

Summary report on the

Meeting of heads of medical missions on public health preparedness for hajj

WHO-EM/CSR/092/E

Jeddah, Saudi Arabia
16–17 September 2014



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Organization**

Regional Office for the Eastern Mediterranean

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Document WHO-EM/CSR/092/E/07.15

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1. Introduction

The pilgrimage to Makkah (hajj), a Muslim religious event, is one of the largest annual global mass gatherings; over three million pilgrims (hajjis) from more than 188 countries convene within a very limited geographical area. The number of pilgrims has been progressively increasing over the years. The relatively short travel time to Makkah and associated crowded conditions make hajj a favourable environment for the spread of various pathogens amongst hajjis and further dissemination to other countries through returnee hajjis. Saudi Arabia has put in place competent surveillance and response systems for early detection and rapid response to such outbreaks. Many countries deploy medical missions to Saudi Arabia during the hajj season, essentially to provide basic curative medical services and other related health services to hajjis from their own countries.

The Regional Office for the Eastern Mediterranean of the World Health Organization (WHO), in collaboration with the Ministry of Health of Saudi Arabia organized a meeting on public health preparedness for hajj in Jeddah, Saudi Arabia, on 16–17 September 2014. It was attended by 34 participants, including the heads of medical missions of the ten countries contributing the largest number of hajjis, from Algeria, Bangladesh, Egypt, India, Indonesia, Iraq, Malaysia, Morocco, Nigeria, Pakistan, and the host country, Saudi Arabia.

This meeting, the first of its kind, was aimed at improving public health preparedness for the 2014 (1435 H) hajj season. The overall objective was to support the Saudi Arabian health authorities in improving communication and coordination with the hajj medical missions with the objective of harmonizing public health preparedness measures during the hajj. The specific objectives of the meeting were to improve the surveillance for epidemic-prone diseases, including

MERs-CoV infection and Ebola virus disease, during hajj and post-hajj among returnee pilgrims (hajjis) and improve the coordination mechanisms between the Ministry of Health of Saudi Arabia and the hajj medical missions.

2. Summary of discussions

2.1 Public health preparedness for hajj 2014 (1435 H)

Preparedness for a hajj season starts immediately after the last day of the preceding hajj. The hajj season of 2014 faced a number of major health concerns or health threats. External threats included the Ebola virus disease outbreak in West African countries, poliomyelitis from endemic countries, meningococcal meningitis, cholera and haemorrhagic fevers. Internal/external threats included Middle East respiratory syndrome coronavirus (MERS-CoV) infection in humans, dengue fever, food-related illnesses, accidents, and chronic illnesses/complications. Whenever necessary, the health authorities offer vaccinations at point of entry.

The health conditions for hajj are updated annually. Health requirements for hajj 2014 (1435 H) were issued in March 2014, and updated in April, June and August. In accordance with the International Health Regulations (2005), all travellers arriving from countries or areas at risk of yellow fever must present a valid yellow fever vaccination certificate showing that the person was vaccinated at least 10 days before arrival to Saudi Arabia. In the absence of such a certificate, the individual will be placed under strict surveillance for six days from the date of vaccination or the last date of potential exposure to infection, whichever is earlier.

According to the Saudi Arabian regulations, visitors arriving for the purpose of *umrah* or pilgrimage (hajj) or for seasonal work are required to submit a certificate of vaccination with the quadrivalent (ACYW135) vaccine against meningitis issued no more than 3 years and no less than 10 days prior to arrival. Visitors arriving from countries in the African meningitis belt are given a dose of oral ciprofloxacin at point of entry. Vaccination with quadrivalent (ACYW135) vaccine is required for all citizens and residents of Madinah and Makkah who have not been vaccinated during the previous 3 years, all citizens and residents undertaking the hajj, all hajj workers who have not been vaccinated in the past 3 years, and any individual working at entry points or in direct contact with pilgrims.

