

From Hajj services to Mass Gathering Medicine: Saudi Arabia formalizes a novel discipline



ARTICLE INFO

Keywords:

WHO
Mass gatherings
Hajj
Saudi Arabia

Dear Editor,

As 2018 hajj season nears in August 2018, the global public health community faces the challenge of preparing the pilgrims for this occasion with all the preventative measures detailed in a recently published report [1].

1. Advancing pilgrim hosting as a top national strategy and civic duty

“They will come to you on foot and on every lean camel, they will come from every deep and distant, wide mountain highway” Quran, Chapter Al Hajj – Verse 27.

Hajj, the Muslim pilgrimage to Mecca, Saudi Arabia is now in its 14th Century since its inception. Drawing 3 million Muslims annually from over 187 nations to the focal point of Islam's epicenter, Mecca, is among the largest annual mass gatherings [1]. Based on the lunar calendar, Hajj falls during ever-changing seasons and climatic conditions in the Saudi Kingdom where extremes of heat and aridity are the norm. Managing the myriad needs of these Guests of God, as pilgrims are known to Muslims, during their complex and synchronized religious rituals is a huge undertaking that the Kingdom recognizes to be its Islamic duty. For the monarch of the Saudi Kingdom, his role as Custodian of the Two Holy Mosques of Islam (referring to Mecca and Medina) the individual need and distress of each of the millions of worshipping Muslims is a matter of personal duty. The Kingdom is currently completing a massive development and engineering program expanding the Hajj sites to meet the increasing demands of the global Muslim population [2,3]. At 1.6 billion today and due to be 25% of the world's population by 2020 the world's Muslim population is one that is young, expanding, and globally mobile resulting in significant increase in pilgrimage. In response, and as per the ‘Vision 2030’ strategic plan of KSA, by 2020, the Kingdom is expecting 15 million pilgrims. The Mecca Metro project connecting a 4 km long station between two metro stations costing, will link Mecca to Mina – the major site for the ‘Tent City’ which holds all three to four million pilgrims in supplication for three days. A 450 km rail project known as the Haramain a high speed above ground train is underway. Over 60 million passengers (3–4 million during the Hajj) a year are expected to use the 300km/hr train in the

two-hour journey between the Two Holiest Cities of Islam.

2. Upgrading from curative pilgrim services to securing global health

As the majority of pilgrims are both elderly and originating from countries with sub-optimal health care surveillance and prevention services, pilgrimage poses unique challenges to health both from health care of pilgrims and from global transmission perspectives [1,4–6]. Throughout the history of Hajj, and in recognition of global advancements in health care and public health preparedness, Saudi Arabian government prepared and addressed the needs of millions of these international and domestic pilgrims from the very beginning to the very end of the mass gathering. The introduction of public health principles and interventions and advisories begin with the complex and multinational issue of Hajj visas (determined by quota in proportion to the visiting Muslim's host nation population of Muslims and issued only if strict vaccination standards which evolve every year according to changing infectious disease outbreaks, epidemics or even pandemics) [1,4]. The coordination of these visa policies with over 187 governments around the world; managing the ingress and accommodations of these Muslims into the Kingdom through sea land, and air arrivals; being prepared to quarantine individuals if from high risk areas in the setting of Zika virus, Polio, Diphtheria, Ebola or Yellow fever outbreaks or other such infectious disease challenges [1,4]. Supporting pilgrims temporary accommodations; meeting the pilgrims' chronic and acute health needs; provision of clean and safe food and water adequate for millions of pilgrims which is transported to the Hajj sites (pilgrims are forbidden from preparing food themselves due to fire risk and infection risk), and expanding the Kingdoms existing health infrastructure to meet the needs of the surge of pilgrims concentrated in the three month Hajj season, all demand intense multifaceted multi agency planning.

Disease control efforts are incorporated in the management of travel of pilgrims in and out of the Kingdom including through documentation requirements for vaccination. The modern Kingdom has managed Hajj for almost a century, including through World Wars, regional conflict and lethal global pandemics and epidemics-most recently pandemic influenza A (H1N1), outbreaks of SARS, MERS-CoV, Ebola, Zika and Avian Influenza (19–24). Successful mitigation response for

<https://doi.org/10.1016/j.tmaid.2018.07.007>

Received 4 May 2018; Received in revised form 12 July 2018; Accepted 13 July 2018

Available online 18 July 2018

1477-8939/ © 2018 Elsevier Ltd. All rights reserved.

