

**Title:**

**Mass Religious Gatherings Events and COVID-19 –Easing of COVID-19 Restrictions and a Staged Approach to Scaling up the Umrah Pilgrimage**

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Every year, over 10 million pilgrims from at least 180 countries around the world visit the holy cities of Makkah and Madinah in the Kingdom of Saudi Arabia (KSA) to perform the Hajj or Umrah pilgrimages [1]. The annual Hajj pilgrimage is one of the five pillars of Islam and takes place every year between the 8<sup>th</sup> and the 13<sup>th</sup> of Dhul Hijjah, the last month of the Islamic lunar based calendar [1]. The mini-Hajj or Umrah can be performed at any time during the year and there is a constant flow of hundreds of thousands of pilgrims every month throughout the year [1]. A critical component of monitoring pilgrim health is the Saudi Public Health Emergency Operations Center [2] which maintains continuous surveillance of pilgrims throughout the year. Transmission of respiratory tract infections between pilgrims is very common and viral causes include rhinovirus (5.9-48.8%), influenza virus (4.5-13.9%) and non-MERS-CoV coronaviruses (2.7-13.2%) [3]. The past two decades has witnessed three lethal zoonotic novel coronaviruses which have jumped the species barrier and cause respiratory infections in humans: the severe acute respiratory syndrome coronavirus (SARS-CoV-1) in November, 2002, the Middle East respiratory syndrome coronavirus (MERS-CoV) in April, 2012, and more recently SARS-CoV-2 in December, 2019 [4]. All three coronaviruses have focused the attention of global public health because of their pandemic potential, absence of any effective vaccines or treatments, and threat to global health security.

MERS-CoV was first detected in KSA a few months before the 2013 Hajj pilgrimage. The high mortality rates (36%), especially in those >65 years and with co-morbidities, focused the attention of KSA authorities who swiftly undertook additional steps to strengthen preventive public health recommendations, including advice to postpone the Hajj for those 65 years of age and over, children aged under 12 years, those with chronic diseases (cardiac, renal, respiratory diseases and diabetes mellitus) and those with immunocompromise from any cause [5]. The importation of MERS-CoV into the Republic of Korea by a traveler returning from KSA in 2015 led to the largest MERS outbreak outside of the Middle East with 186 laboratory-confirmed cases (185 in Republic of Korea and 1 in China) and 38 deaths [8]. Continuing preventive and surveillance measures instituted by the KSA authorities over the past 8 years have ensured there has been no outbreak of MERS-CoV among pilgrims as was initially anticipated [6]. Regular systematic screening of pilgrims shows no evidence of MERS-CoV infections to date [7].

When COVID-19 was declared a Global emergency by the WHO, KSA took immediate extensive measures to curtail the spread of SARS-CoV-2 and included cancelling visas for all foreign pilgrims, and mitigating the risk of spread of SARS-CoV-2 by local pilgrims performing the Umrah. Furthermore, the 2020 Hajj was scaled down substantially, and Hajj rituals was limited to SARS-CoV-2 negative healthcare workers and security personnel residing in Saudi Arabia, adhering to social distancing and wearing face masks. The

2020 Hajj was a resounding public health success and ended on Monday 3rd August 2020 with no COVID-19 cases detected [9]

Since the first reported case of COVID-19 in March 2020 in Saudi Arabia, there have been a total 341,854 COVID-19 cases with 5,165 deaths (CFR: 1.5%). The numbers of cases are on the decline. On October 4<sup>th</sup> 2020, The KSA Interior Ministry announced a series of staged measures for the gradual resumption of the Umrah. Since the Umrah rituals can be completed within few hours an upward scale of the activity [10] has been suggested (**Figure 1**). The first stage would accommodate 6,000 pilgrims per day in the Grand Mosque, Makkah, Saudi Arabia. The second stage would allow 75% capacity with the additional visit to a special and a sacred place in the Prophet's Mosque in Madinah, the Rawdah. This stage receives 15,000 pilgrims per day and 40,000 worshippers per day in the Grand Mosque in Makkah. The third stage would allow 100% capacity taking into consideration all the needed precautionary measures for the Umrah including social distancing. This stage is expected to start November 1<sup>st</sup>, 2020 and allow citizens and nationals inside and outside the KSA to perform Umrah pilgrimage, visit the Rawdah in the Prophet's Mosque in Medina, and pray in Two Holy Mosques. These measures allow full access to the Umrah pilgrimage and also full adherence to the required mandatory precautions including social distancing and full adherence to face masking. The final stage is the resumption of 100% capacity of pre-COVID-19 pandemic Hajj and Umrah capacity and this stage will be declared once the risk of the current pandemic is deemed over.

Over the years KSA have developed a very effective risk assessment and preparatory procedures for receiving Umrah and Hajj pilgrims through collaborative efforts of multiple government sectors inclusive of development of electronic based surveillance activity, and the use of sophisticated information technology [11] . For COVID-19 , an official Ministry of Hajj and Umrah App has been introduced [10] which has been launched as part of the registration procedure to perform Umrah. In addition, all international health regulations and updated advice are incorporated into these recommendations. The gradual opening up of Umrah and Hajj to larger numbers of pilgrims from overseas will be critically dependent on accurate surveillance data. The scale up processes for pilgrims attending the Umrah are being carefully implemented and periodically evaluated to ensure that any changes in the COVID-19 pandemic are addressed and prudently for the safety of the pilgrimage, the Saudi citizens and residents and the global health.

The gradual increase in the numbers of pilgrims is expected to reach the pre-COVID-19 numbers of 10 million coming from over 180 countries. With the current second wave of COVID-19, this may be an overoptimistic prediction. Close monitoring and surveillance will be required.

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Figure 1:

Resumption and Timeline of the Scale up of Umrah Pilgrimage, Saudi Arabia