Regardless of age and vaccination status, proof of receipt of a dose of oral polio vaccine or inactivated poliovirus vaccine within the previous 12 months and at least four weeks prior to departure, is required to apply for an entry visa for Saudi Arabia for travellers arriving from endemic countries which have never interrupted indigenous virus transmission (Afghanistan, Nigeria, Pakistan) (as of 16 May 2014), and countries reinfected with polio which have had transmission of an imported wild poliovirus or a circulating vaccine-derived poliovirus within the past 12 months.

The Ministry of Health of Saudi Arabia recommends that international pilgrims are vaccinated against seasonal influenza with the most recently available vaccine before arrival, particularly those at increased risk of severe disease and individuals with pre-existing health conditions such as asthma, chronic heart or lung diseases and HIV infection. It has also recommended that people aged over 65 years and those with chronic diseases (e.g. heart disease, kidney disease, respiratory disease, diabetes) and pilgrims with immune

deficiency, malignancy and terminal illnesses, pregnant women and children aged under 12 years planning to come for hajj and *umrah* in 2014 postpone their trip for their own safety.

Health authorities in the countries of origin are required to provide information to hajjis on symptoms, methods of transmission, complications, and means of prevention of selected epidemic-prone infectious diseases. The Saudi Arabian Ministry of Health also advises all hajjis to comply with common public health recommendations and personal hygiene to prevent the spread of respiratory infectious disease, such as hand washing, using disposable tissues, etc.

2.2 Addressing public health risks during hajj 2014 (1435 H)

Hajj seasons have been associated with a number of major disease outbreaks in the past, and many smaller outbreaks that occurred in other countries were linked to returning hajjis. Generally, during mass gathering events, host countries may face one or more of the following challenges: the capacity of the health system is stretched; they are not able to implement regular health measures; there is a need for stronger intersectoral coordination among relevant ministries; communication is difficult because of language barriers; adequate resources may not be available; and there may be frequent criticism by the media.

In 2014, the major epidemics that affected more than one country included Middle East respiratory syndrome due to corona virus (MERS-CoV) (mainly in countries in the Middle East) and the Ebola virus disease outbreak in a number of West African countries. Other major outbreaks included avian influenza A due to H7N9, and the circulation of wild poliomyelitis in a few countries. There is a need to strengthen collaboration between the hajj medical missions and the Saudi Arabian health authorities to prevent the importation of

epidemic-prone diseases and ensure early detection and appropriate response to outbreaks among hajjis.

2.3 Surveillance system in Makkah during hajj 2014 (1435 H) for pilgrims

As with other ministries, the senior officials at the Ministry of Health move to Makkah during hajj season. However, the hajj activities are actually implemented under the leadership and direct supervision of technical staff in Makkah. The number of health care workers is substantially increased, for instance, Makkah Public Health Department has a total of 104 staff working in public health and 50 in surveillance; corresponding figures from other locations are: Jeddah Seaport 11 and 9, King Abdul Aziz International Airport 30 and 20, and Jeddah Public Health Department 5 and 5. The guidelines, duties and responsibilities for all working personnel are clearly defined. The healthcare and medical services are delivered uninterruptedly (7 days a week, 24 hours a day).

The diseases of importance for surveillance during hajj season include Middle East Respiratory Syndrome coronavirus (MERS-CoV) infection, Ebola virus disease, cholera, meningococcal meningitis, yellow fever, poliomyelitis, viral haemorrhagic fevers, dengue fever and outbreaks of food poisoning or other food-borne diseases. The guidelines for management of these diseases during hajj are updated annually.

The role of field public health supervisory fixed teams is to:

- receive notification for discovered diseases from hospital fixed teams;
- supervise the field teams during notified diseases surveillance;

- ensure proper interventions for the patients and contacts;
- follow up the results with the specified laboratories;
- immediately notify the Executive Committee of the hajj Public Health Programme;
- ensure complete isolation for the cases as needed;
- follow up on the status of hospitalized cases;
- ensure proper implementation for infection prevention and control procedures for patients, health personnel and visitors.