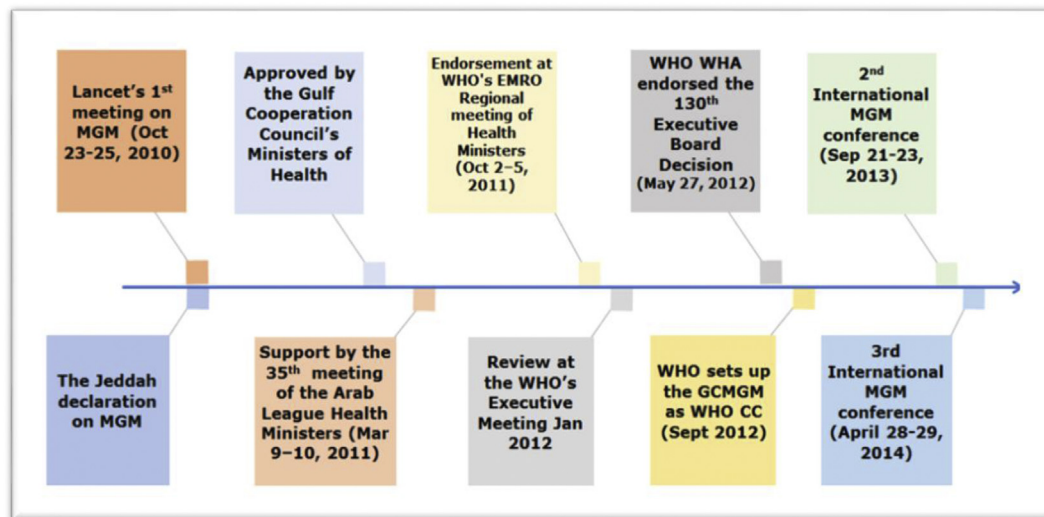


Fig. 1. The milestones for global centre for mass gathering medicine.

2009pH1N1 seeded the idea of institutionalizing what was known as Hajj medicine to a discipline-MGM (Fig. 1). In 2010 the world's first symposium on Mass Gathering Medicine was held in Jeddah, leading to the Jeddah Declaration and the formation of World Health Organization collaborating centre on mass gatherings. Today the six-point Jeddah declaration forms the keystone of the discipline of Mass Gathering Medicine as a formal field of enquiry. This platform was used also to advise the preparation of public health strategies for subsequent mass gatherings including the Olympic Games.

3. Transitioning from global health challenge to pilgrim health promotion and global good

Beneficial opportunities presented by Hajj and Umrah mass gatherings were highlighted in recent years. First, for infectious diseases, as evidenced during the 2009 pH1N, and that hajj and Umrah pilgrims emerge from nearly 180 countries some of which are hot spots for disease emergence, Hajj provides an one-stop opportunity to research global detection and prevention approaches [7]. For the first time, during the 2009 hajj, pilgrim crowd photographs were used as surveillance tool to assess compliance with face mask recommendations [5].

Second, from chronic diseases perspective [6], Hajj has witnessed routine, rare and unique non-communicable disease challenges including those related to crowd control strategies to mitigate injuries, advisories for environmental extremes, engineering interventions to reduce slips, trips, and falls, and electronic crowd monitoring to manage response capabilities. They provide valuable lessons and research opportunities for future mass gatherings.

Finally, from the personal health perspective of many pilgrims in resource poor countries, pilgrimage related medical screening in host countries may be the only opportunity to receive preventive services such as vaccinations. Such venues can also be used for surveillance (for example diabetes and blood pressure screening) to complement other expensive national surveys, particularly in countries with limited resources for health surveillance. Given that Saudi experience has already informed recent mass gatherings, exploiting the full research and

learning potential from mass gatherings, would complement global public health security efforts and help improve the health and welfare of pilgrims, and capacities of home countries of pilgrims.

References

- [1] Al-Tawfiq JA, Gautret P, Memish ZA. Expected immunizations and health protection for Hajj and Umrah 2018 -An overview. *Trav Med Infect Dis* 2017 Sep;19:2–7.
- [2] <http://www.reuters.com/article/us-saudi-haj-construction-exclusive-idUSKCN11F29S> accessed April 2018.
- [3] Vision 2030, Kingdom of Saudi Arabia. Available at: <http://vision2030.gov.sa/en> accessed July 10, 2018.
- [4] Ebrahim SH, Memish ZA, Uyeki TM, Khoja TA, Marano N, McNabb SJ. Public health. Pandemic H1N1 and the 2009 hajj. *Science* 2009 Nov 13;326(5955):938–40.
- [5] Elachola H, Assiri AM, Memish ZA. Sun protection during the Hajj mass-gathering–2013. *Trav Med Infect Dis* 2014 Nov-Dec;12(6 Pt B):783–4.
- [6] Yilmaz FT, Sabanciogullari S, Karabey G. The effect of hajj pilgrimage on treatment compliance in individuals with chronic diseases. *J Relig Health* 2018 Mar 14. <https://doi.org/10.1007/s10943-018-0601-7>. [Epub ahead of print] PMID: 29541971.
- [7] Elachola H, Gozzer E, Zhuo J, Sow S, Kattan RF, Mimesh SA, Al-Tawfiq JA, Al-Sultan M, Memish ZA. Mass gatherings: a one-stop opportunity to complement global disease surveillance. *J Health Spec* 2016;4:178–85.

Qanta A. Ahmed

Division of Pulmonary Disease and Critical Care Medicine, Department of Medicine, Winthrop University Hospital, Associate Professor of Medicine, State University of New York (SUNY) at Stony Brook, New York, USA
E-mail address: Qanta.Ahmed@gmail.com (Q.A. Ahmed),

Shahul Ebrahim

University of Bamako, Mali
E-mail address: ebrahimsh2@gmail.com (S. Ebrahim),

Ziad A. Memish*

Infectious Diseases Division, Department of Medicine and Research Department, Prince Mohammed Bin Abdulaziz Hospital, Ministry of Health & College of Medicine Alfaisal University, Riyadh, Saudi Arabia
Hubert Department of Global Health, Rollins School of Public Health, Emory University, Atlanta, USA
E-mail addresses: Zmemish@yahoo.com (Z.A. Memish)

* Corresponding author. College of Medicine, Alfaisal University Riyadh, KSA P.O. Box 54146 Riyadh, 11514, Saudi Arabia.