajj attended by large populations of elderly individuals with underlying health conditions.

Crowd psychology and behaviour

The session on crowd psychology and behavior explored core principles of crowd psychology such as shared identity, social support and social influence. These principles can impact both positively and negatively on health and on the conduct of attendees of MGs. In addition the principles also influence crowd behavior during emergencies. Understanding crowd psychology is essential in determining the most effective strategies for

communication with crowds including during MGs. Speakers emphasized the need to include the socio-psychological dimension to the “Mass Gatherings Health” discipline as well as highlighting research agendas in the area.

Crowd management and control

A number of presentations addressed crowd management and control from the KSA experience in managing Hajj and Umrah. The attendees were introduced to key principles in crowd management and control including the definition of a crowd, risks of overcrowding and risk mitigation and risk management strategies related to crowds. The session also presented the latest innovative approaches to the topic including the use of technology and engineering strategies. Such approaches have successfully been implemented in Hajj and led to significant reduction in crowd-related events and associated morbidity and mortality. Presenters called for the consideration of infrastructure design for MGs as well as the use of technology including crowd modeling strategies to improve crowd management and control at these events.

Education and capacity building in mass gatherings health

The final session of the conference was dedicated to the important topic of capacity building, education and training in MGs and mass gatherings health. A number of educational institutions in KSA and internationally have developed or are in the process of developing specific tracks or curricula in the field to build capacity and expertise. A trend that is likely to continue among educational and training institutions given the importance of MGs and the rapidly evolving nature of “Mass Gatherings Health” as an emerging discipline. Integration of such a field into the professional education in countries that host and manage MGs on a regular basis such as KSA is imperative.

Conclusions

At the conclusion of 40 presentations, discussion sessions and deliberations among experts, the conference:

- Recognised the key contribution of the Kingdom of Saudi Arabia to the international knowledge regarding MGs planning and management including the leadership of the Global Centre for Mass Gatherings Medicine (GCMGM), MOH.
- Highlighted the importance of mass gatherings health as set out in the 2010 Jeddah declaration including the significance of the multidisciplinary approach that has been applied. This, in recognition that ensuring the health and wellbeing of people attending MGs as well as the communities hosting them, requires a move from the limiting concept of “Mass Gatherings Medicine” to the more encompassing field of “Mass Gatherings Health”.
- Called for the incorporation of newer areas to the discipline of “Mass Gatherings Health” such as the socio-psychological dimension of MGs.
- Demonstrated the critical importance of knowledge and experience sharing in promoting MGs planning and called for wider commitment to expanding collaboration
- Recognized the vital contribution of mass gatherings health to health system strengthening, public health and global health security.
- Identified a clear need for expanding the evidence base for mass gatherings health which requires committed research in priority areas of the discipline supported by effective knowledge dissemination.

- Highlighted the importance of integration of mass gatherings health and management into professional education and training to build human capacity and expertise in the field.
- In relation to Hajj, emphasised the need to address the impact of climate change on the event and consider innovative approaches including engineering solutions, called for standardized definitions and approaches to heat-related illnesses and for more research related to the burden of non-communicable diseases and interventions to mitigate their negative effect.

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