The role of hospital fixed surveillance teams is to:

- notify the public health supervisory fixed team of all suspected cases in the emergency section;
- follow up on all cases admitted to hospital to pick up cases which were not notified;
- guide and direct the hospital field surveillance teams to properly conduct surveillance for suspected cases and provide the specified interventions for patients and contacts.

Special measures were arranged because of the threat associated with MERS-CoV and Ebola virus disease during the hajj season of 2014. Fixed and field surveillance teams were specially trained to deal with all suspected, probable and confirmed cases at the entry points as well as in Makkah and the holy places: a hospital and home isolation policy for confirmed cases and a referral policy for transferring confirmed cases to the specified hospital were prepared. The hajj medical missions are the entry points for early detection and management of cases. If a case of Ebola virus disease is suspected, the patient should be referred immediately and blood samples should not be collected, however, if the case is suspected MERS-CoV, the patient should be referred to the nearest hospital.

2.4 Surveillance system in Madinah region during hajj 2014 (1435 H) for pilgrims

During hajj season, the surveillance system in Madinah is strengthened by raising awareness among doctors working at hospitals and health centres, establishing a rapid response team, improving risk and outbreak communication and fostering collaboration between the public health administration and other relevant sectors. The surveillance system focuses on early identification of epidemics among hajjis. Active surveillance had been initiated at Prince Mohammad bin Abdulaziz airport to detect any suspected cases of Ebola virus disease. A special surveillance team pays daily visits to the medical facilities. Daily reporting of notifiable diseases is obligatory. Electronic surveillance (the Health Electronic Surveillance Network) is used wherever it is available. The surveillance and response teams work 24 hours a day throughout the hajj season.

In the guidelines for other notifiable diseases, including case definitions, the epidemiological investigation forms were reviewed, updated and widely distributed. MERS-CoV and Ebola virus disease control guidelines were added. All health care workers have been trained on infection prevention and control. All surveillance teams are adequately equipped with communication facilities, and report directly to a central surveillance team to avoid delays and mistakes.

Data are studied daily and cumulatively by the central surveillance team in order to identify any significant findings, such as clustering of cases that could require additional actions. Plans are in place for home isolation of cases of MERS-CoV and suspected Ebola virus disease. In Madinah the surveillance system works closely with hajj medical missions from 22 countries. Daily reports of the surveillance data are shared with the Director General for Health Affairs.

The rapid response teams are adequately equipped with personal protective equipment and supplies, including chemoprophylaxis against selected epidemic-prone diseases, kits for collection and shipment of biological specimens, communication tools and vehicles.

2.5 Hajj medical missions during hajj 2014 (1435 H) for pilgrims

The composition of hajj medical missions varies considerably between countries. In the past many medical missions failed to obtain licensing to concur with Saudi Arabian prerequisites to run medical facilities. A local team visits the medical missions regularly to ensure that the quality of services is acceptable. The visiting teams also try to resolve any problems that may hinder the activities of the hajj medical missions. The health authorities provide information, educational and communications materials, additional resources, and medicines as required.

2.6 Foodborne disease outbreak investigation during hajj season

Outbreaks of food poisoning are not uncommon during hajj season. Risk factors include different behaviours and cultures in the preparation and storage of food, the presence of street food vendors, etc. Outbreaks of food poisoning are reported immediately to the local health authorities. Food safety unit officers review medical records of patients seen at the outpatient departments of major hospitals daily and a report is sent to the authorities for follow-up. The outbreak investigation should be completed within hours as it is understood that any delay in the investigation will lead to significant increase in the number of cases.

Risk-based inspection of food service establishments is conducted before the arrival of pilgrims; this includes checking the status of food safety precautions in food production facilities, checking the personal

hygiene of food handlers, review of health certificates, checking that a quality management system is in place for food preparation facilities, and implementing hazard analysis and critical control points.

