ejpmr, 2018,5(7), 77-82

SJIF Impact Factor 4.897

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Research Article

ISSN 2394-3211

EJPMR

THE NATIONAL STRATEGY FACING EBOLA VIRUS DISEASE. WHAT PERSPECTIVE IN MOROCCO?

Mohamed Réda Sefrioui[1*], Majda Hannani[2], Hicham Fettah[2], Youssef Sekhsokh[3], Yahya Cherrah[4] and Soufiane Derraji[4]

[1]Central Sterilization Service, Mohamed V Military Teaching Hospital, Rabat Morocco.
[2]Faculty of Medicine and Pharmacy, Mohamed V University, Rabat Morocco.
[3]P3 Research and Biosafety Laboratory, Mohamed V Military Teaching Hospital, Rabat Morocco.
[4]Laboratory of Pharmacology-Toxicology, Faculty of Medicine and Pharmacy, Mohamed V University, Rabat Morocco.

***Corresponding Author: Dr. Mohamed Réda Sefrioui**

Central Sterilization Service, Mohamed V Military Teaching Hospital, Rabat Morocco.

Article Received on 02/05/2018 **Article Revised on 23/05/2018** **Article Accepted on 12/06/2018**

ABSTRACT

Background: Since the announcement by the World Health Organization of the outbreak of the Ebola virus disease (EVD) in West African countries in March 2014, Morocco has developed a national plan watch and prepare for the response to this disease. In this context, we conducted a study to evaluate the effectiveness of the national Ebola surveillance and preparedness plan. This study produced recommendations that could help strengthen the country's preparedness in the event of an epidemic on the national territory. **Materials and Method:** This is a descriptive, quantitative study spread over a period of 3 months. It took place in the different medical structures involved in the detection and management of suspected cases of Ebola Virus Disease. Included in our study all health professionals practicing at these medical facilities. The questionnaire data was analyzed using the Excel software. **Results and Discussion:** This study assessed the effectiveness of the national EVD preparedness plan for health professionals and brought forward recommendations. The response rate of our survey is 96%. The recommendations that emerge from our study concern training, information and communication, intersectoral coordination and financial and human resources. **Conclusion:** If the risk of an imported case is considered low at present, it is not to be excluded. With an adequate level of preparedness, Morocco could stem upstream any eventual importation of cases of EVD. However, it is important to regularly evaluate the effectiveness of the national EVD surveillance and preparedness plan, in order to adapt and strengthen coordination among all stakeholders to maximize efficiency.

KEYWORDS: Ebola - Epidemic - National Strategy - Prevention Measures.

BACKGROUND

The Ebola Virus first appeared in 1976 near the Ebola River in the Democratic Republic of Congo.[1] He is responsible for haemorrhagic fever,[2] often fatal.[3] The Ebola virus is at the origin of the 2014-2016 outbreak in West Africa, having traumatized the African people in particular and the world in general. This virus produced more cases and deaths than all previous outbreaks combined, affecting more than 28,000 people. This outbreak also has the particularity of having spread from one country to another, leaving Guinea to touch Sierra Leone and Liberia. The outbreak virus in Guinea is confirmed to be a strain of Ebola virus with a very close homology (98%) to the Ebola Zaire virus (EBOV).[4] Person-to-person transmission is through direct contact with the blood, body fluids, or skin of Ebola patients, even those who have died.[5-6] Because of its geographical proximity to the epidemic outbreak and the constant movement of populations across borders, Morocco is not immune to the possible importation of Ebola cases. The Moroccan Ministry of Health has not recorded any cases of Ebola infection in the Kingdom, but the risk is not negligible. Aware of the seriousness of the situation, the risks that the Ebola virus represents for the entire African continent, Morocco has prepared the national plan for monitoring and preparing for the response to Ebola Virus Disease (EVD), since the announcement by the World Health Organization (WHO) of the outbreak in West African countries in March 2014. This device aims to prevent the risk of introduction and spread of the disease.[7] This preparation plan has several axes: apart the precautions relating to the preparation of laboratories and hospitals for the treatment of possible cases, the main measures are taken at airports. Pre-flight control measures, so-called watch and vigilance measures on board and at points of entry. This last type of measurement includes, as an example, the obligation to control the temperature of all travelers,

the installation of a laser thermometer to measure the temperature at a distance without having to touch the passenger. A system of traceability and coordination of people from affected countries is also applied. The implementation of these measures will certainly reduce the risk of spread of the Ebola virus, but will not eradicate it.[8] That said, despite all the preventive measures put in place, zero risk does not exist and Morocco is not immune to seeing it appear on its soil.[9] One of the main objectives of this plan is to prevent the introduction of the virus into the national territory through prevention and control activities that are carried out both at the level of the affected countries through the health control of the country. Travelers on departure, and also through the control of these travelers on their arrival in Morocco and their follow-up during the 21 days after their entry into our country.

