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LETTER TO THE EDITOR

Ebola preparedness in Oman: An experience from the Middle East

The Ebola virus outbreak created great challenges for healthcare systems in Africa and other countries where patients were treated. Much of the reporting about Ebola preparedness outside the epidemic area has focused on European or North American responses. We write to add a perspective on how these challenges were faced in a different health economy in the Middle East, where resources are not always as accessible and social attitudes about the quarantine and burial of infectious patients are heavily influenced by prevailing religious customs. This report summarizes the Omani experience in preparing to identify and manage patients with Ebola virus disease. It highlights the process of creating policies and procedures and details the challenges in the implementation and auditing of the response plan.

As the Ebola outbreak in West Africa progressed rapidly after February 2014, there were no international travel or trade restrictions to affected countries, and the alarming situation received considerable international media attention, including in Oman. The WHO declared the Ebola outbreak as a public health emergency of international concern on the 8th of August 2014 [1], and the Ministry of Health of Oman formed a national taskforce to develop a national preparedness plan, including appropriate algorithms and standard operating procedures [2]. These were largely derived from accessible WHO and US Centers for Disease Control and Preparedness guidelines and were adapted for local publication and use in English and Arabic [3]. Prior to this, there was no national plan or dedicated physical resources to handle patients with viral hemorrhagic fevers, although the Sultanate has evolved plans to manage and contain other infections, such as avian and swine flu and MERS Co-V [2]. Health services in each governorate were asked to develop their own operational response plans based on the new national plan and to conduct self-assessments against an audit checklist. Specific hospitals in each governorate were designated as Ebola centers, which facilitated the targeted training and allocation of resources. A one-day national workshop was conducted that addressed all of the response elements of the national plan and was followed by additional workshops conducted in all the governorates.

Emergency medical response teams and the public health sector of the National Civil Defense Committee were also involved. The preparedness and response operational plan was discussed at a national and multisectoral level that helped plan for surge management. A family of five from Oman returned from the Democratic Republic of Congo when the first case of Ebola was diagnosed and were followed as contacts by the public health team. One child from this family was successfully treated for severe malaria. This early experience revealed many practical problems that informed further national and local planning. Drills were performed in all governorates and ports of entry.

Oman has strong historical links with East Africa, and many Omanis travel to and from Central and West Africa. Additionally, many students and people working in Oman originate from Central and West Africa. The taskforce concentrated on algorithms and standard operating procedures to manage arrivals at air- and seaports. Several meetings were held between the taskforce and senior executives in civil aviation, airport management companies and port authorities. Self-declaration forms were distributed to all airlines originating from Africa. Many changes were made to health facilities in the ports of entry, and a facility was prepared for institutional quarantine. The Ministry of Health made legal provision for quarantine in the homes of travelers arriving from West Africa, although this was only required for 18 people. Again, exercises revealed many issues that were remedied by the adaptation of plans, the purchase of equipment and further training regarding infection control for all concerned parties in the ports of entry.

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Many public educational activities were conducted through the media, and a risk management plan for communication with the public was developed. However, the public perceived Ebola drills as cases of Ebola, and social media amplified this misconception.

Burial and funeral rituals in Oman are based on Sharia (Islamic laws). Usually, the process includes many steps that involve close contact with the body of the deceased person. Close relatives of the deceased usually perform the washing ceremony in his or her home. There was a paucity of medical and Islamic literature regarding methods for handling deceased bodies of victims of highly infectious agents [4]. Some of this has been addressed in more recent publications [5]. The team obtained a detailed fatwa (religious opinion) from the Ministry of Endowments and Religious Affairs. This fatwa allowed for flexibility to proceed based on a medical assessment of the risk of infection transmission, and suitable methods were decided upon for the burial of Ebola victims or victims of any highly infectious disease [2]. The taskforce produced guidelines addressing the main points, the most important of which was the process of and location for preparing the body [5]. It was directed that this step of the process should be performed by a trained healthcare worker in an isolation room for the deceased within the healthcare facility. Full body washing is avoided, and a disinfectant is applied prior to placing the body in double fluid-resistant bags, with disinfectant applied between the layers to avoid any transfer of disease. The ambulance should transport the body to the burial area, where a grave at least two meters in depth should be prepared. After the grave is covered, the prayer ceremony can occur with a limited number of people.

A surge of Crimean Congo hemorrhagic fever cases occurred in Oman in October 2014 around the Hajj period, and 18 cases were diagnosed, with one fatality [6]. The performance of hospitals, particularly strict adherence to infection prevention and control practices, was an instrumental benchmark, and the outbreak was successfully managed with no known secondary cases. Safe burial practices according to the guidelines were followed for the one deceased patient.

The taskforce faced many challenges, starting with the writing of guidelines, because the available published literature was tailored to a Western audience and sometimes recommended the use of methods or materials that are very difficult and expensive to adapt to our Omani lifestyle and customs. In addition, there were controversies about how to handle travelers from Ebola-endemic countries, and there was no clear international guidance on quarantine procedures.

In practice, it was difficult to obtain adequate supplies of many items such as disposable suits for personal protection equipment for healthcare personnel because supplies had already been exhausted for use in West Africa, North America and Europe. This added difficulty to the standardization of training of healthcare workers in health institutions and ambulance services. Regrettably, we have not yet received all of the necessary equipment due to the great international demand and competition for resources. In common with experiences in the USA and Europe, waste management and the decontamination of ambulances and aircrafts are a serious concern. The largest practical challenge in Oman is the lack of incinerators and autoclaves, even in some large hospitals, and there are no private companies competent or willing to dispose of medical waste in some governorates. There are no biosafety level 3 or 4 laboratories in Oman; therefore, samples from suspected Ebola cases must be sent abroad. Many shipment companies refuse to transfer samples labeled as category A. Fifty certified lab technicians from throughout the country were trained in the triple packing system.

In summary, the recent outbreak of Ebola exposed deficiencies in the health system that require additional time, financial resources and personnel to function properly in the future. The Omani government instituted a prompt national response and developed the first (or only) website in our region dedicated to both medical and social aspects of responding to Ebola, and there is a great need to continue this work in collaboration with neighboring Gulf Cooperation Countries. Our plans have been tested by other local viral hemorrhagic fevers, and we believe that with the current level of preparedness, it may be difficult to prevent the first case of Ebola from occurring; however, we are sufficiently prepared to prevent secondary cases.

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Competing interests

None declared.

Ethical approval

Not required.

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