2.7 Threat of spread of Ebola virus disease during hajj 2014 (1435H):

Among the countries participating in the meeting, Nigeria was the only one which had reported laboratory-confirmed cases of Ebola virus disease. Accordingly, Nigeria provided an overview of the public health measures taken in the country to prevent any spread of the virus that may be associated with the pilgrimage to Makkah.

The Minister of Health of Nigeria officially declared an Ebola outbreak in the country following the laboratory confirmation of Ebola virus disease in a sick traveller who flew from Monrovia to Lagos via Accra and Lome on 20th July 2014. He died on 25 July 2014. It has been 58 days since Ebola virus disease was imported into Lagos and 46 days since it was introduced to the city of Port Harcourt in the south of the country. So far, all the confirmed cases have been traceable to the index case.

As of the day of the meeting, the total number of confirmed cases in Nigeria was 19: 15 in Lagos and 4 in Port Harcourt. A total of nine patients were successfully managed and discharged. There were seven deaths: five in Lagos, one in a private hospital (the index case) and the other four in the isolation ward. Two of the seven died in Port Harcourt. Five of the seven deaths were in health workers. Lagos has a total of 339 contacts who were previously under surveillance and have since been discharged. Only four contacts are presently being followed up. Port Harcourt has 526 contacts under surveillance. This is a mixed group consisting of tertiary and quaternary contacts to the index case.

In response to the situation a Presidential Steering Committee on Ebola virus disease was established and a state of emergency was declared by the president. Measures taken to address the outbreak included:

- establishing emergency operation centres in Lagos and Port Harcourt;
- releasing substantial funds to fight the spread of the outbreak and contain the disease;
- reviewing the state of preparedness and allocating responsibilities;
- training rapid response teams;
- setting up an Ebola virus information desk at Federal Ministry of Health headquarters;
- constructing isolation wards and tents across the country;
- informing healthcare workers, community leaders and families of contacts about the infection and risks;
- conducting regular social mobilization campaigns.

In preparation for the hajj all states conducted screening for intending pilgrims and an exit screening of all persons at the point of departure was done for unexplained febrile illness consistent with potential Ebola infection. No person with an illness consistent with Ebola virus disease was allowed to travel to Saudi Arabia. The Government imposed a ban on the travel of Ebola contacts or cases to the Saudi Arabia for the hajj. All states provided risk communication messages to pilgrims and addressed questions/concerns at every possible point, prior to departure, during the flights, and while on the buses. Awareness-raising sessions were given by healthcare workers. Additionally, educational and communication materials such as flyers, posters and handbills were produced in English and local languages and distributed to all pilgrims.

Following deliberations during the meeting, the following points/decisions were noted on surveillance and early detection of cases of Ebola virus disease.

- Early detection is key to control and containment.
- Communication and sharing information are regarded as the keys to early detection in any suspected case.
- A triage system would be established in clinics in the Makkah and Madinah areas to enable screening and early detection among any suspected cases in hajj pilgrims. All suspected cases are to be immediately evacuated and isolated; patients with a high index of suspicion are to be handled with caution and standard precautions are to be applied for all patients irrespective of the diagnosis.
- Provision must be made by Saudi Arabian authorities for the immediate evacuation of a suspected case. If it is in pilgrim accommodation, all the other pilgrims must be relocated, meaning alternative camps should be provided in such a situation.
- The surveillance team of the Ministry of Health of Saudi Arabia, comprising trained field epidemiologists, will constantly monitor the health situation of pilgrims.
- Every report of a suspected case will be taken very seriously and investigated fully, both by the hajj medical missions and the Ministry of Health of Saudi Arabia.
- An emergency operations centre has been established and an incident manager has been identified to coordinate the response operations in the event of reporting of any suspected case.
- A dedicated telephone line and email address will be distributed by the Ministry of Health in Saudi Arabia to serve as help lines. This will help to dispel rumours, tension, fear and anxiety amongst pilgrims.