The present study was conducted with health professionals practicing at the level of medical facilities, having been involved in the detection and management of suspected cases of EVD. Its purpose is to evaluate the effectiveness of the national surveillance and preparedness plan for the EVD response, should it succeed in re-entering the country.

MATERIALS AND METHODS

It is a descriptive, quantitative study spread over a period of 3 months, from October to December 2017. Our investigation took place at the level of the following medical structures: Epidemiology and Health Surveillance Unit of the Ministry of Health - the Laboratory of Medical Virology at the Pastor Institute of Morocco - the Laboratory of Research and Biosafety P3 at the Mohammed V Teaching Military Hospital Rabat - the Virology Center, infectious and tropical diseases at the Mohammed V Teaching Military Hospital Rabat - The Moroccan Society of Sterilization - The National Institute of Hygiene in Rabat - The Ibn Rochd University Hospital Center and the Moulay Youssef Hospital in Casablanca. Included in our study all health professionals (Doctors, Pharmacists, Epidemiologists and Hygienists) who have worked at the level of the above-mentioned institutions in time of the epidemic and involved in the screening and management of suspected cases of EVD. A total of 50 health professionals has been recruited. All medical personnel who have stated that they are not involved in the screening and management of suspected EVD cases will be excluded from our study. The method used as a data collection tool is the questionnaire. The purpose of this questionnaire was to make as many suggestions as possible from health professionals to feed recommendations that can help strengthen the national Ebola threat strategy. The questionnaire data was analyzed using the Excel software.

RESULTS

The response rate is 96%. All the participants confirm that they have been informed at the national level set up by the Moroccan Ministry of Health to confront the EVD. According to the results of our survey, 85% of respondents confirm that this national plan includes measures for emergency intervention and early detection of suspected cases (Figure 1). As regards the methods of care, the results show that all health professionals confirm the presence of isolation, while 20% reported the absence of personal protection and secure transportation (Figure 2). Almost all (95%) of the study participants say they have been informed of the development of an epidemiological surveillance system by the ministry during the crisis period. With regard to the national information and communication strategy, all health professionals confirm that they have knowledge of the subject. Among them, 30% think that the socio-cultural and linguistic characteristics of the target population are not taken into account (Figure 3). According to the results of our study, 10% of the participants had no information on the presence of specialized reception facilities in charge of coordination and warning, followed by 15% who did not know that such structures are present for support national preparedness for EVD (Figure 4). The results show that 30% of the professionals involved in the study believe that the national health system does not have enough of health care staff at the level of reception facilities for suspected cases of Ebola. With regard to training, all health professionals state that they have received theoretical and practical training as well as a simulation exercise. However, 33% of professionals say that this training remains insufficient (Figure 5). All of the participants in this study confirm the availability of the necessary means of protection for the nursing staff. Among them, 33% think that these means of protection are not enough. The results of our survey show that 80% of health professionals participating in this study confirm that laboratories and hospital facilities are prepared for the management of suspected cases of Ebola, while 20% of participants state that opposite (Figure 6).

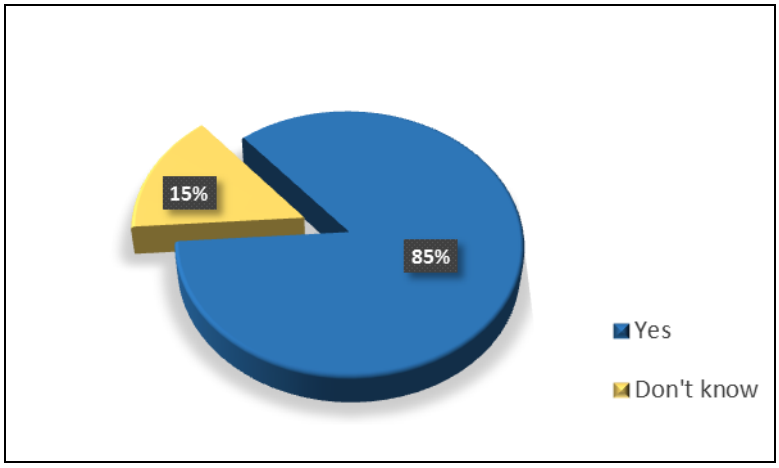

Figure 1: Emergency response and early detection of suspected cases.

