



NTS Alert November 2009 Special Edition

Ensuring Good Health During the Hajj in a Time of the H1N1 Pandemic

Concerns over the continued spread of H1N1 have put the annual Hajj pilgrimage in the spotlight as a potential source of disease transmission and pandemic outbreak. Steps have been taken since June 2009 by the Saudi government, as well as by other countries and the World Health Organization, to improve preparedness and increase awareness. However, as pilgrims gather this week for the Hajj, Saudi health officials have announced that 70 pilgrims have been infected with H1N1, four of whom have lost their lives to the disease thus far. This Alert seeks to highlight that despite the complex circumstances surrounding pandemic preparedness during the Hajj, successful mitigation of a pandemic spread is possible with efficient multi-sectoral cooperation amongst Hajj officials and pilgrims. Such efforts must also be given greater emphasis in the media so as to ensure accurate and holistic reporting of events thereby reduce the likelihood of media hypes of a pandemic outbreak.

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Introduction

To Muslims, a pilgrimage to the holy city of Mecca is a religious obligation for those who have the means and capability to do so. The effects of globalisation - such as increased wealth, greater access to travel and significantly lower prices for travel - have made this pilgrimage more feasible for many, insofar that this religious rite is seen as one of the largest displays of mass migration in contemporary times, with an average of 2 million pilgrims annually in the past decade. Managing the event has no doubt been an uphill task given past incidents related to overcrowding. This year's Hajj faces increased pressure of a possible pandemic outbreak, as it coincides with the second wave of the global H1N1 pandemic. That said, health concerns are not totally new with regards to Hajj management, but rather media attention surrounding H1N1 only serves to amplify the tricky balance of mitigating a worldwide spread while ensuring Muslims are able to proceed with their religious obligations smoothly.

The Perfect Breeding Ground

An estimated 2.5 million people from up to 160 countries congregate, pray and eat in close proximity to each other for several days. Saudi officials were encouraged when a wave of almost 2 million visitors to Mecca during the holy month of Ramadan in mid-September passed with only 26 cases of H1N1 and no deaths. However, the Hajj has been more risky, bringing in

many more pilgrims from developing countries with weak health systems, as well as visitors from developed countries with a high rate of H1N1 cases.

There are a number of factors supporting the notion that the Hajj serves both as a breeding ground, and a transmission source, for infectious diseases. By its current nature, it creates conditions that are ideal for the rampant transmission of H1N1 and other diseases, and further facilitates the emergence of novel mutated strains.

Figure 1 Pilgrims flood the Grand mosque, its roof, and all the areas around it during night prayers in Mecca



A question of timing: The second wave of H1N1 infections

The Hajj brings together people from various parts of the world to converge on a small geographical area. These include pilgrims from countries currently experiencing high rates of H1N1 infections, such as those in North America and Europe which are currently undergoing a second wave of infections. For example, the United States issued nearly 12,000 Hajj pilgrim visas last year and has had more than 37,000 reported H1N1 cases to date. Likewise, the United Kingdom has approximately 25,000 pilgrims going on the Hajj every year and has reported over 9,000 H1N1 cases to date.

Furthermore, this year's Hajj season coincides with the start of the winter flu season in the Northern Hemisphere, which may complicate the detection of H1N1 as some individuals dismiss it simply as a common cold. Moreover, it is likely that a pilgrim with H1N1 may not display symptoms during the short period of the Hajj (about four days), as H1N1 symptoms can appear between two and five days, post-infection, due to the long incubation period. In fact, people infected with H1N1 may be able to infect others from the day before they show any symptoms, up until one week after symptoms first appear.

There is therefore also an increased risk of the virus spreading internationally, through the travel routes of some pilgrims that may include long periods of transit at major international airports. Pilgrims who become infected during the Hajj could carry the virus to their home countries, triggering new outbreaks.

Furthermore, while the defining moments of the Hajj pilgrimage occur between the seventh to 13th day of Dhu al-Hijjah, the 12th month of the Islamic calendar, pilgrims often remain in Saudi Arabia for a longer period of time. This may include a period of two to three weeks before or after the Hajj. This is more common amongst pilgrims who have travelled from afar and spent a substantial amount of money for the trip. Given this extended stay, monitoring of the spread of H1N1 amongst pilgrims is crucial over several weeks, both within Saudi Arabia and also within countries of origin, post-return.