- The Ministry of Health of Saudi Arabia will consider distributing appropriate quantities of personal protective equipment to countries for improved preparedness.
- The Ministry of Health of Saudi Arabia will have on standby trained emergency healthcare workers including ambulance drivers well kitted with personal protective equipment.
- In the event of the mass spread of the disease, consideration would be made for immediate evacuation of symptom-free pilgrims into isolation tents. A triage system can be developed for the isolation processes.

2.8 Surveillance of MERS-CoV among returnee pilgrims

As of 17 September 2014, 845 cases of laboratory-confirmed Middle East respiratory syndrome coronavirus (MERS-CoV) infection, including at least 298 deaths, have been reported to WHO. The virus appears to be circulating widely throughout the Arabian Peninsula, and the largest number of MERS-CoV cases has been reported in Saudi Arabia. In April 2014 there was a sharp increase in the number of cases reported, notably in Saudi Arabia and in the United Arab Emirates, largely owing to healthcare-associated outbreaks.

Human-to-human transmission of MERS-CoV has been documented in several clusters of cases, but so far, there has been no evidence of sustained human-to-human transmission. In view of the risk of the spread of MERS-CoV associated with returnee pilgrims, the following should be adhered to by the countries: ensure the rapid investigation, testing and early detection of any suspected case of MERS-CoV infection, i.e. any person developing an acute respiratory infection, fever and cough within 14 days of returning from hajj and showing indications of pulmonary parenchymal disease (e.g. pneumonia or acute respiratory distress syndrome), based on clinical or radiological

evidence, who requires admission to hospital, with no other etiology that fully explains the clinical presentation.

The meeting participants also agreed that information on any suspected case of MERS-CoV, especially the findings of the investigation (including a detailed history on the places visited during the hajj) and the test results, should be rapidly shared by the countries with the International Health Regulations National Focal Point in Saudi Arabia or through WHO to the Ministry of Health of Saudi Arabia.

3. Recommendations

The following recommendations were made to the countries sending pilgrims to Makkah for hajj and *umrah*, to Saudi Arabia and to WHO to improve public health preparedness during the hajj season.

To countries sending pilgrims to Saudi Arabia

1. Ensure that at least 20% of the staff of the Medical Missions are public health professionals (epidemiology, infection prevention and control, food safety, community medicine).
2. Employ a ratio of one physician per 1000 hajjis.
3. Initiate appropriate health education programmes for hajjis before departure and during hajj.
4. Initiate appropriate medical screening activities for hajjis before departure and at return points of entry.
5. Adequately equip hajj medical missions as per Saudi Arabian licensing regulations.
6. Ensure the adherence of hajj medical missions to infection prevention and control protocols and guidelines.

7. Promote research among hajj returnees.
8. Follow the standard case definition of MERS–CoV and Ebola virus disease for surveillance activities.
9. Ensure transparency and timely reporting of relevant public health events
10. Adhere to the Saudi Arabian Ministry of Health criteria for home isolation of MERS–CoV
11. Promote the use of wristbands among hajjis; these should carry coded information giving details of medical conditions such as diabetes mellitus, hypertension, HIV status and blood group.
12. Confirm contracting with companies to properly dispose of medical waste.

To Saudi Arabia

13. Share relevant information on case definitions and reporting tools with hajj medical missions.
14. Provide full contact details of all Saudi Arabian focal persons involved in public health services during hajj season.
15. Provide feedback on cases referred to hospital on the request of hajj medical missions.
16. Ensure compliance with food safety in coordination with the municipality.
17. Translate guidelines for hajj medical missions into English.

To WHO

18. Share information about public health concerns reported by countries after hajj.
19. Assist countries in defining risk factors for predisposition to morbidity and mortality which could be used in defining “medical fitness” prior to performing hajj.

20. Review and disseminate lessons learnt by hajj medical missions.
21. Organize annual similar meetings for hajj medical missions about two months prior to the commencement of hajj.
22. Promote the use of influenza vaccine to reduce the occurrence of influenza after hajj.



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