



Review article

Health response to Hajj mass gathering from emergency perspective, narrative review

Asaad Shujaa ^{a, *}, Sameer Alhamid ^b^a Emergency Department, Hamad Medical Corporation, Weill Corneal Medical College, Doha, Qatar^b Emergency Department, King Saud Ibn Abdulaziz University, Riyadh, Saudi Arabia

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ABSTRACT

Hajj is a unique gathering with Mecca and Kaaba being spiritually important to many faiths across the globe, especially Muslims. This is because of the proclamation of the prophet's father, Ibrahaam, when he called all mankind to perform Hajj. That is why all Muslims on Earth feel that they have to visit Mecca and Kaaba on a specific date and time, and that is the reason this small location hosts one of the largest human gatherings in the world. Hajj is one of the five pillars of Islam that every financially and physically able Muslim must perform once in his/her lifetime. For 14 centuries countless millions of Muslim men and women from the four corners of the earth have undertaken pilgrimage to Mecca.

In conclusion this review article confirm that Hajj is oldest and largest mass gathering in all mankind and there is some issues influence the health response such as size of gathering, diversity of population, climate and health facilities around hajj site, also we discuss the infectious and non infectious related illness in hajj and their prevention methods.

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There are specific issues related to the Hajj that influence the health response such as:

A. Size of gathering

It is the largest and oldest mass gathering known to mankind with an average of 3 million people in the same area, at the same time and doing the same thing. There is a high population density of 8–9 persons per square meter. Human stampedes at Hajj are frequent especially with high population density doing same things in the same time at same location in small crowded area and associated with high mortality rate.

B. Diversity of population

Pilgrims come from different countries, with diversity in ethnic origin, different languages and socioeconomic status.¹ All attend the Hajj together with different medical background and many of co-morbidities especially with older people. Many of pilgrims arrive from low-income countries, many will have had little, if any, pre-Hajj health care, which lead to some infectious

disease can easy to spread and cardiovascular diseases can happen.

The access to hajj account 92% arriving by air, 7% traveling over land and 1% by maritime²

This makes large number of Pilgrims able to come to Hajj with short time by air travel.

C. Climate

Mecca features an extremely arid climate. Unlike other Saudi Arabian cities, Mecca retains its warm temperature in winter, which can range from 18 °C (64 °F) at night to 30 °C (86 °F) in the afternoon. Summer temperatures are very hot and break the 40 °C (104 °F) mark in the afternoon dropping to 30 °C (86 °F) in the evening. Rainfall in Mecca is infrequent and falls between November and January. Mecca in summer time are very hot and Heatstroke cases frequent during the pilgrimage to Mecca, for example August 1985, 2000 cases of heatstroke were reported and more than 1000 of these individuals died within a few days.³ Outdoor Pilgrimage activities associated with heatstroke, heat exhaustion, dehydration and sunburn.

D. Health Facilities around the Hajj Sites:

Facilities vary from year to year, and capacity surge of these facilities vary from year to year based on number of pilgrims arrived to Mecca however certain facilities i.e. those made of

* Corresponding author. Tel.: +974 55370873.

E-mail address: asaads2012@gmail.com (A. Shujaa).

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bricks and mortar are obvious more permanent. For this reason facilities are available in the three main areas Mina, Muzdallifah and Arafat. In 2012 – 25 hospitals with 4427 bed capacity (500 critical care and 550 emergency care). 141 health centers in vicinity of the Hajj with 20 000 qualified specialized personnel (Fig. 1). All Health care provided at Hajj are free to all Pilgrims arrived to Saudi Arabia. All these on site health care facilities connected to the tertiary hospital at Mecca and Jeddah.

- 1 Mina area: During the Hajj season a number of mobile temporary facilities are set up, especially around the outskirts of the Jamarat (the place whether the symbolic stoning of Satan takes place. As well as these in Mina there are three main hospitals. Mina Bridge Hospital. This is located just ahead of the King Khalid Bridge on the Mecca side adjacent to the famous Masjid Alkhaif in Mina. Being in close proximity to the entry point of the Jamarat area is the place where injured people may be taken in the event of a stampede around the Jamarat. Mina General Hospital located near the King Abdulla Bridge deep inside the tented area of Mina. It is larger than the hospital mentioned above Al- Wadi Hospital. This is located on the other side of Mina compared to hospital 1 and 2 above.
- 2 Arafat area: Arafat has a number of Hospitals. The easiest to find is probably the one at the base of Jabal-e-Rahma (the

mount of Mercy. As well as the above there are two other hospitals, Arafat General Hospital and Nimrah Hospital.