What is the Hajj? The Hajj pilgrimage is the fifth pillar of Islam, and is obligatory for Muslims who are capable and have the means to perform it.

While the Hajj is associated with the life of Prophet Mohammed in the 7th century, rituals performed during the Hajj are symbolic of the lives of the Prophet Ibrahim (Abraham) and his wife Hajar (Hagar). Rituals during the Hajj include:

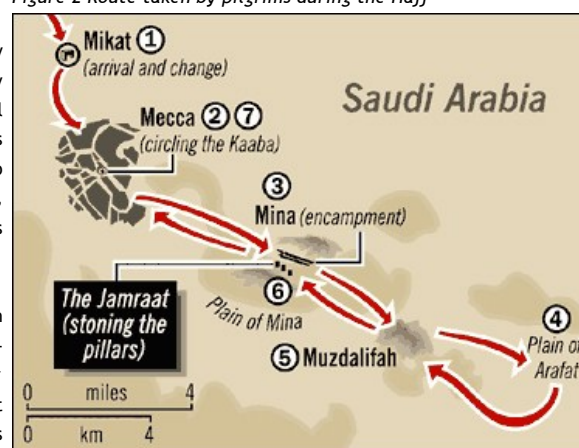
- Declaration of one's intention for the Hajj and entering a state of Ihram (ritual purity) upon arrival on the outer boundaries of Mecca (Miqat).
- Performing the Tawaf: Walking seven times counter-clockwise around the Kaaba in the Grand Mosque (Masjid Al Haram) in Mecca. This ritual is performed twice - once at the start of their pilgrimage (Tawaf Qudum), and at the end upon returning from Mina (Tawaf Wada').
- Performing the Sa'i: walking briskly seven times between the hills of Safa and Marwa.
- Performing the Wuquf: Standing on the plains of Arafat on 9th day of Dhu al-Hijjah (the day celebrated as Eid al Adha).
- Spending at least two nights in Mina.
- Perform the Jamarat ritual (Stoning of the Devil) for at least two days.

Social distancing is not a viable option

The nature of rituals performed during the pilgrimage can possibly increase the likelihood of virus transmission as pilgrims routinely touch objects of religious significance (see Figure 3) and communal prayer mats. Indeed, studies have shown that the influenza virus can survive on a multitude of surfaces, and can infect a person up to eight hours after being deposited on surfaces. Social distancing, as a preventive measure, can hardly be an option in such a mass gathering as pilgrims stand side by side during prayers.

Aside from H1N1, there are other infectious disease concerns such as dengue fever, polio, yellow fever, meningitis and other poverty-related diseases. The Hajj has in fact been a site for meningococcal outbreaks since the 1980s, with one instance that impacted twenty-four countries. Fortunately, the Hajj itself has never experienced an Avian Influenza (AI) outbreak, despite Egypt and Indonesia having the highest cases of AI globally. Management of such health risks necessitates that Saudi health officials monitor epidemics around the world and stipulate appropriate prior vaccination procedures for visitors from affected areas on an annual basis.

Figure 2 Route taken by pilgrims during the Hajj



Source: Available at

<<http://wikitravel.org/upload/shared//1/16/Hajj1.gif>>.

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Host Country's Preparedness Levels

With the added threat from H1N1, preparation for an impending outbreak has been ongoing. In June 2009, Saudi Arabia convened a meeting with the World Health Organization (WHO) officials and neighbouring Islamic countries to discuss pre-emptive strategic plans for this year's Umrah and Hajj. While the discussions provided holistic and comprehensive action in light of difficult circumstances during the Hajj, two initiatives have been particularly important.

