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Background
Mass gatherings health is a recently formalized scientific discipline that deals with all aspects of health at mass gatherings (1). The latter are occasions that attract a sufficient number of people to strain the planning and response capabilities of the organizing hosts. Saudi Arabia, with its extensive and long experience in hosting the Hajj mass gathering, was a leader in advancing the global mass gatherings health agenda and the establishment of the mass gatherings health discipline (2). Starting by hosting the 1st International Conference on Mass Gatherings Medicine, entitled “Global Forum on Mass Gathering Medicine”, organized by the Saudi Ministry of Health and the Lancet Infectious Diseases journal (3). The conference took place in Jeddah in 2010 where the “Jeddah Declaration” was adopted at the end of the event. The declaration proposed steps for the formalization of the new discipline of mass gatherings health and called for the establishment of the Global Centre for Mass Gatherings Medicine (GCMGM) in Saudi Arabia, as well as the hosting of regular international conferences on mass gatherings medicine (4).

**The 4th International Conference on Mass Gatherings Medicine**

Since the 2010 conference, the Saudi Ministry of Health, led by the GCMGM, organized a further two conferences: the 2nd and 3rd International Conference on Mass Gatherings Medicine, in 2013 and 2017 respectively. True to the legacy of the Jeddah Declaration, and to the commitment to sharing and advancing knowledge in the area of mass gatherings health as a World Health Organization (WHO) collaborating centre, the GCMGM organized the 4th International Conference on Mass Gatherings Medicine between 10-13 December, 2019 in Jeddah, Saudi Arabia. The slogan for the conference was, “Model of Healthcare for Mass Gatherings”, which was in keeping with current discussions around mass gatherings globally, including the ongoing Saudi health transformation, comprising its mass gatherings. The conference comprised 4 plenary and 15 parallel sessions, 8 workshops, and a number of side meetings in addition to poster sessions and an exhibition by industry and stakeholders in mass gatherings health and management. The event involved over 100 expert speakers from 16 countries arriving from the Eastern Mediterranean Region, Europe, North America, Africa, Asia and Australia, and sharing a total of 96 presentations, and attracted over 1000 attendees.

The event served as an international platform for knowledge acquisition, sharing and dissemination, developing consensus on key areas of healthcare at mass gatherings, as well as setting forth the way forward for the mass gatherings health discipline including areas of research and capacity building. As such, further galvanizing interest in the field of mass gatherings health both within Saudi Arabia and globally, and adding another milestone in the development of the mass gatherings health discipline and in advancing its agenda both nationally and internationally.

In addition, the event also witnessed the launching of the Middle East and North Africa (MENA) chapter of the World Association for Disaster and Emergency Medicine (WADEM) with the aim
of providing evidence-based improvement, education, and advocacy of emergency and disaster health care and disaster risk reduction in the MENA region.

**Recommendations**

The 4th International Conference on Mass Gatherings Medicine concluded with the below recommendations and calls for action within the six principles in MGs health highlighted in Figure 1.

**Clinical practice**

Develop international guidelines for health care at mass gatherings, including suggested minimum, risk-relevant health care services that should be available at Mass gatherings. These could serve as initial frameworks for standard of care at mass gatherings, customized by local authorities.

Explore and apply modern technologies in mass gatherings health and management, including Artificial Intelligence (AI), crowd technologies, telemedicine and rapid point of care testing.

**Research and knowledge management**

Encourage and support research in the field of mass gatherings health and management and bridge the gap between academia and operations, in order to strengthen the evidence base for guidelines, standards and policies.

Create channels for dissemination of research outcomes in the area of mass gatherings health, including the establishment of a mass gatherings and public health scientific journal.

Develop and standardize risk assessment tools for mass gatherings to enable optimum planning and risk management at these events.

Support mass gatherings legacy reporting (ideally in a standard format/template) to enable experience sharing of challenges and best-known practices in the planning and management of
mass gatherings events.

Encourage international knowledge and experience sharing in planning and managing mass gatherings events, with a more prominent role for WHO and its mass gatherings collaborating centres and networks.

**Education and capacity building**

Build capacity in the area of mass gatherings health and management, including academic tracks, curricula and training programs that involve multiple response agencies and stakeholders.

Invest in capacity building and developing strategies for effective and timely risk communication at mass gatherings.

**Health security and planning**

Address the need for effective engagement with and coordination between multi-sectoral stakeholders in mass gatherings including events organizers, governments, public health sector, service providers and community-based organizations, to support breaking down silos and improve safety at mass gatherings.

Continue to strengthen global health security in the face of increasing number and types of mass gatherings events, locally, nationally and internationally.

Implement health early warning and response systems at mass gatherings and encourage intentional collaboration with travel-associated surveillance networks for early detection of potential international outbreaks.

**References**


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