

## Hajj 2006: communicable disease and other health risks and current official guidance for pilgrims

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Hajj, the Muslim pilgrimage to Mecca, is the largest annual gathering of its kind in the world. All adult Muslims who are physically and financially able to do so have a religious obligation to make the pilgrimage once in their lifetime, and each year, over two million Muslims from around the world gather in Mecca. Around 41 091 pilgrims (also known as Hajjees) from Europe attended the 2005 Hajj season [1] The Hajj takes place between the eighth and thirteenth day of the last month of the Islamic lunar calendar, and therefore falls at different date each year. The next Hajj will take place between 8 and 12 January 2006.

The rites and duties performed during the Hajj take place at different locations in and around Mecca. Many of the rites are physically strenuous:

- Tawaaf - circumambulation around the Kaba, the central point towards which Muslims face when performing prayers from anywhere in the world;
- Sa'iee - involves rapidly walking between two hillocks (Safa and Marwa) approximately 500 m apart;
- Staying from dawn to dusk at the Plain of Arafaat;
- Overnight outdoor camping in Muzdalifah where pebbles are collected for the stoning rite;
- The symbolic stoning of the devils in Mina.

Each rite must be completed at or within a prescribed time, and doing so in large crowds is physically demanding. It is important for each pilgrim to be fit and healthy to perform all the rites in order to achieve the spiritual goals of the Hajj. Men mark the completion of the rites by shaving their heads, although hair trimming is acceptable. The majority of pilgrims also visit Medina.

The congregation of so many people from different parts of the world in unavoidably overcrowded conditions within a confined area for a defined period of time presents many public health challenges, and health risks are greatly increased, with potential for both

local and international consequences. The Saudi authorities take these challenges very seriously and continually review arrangements to improve the pilgrims' environment.

Non-communicable health risks associated with the Hajj are mainly related to heat exhaustion, heat stroke and physical injuries [2]. Practical advice should be offered for pilgrims by the health authorities in their home countries, and this is now available in some European countries [3].

The physical exertion, overcrowding and high prevalence of pre-existing health conditions such as diabetes, heart disease, chronic chest conditions, renal and liver disease favour the spread of communicable diseases, including meningococcal infections, influenza, tuberculosis and gastrointestinal infections. The risks may be minimised by offering pre-travel advice and appropriate immunisations.

The most serious communicable disease risks, and measures taken to prevent them by the Saudi authorities are described below.

### **Meningococcal infections**

Until the 1987 Hajj, vaccination against meningococcal disease groups A and C was mandatory for pilgrims from sub-Saharan countries. However, an outbreak of *Neisseria meningitidis* serogroup A infection in 1987 highlighted the potential for international spread of infection during pilgrimage [4], and A&C meningococcal vaccination was made mandatory for all pilgrims applying for visas for Saudi Arabia. The pilgrimages of 2000 and 2001 were associated with an increased number of *Neisseria meningitidis* serogroup W135 infections in returning UK pilgrims and their close contacts [5]. Many infections associated with this previously uncommon strain were fatal, were subsequently reported from several countries in Europe, Africa and the Middle East with a high mortality rate. Introduction of the quadrivalent ACWY vaccine together with a high profile awareness campaign by ministries of health worldwide and the outbreak was quickly brought to an end. The quadrivalent vaccine is now a mandatory requirement before obtaining a visa to enter Saudi Arabia and is valid for three years [6], and all Hajjees arriving from countries in the African meningitis belt countries and the Indian subcontinent are given chemoprophylaxis at the port of entry. Continued vigilance and a sustained campaign are essential to prevent further outbreaks of this serious infection.

### **Influenza**

Influenza is a highly contagious infection, and it is important to increase awareness and uptake of influenza vaccine among pilgrims at risk of serious illness because of their age (over 65 years) or pre-existing medical conditions. Recent studies have shown a high incidence of influenza infections during the Hajj [7,8], and so it would seem prudent to regard all Hajj pilgrims at risk, but this is not a national recommendation in any of the European countries. However, the Saudi Ministry of Health recommends that pilgrims are vaccinated against influenza before travel, particularly those at greater risk [6].

In response to the highly pathogenic avian influenza outbreaks that have recently been occurring, particularly in east Asia, the Saudi Ministry of Health is intensifying influenza surveillance for pilgrims arriving from the most affected countries (including Indonesia, Cambodia, Thailand, Vietnam). Health officials at ports of entry will immediately report any suspected cases for confirmation of diagnosis, proper isolation and administration of oseltamivir. The Saudi authorities do not permit pilgrims to bring any food into the country, and authorities in Indonesia, Cambodia, Thailand and Vietnam have been asked to enforce this regulation at the point of departure, so that pilgrims do not bring any food containing live or frozen bird meat, in particular.

### **Polio**

Saudi Arabia was declared to be a polio-free in 1995, but after polio cases were reported in countries including Yemen and Indonesia during 2005 [9,10], there is now heightened vigilance and determination to keep Saudi Arabia polio-free, and to prevent the possibility of spreading the infection between pilgrims during the Hajj. A new requirement has been introduced: children under 15 years of age travelling to Saudi Arabia from countries where wild poliovirus has been reported must be vaccinated against polio before entry into the country, whether or not they are visiting for the Hajj [11]. Saudi Arabia requires people

aged under 15 years travelling from polio-affected countries to be immunised against the disease.

### **Cholera and other diarrhoeal and gastrointestinal disease**

Outbreaks of diarrhoeal disease and food poisoning used to be frequent during the Hajj due to crowded conditions and the difficulty of maintaining good hygiene. However, with the improvement in sanitation and water delivery to the Hajj sites since the mid-1990s, the situation is now much improved. The last documented outbreak of cholera was in 1989, among Malaysian pilgrims. To avoid future outbreaks, the Saudi Ministry of Health has intensified surveillance of pilgrims coming from cholera endemic countries, based on the latest WHO reports. All suspected cases will be quarantined at ports of entry, and their contacts will be followed up. No pilgrim is allowed to bring food items into the country.

### **Bloodborne infections**

To reduce the risk of bloodborne infections such as hepatitis B and hepatitis C from the head shaving procedure, the Saudi authorities provide licensed barbers who use a new blade for each pilgrim. Pilgrims should be made aware of this facility and encouraged to use it.

Most of the infections likely to occur during the pilgrimage are preventable. Concerted effort is required to ensure that these measures are implemented. Healthcare professionals, tour operators and individuals have a duty to increase awareness and facilitate uptake of these measures. In recent years, useful information has been provided from research and surveillance of influenza and other respiratory infections among UK pilgrims, carried out through collaboration with the Health Protection Agency, the National Health Service, and academics in the UK, and their Saudi counterparts. This collaborative work is expected to continue.

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