Other medical facilities during the Hajj season include a huge number of mobile and temporary clinics that are set up in and around the sites of Mina, Muzdallifah and Arafat. The vast majority of these however will be located near the Jamarat. They are often poorly signposted. However the clue is wherever there is a mass of stationary ambulances there is likely to be a mobile clinic.⁴ The Ministry of Health of the Kingdom of Saudi Arabia seeks to serve the pilgrims, and it strives to provide all health services that help the pilgrims and non-pilgrims to perform the rituals of Hajj with ease and convenience. Based on its faith in the importance of utilizing technology to facilitate and accelerate the work of health institutions spreading in the Kingdom in general, and those located in the areas performing Hajj in particular, the Ministry of Health takes pride, in calling all related Health agency and related sectors, (Civil defense, Police, traffic agency, communications agency and media) to participate in this human Mass gathering and potential disaster.⁵

1. Clinical issues during Hajj

Over the history of the Hajj a number of specific health related issues have arisen;

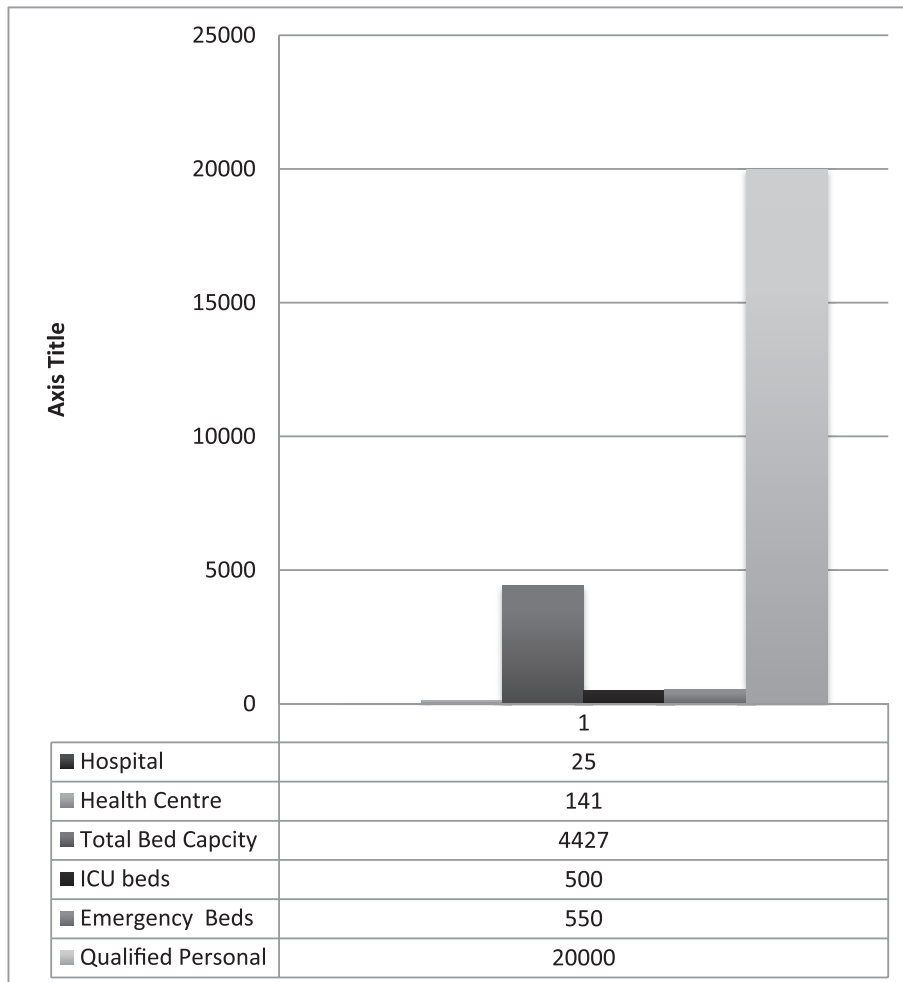


Fig. 1. Capacity of health Facilities at Hajj 2012.

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