Surge capacity and response capability

Figure 3 The gilded entrance of the Kaaba is set

Firstly, there is the need to improve surge capacity mechanisms, of which Saudi Arabia notes it has taken extensive efforts in. This includes strengthening infrastructure around the pilgrimage sites, such as the installation of thermal-screening equipment at entry points to detect passengers with fever, ensuring a system of rapid reporting of illnesses from hospitals and clinics to the emergency operations centre, assigning special hospitals for quarantine purposes, and increasing the number of healthcare centres and capacities of hospitals.

Secondly, there have also been suggestions to enable the rapid access of healthcare workers in congested outbreak sites via the use of motorcycles and other agile vehicles, and field medics equipped with hand-held web-linked devices to instantly alert a central medical command when they find a sick pilgrim. Such actions provide a real-time, geographic picture of where outbreaks may be starting, allowing a rapid response to contain them and facilitating the tracking of disease trends.

Vaccinations and antivirals

Secondly, several preventive measures have been implemented, though some may be more successful than others. In terms of vaccines, the Saudi Ministry of Health (MoH) has provided H1N1 vaccines to its local Saudi pilgrims as well as to members of the public and private sectors who are working in the two holy cities of Mecca and Medina during the Hajj, and to other workers who are in contact with pilgrims. This step is crucial to stem the spread of diseases, as healthcare workers are at a higher risk given their exposure to patients. If tests confirm an arriving pilgrim has the flu, they will be treated with antiviral medicines at Saudi expense, while the MoH has ensured the availability of 1.5 million doses of the H1N1 vaccine as well as an adequate supply of antivirals. Importantly, appropriate use of antivirals is essential to reduce the probabilities of the emergence of disease resistance to medicines. Furthermore, Saudi Arabia has made it mandatory for all Hajj pilgrims from across the world to receive vaccinations against diseases like meningitis, yellow fever and seasonal human influenza.



Source: Omar Chatriwala. Available at <http://www.flickr.com/photos/omarsc/>.

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Issues of Access

It therefore seems that Saudi Arabia does have its house in order to mitigate a pandemic outbreak. However, the Kingdom cannot address a pandemic outbreak on its own and is also dependent on the level of cooperation by countries which pilgrims are travelling from. In terms of vaccines, overseas Hajj pilgrims have been strongly advised to take seasonal influenza vaccine - and, if available, the novel H1N1 influenza vaccine - at least two weeks before travelling to Saudi Arabia, since the vaccine will be effective only 10 days after vaccination. However, few countries have been in that position and hence, of the 600,000 pilgrims who have already entered Saudi Arabia, some have done so without H1N1 vaccination due to the lack of availability in their respective countries. In addition, some poorer countries may not be able to afford large doses of vaccines, or provide sustainable and accessible vaccination services.

In the absence of complete vaccination coverage, there have been varying responses from Islamic countries. For example, Syria has barred from performing the pilgrimage those at a high risk of contracting influenza, while other nations strongly advised those at similar risk not to perform the pilgrimage this year. In an extreme case, Tunisia has even called off the Hajj completely. However, in an attempt to balance religious concerns, Saudi Arabia has not barred but rather strongly advised pilgrims falling in the high-risk categories to avoid this year's pilgrimage. This includes those under the age of 12 or over 65, pregnant women, and those suffering from diabetes and chronic diseases. Despite this advisory, the latest official estimates show that about 25 per cent of pilgrims are at least 65 years old.

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Figure 4 Pilgrims donning face masks



Source: Muhannad Fala'ah / Getty Images. Available at <http://z.about.com/d/islam/1/0/j/5/facemask.jpg>.

pilgrims have been given kits containing masks, hand sanitizers and informational materials explaining how the virus is spread by airborne particles and physical contact.

Pilgrims' Preparedness and Awareness

Despite the complex circumstances surrounding the likelihood of a pandemic outbreak during the Hajj, pilgrims themselves are in the best position to mitigate any potential spread. For instance, frequent hand-washing will, without a doubt, be practised during the Hajj, as pilgrims perform their ablution rites five times a day before prayers. In addition, Hajj congregations have been strongly advised to be as self-sufficient as they can in terms of personal supplies, as well as awareness of other pilgrims. Medical teams accompanying the pilgrims are also encouraged to bring with them appropriate amounts of antiviral drugs. Awareness campaigns have been carried out by the Hajj institutions in various countries for their pilgrims, providing information on preventive measures such as simple hygiene practices and the availability of infectious control kits at the Hajj site. Indeed, upon arrival,

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Challenges Remain

While it can hence be seen that countries are taking considerable measures in mitigating the potential spread of H1N1 and other infectious diseases, there are still problems that may persist.

