

Health of the Hajj

For 5 days, starting 19 August, Saudi Arabia will host the Hajj, the world's largest annual religious pilgrimage, where people from over 180 countries will converge on Mecca. Infectious disease transmission associated with this mass transnational movement of people is well known—malaria in 632 CE, meningitis in 1987 and 2000, polio in 2004, and pandemic influenza in 2009. As the former Deputy Minister of Public Health for Saudi Arabia, I know how immense the challenge is to ensure that the country is prepared to contain the spread of infectious disease and maintain public well-being during this event. Although major progress has been made over the past 30 years in Saudi Arabia and in pilgrimage countries, there is still much more to do to avoid a health catastrophe, given that the pilgrim quota may grow to 2.2 million by 2020.

Nearly half of Hajj pilgrims are 56 years of age or older, and about half have preexisting health conditions. Many pilgrims originate from countries with low income (66%) or that are involved in conflict (18%), with suboptimal health care, disease surveillance, or prevention education. These factors allow outbreaks to go undetected before reaching epidemic thresholds, and Hajj pilgrims can become unsuspecting disease carriers. The intense and exhausting nature of the rituals, extreme desert temperatures, proximity between pilgrims during congregation and prayers, and commitment to share facilities all collectively create an ideal environment for infectious disease transmission.

This year's Hajj will be held in the shadows of recently documented outbreaks of cholera, Ebola virus disease, polio, Middle East respiratory syndrome, measles, meningitis, diphtheria, Lassa hemorrhagic fever, yellow fever, hepatitis, and Nipah virus infection across the countries of pilgrim origin. Hepatitis virus infections and tuberculosis are endemic in many of the pilgrims' home countries. Alkhurma virus is endemic in Saudi Arabia. Potential for zoonotic disease transmission exists through the animal sacrifice rituals, including of imported livestock. Yet only

three of these conditions require mandatory vaccination as an entry requirement for participation in the Hajj (meningococcal meningitis, polio, and yellow fever).

In 2009, when the H1N1 influenza pandemic coincided with the Hajj, Saudi Arabia convened stakeholders to create a discipline called “mass gathering medicine.” Saudi Arabia strengthened real-time Hajj surveillance and set up a reporting system and emergency operations center to monitor pilgrim safety and infectious disease events. However, if diseases of high transmission potential and case fatality such as Nipah virus or Ebola virus should emerge at the Hajj, Saudi Arabia's response capacities may not be sufficient to stall their impact.



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Surveillance at entry and exit points could quickly improve disease detection. Likewise, travel services could ensure compliance with international health regulations at all departure and arrival ports. The Hajj pilgrim venues and home country preparatory venues could actually become one-stop points for multiple disease surveillance and education for prevention. It will also be important to create a stockpile of medicines and vaccines in the event of a disease outbreak.

Such an endeavor will require investment by the World Health Organization and a multinational strategy that is coordinated by the Saudi Ministry of Health.

Performing the Hajj is a deeply emotional wish of all Muslims, and many pilgrims save their lifelong earnings to participate. Thus, restrictions on participating in Hajj to reduce the risk of disease spread is a geopolitical challenge for governments. Vision 2030 is a national development initiative of Saudi Arabia that aims to support the expected growth in the international Hajj pilgrimage, which may reach 4.5 million by 2030. The initiative should involve pilgrim countries and international stakeholders to develop public health safeguards for mass gatherings, which for many, may be a once-in-a-lifetime event.

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