Firstly, as with previous years, there is the problem of undocumented Hajj pilgrims, who oftentimes cannot afford to be on the Hajj officially and therefore slip into the holy city via land routes. These individuals - who have numbered between 400,000 to 600,000 in previous years - may potentially bring with them, or contribute to the spread of, infectious diseases. Although the Saudi government has imposed strict rules and fines for companies transporting these undocumented pilgrims, the problem is still likely to remain.

Secondly, there may be the issue of denial. Given the fact that it is ultimately the pilgrim's discretion as to whether he or she should report experiencing symptoms of H1N1, there is a possibility that some would brush it off as the common flu and not want to report it. Reporting would also mean running the risk of being quarantined, which thus compromises the pilgrims' ability to complete the Hajj. There may also be a sense of fatalism during the pilgrimage, whereby any problem or crisis that might ensue is seen as part of the trials and tribulations experienced during this journey. This may include being infected with the virus.

Lastly, under the circumstances of the Hajj, it is very common to have non-specific flu-like symptoms, including coughs and fever. Given its limited area, as well as its dusty environment and dense crowds, pilgrims may easily contract seasonal influenza and other infections. Health can further deteriorate due to dehydration and fatigue during the journey between Mecca and Medina to Arafat and Mina. As a result, pilgrims would not necessarily spot any symptoms.

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Conclusion

Despite the adverse circumstances, it is still possible to ensure a safe and disease-free Hajj. Accurate and holistic media coverage of the event is important so as to put things into context and avoid any unnecessary media hype. One example would be to understand the statistics regarding H1N1 cases. According to the Saudi MoH, as of 24 November, 70 pilgrims have been infected with H1N1, four of them fatally. A few points can be made about this development. Firstly, the deceased were from high-risk categories that had been strongly advised not to participate in the Hajj. Three of them were over the age of 75 and the fourth was a girl in her teens - all four with pre-existing ill-health conditions. Secondly, inaccurate media reporting had occurred prior to this: Saudi health officials had to reiterate the death toll of four as certain sections of the media had exaggerated the number to 10. Thirdly, credit must be given to the Saudi authorities for their efforts in preventive measures and quick response in detection and treatment of pilgrims infected with H1N1. According to Saudi health minister, Dr Abdullah Al-Rabeeah, the other cases are in stable condition and on the road to recovery.

Essentially, while prevention efforts are bound to be more intense than usual, it is not unprecedented. Saudi Arabia has had experience with communicable and non-communicable diseases during the Hajj for more than 50 years and has gained a lot of experience throughout this time. There is, nevertheless, a need for the government to be very vigilant and to continue its efforts in coordination with other countries and with the WHO. The importance of good infrastructure, general awareness and education, and good hygiene practices cannot be understated, and in this respect Saudi Arabia has also provided general hygiene advice including cough and sneeze etiquette (e.g. covering the mouth and nose respectively), use of handkerchiefs, use of antiseptic hand gels and frequent hand-washing with soap and water, and use of face masks when necessary in crowded areas. As such, the Saudi national pandemic preparedness plan, and the precautions taken to counter the spread of H1N1, has been characterised by a comprehensive approach and methodology, in conformity with the international guidance provided by the WHO.

More importantly, cooperation from various sectors and officials is vital. In addition to precautions taken by individual pilgrims, *mutawwif* leaders (group guides) play a critical role during the course of the Hajj not only in emphasising the importance of infection control procedures and monitoring any flu-like symptoms within their congregations, but also preventing actions that may be triggered as a result of public fear and anxiety. Establishing this level of social awareness amongst the Hajj community will not only help to mitigate the spread of infectious diseases, but also enhance the sense of unity and resilience amongst Muslims as they embark on their spiritual journey.

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