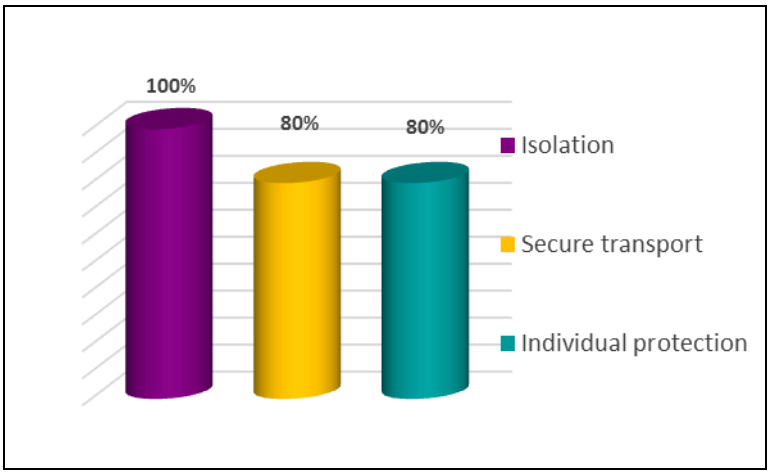

Figure 2: Patient management modalities.

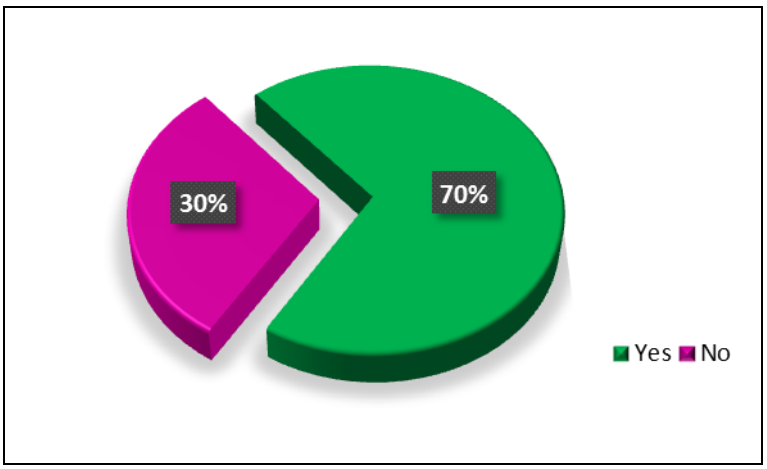

Figure 3: The National Information and Communication Strategy.

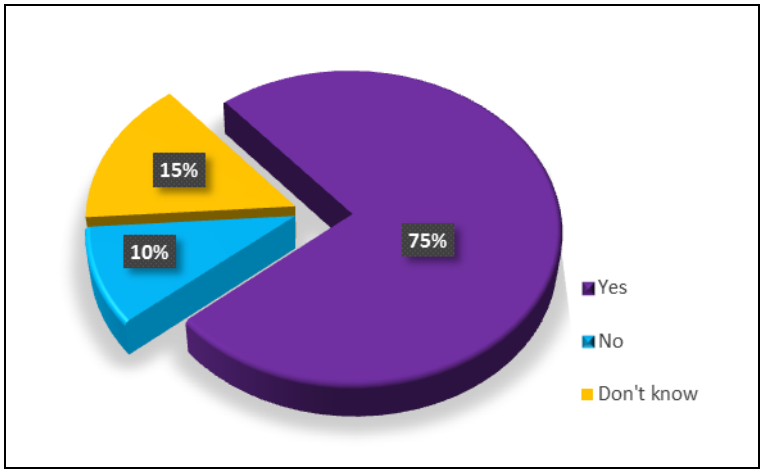

Figure 4: Reception structures responsible for coordination and alert.

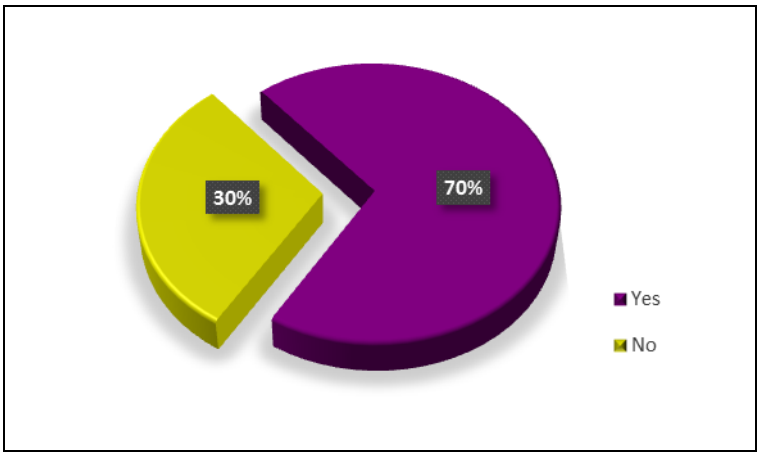

Figure 5: Training of health professionals.

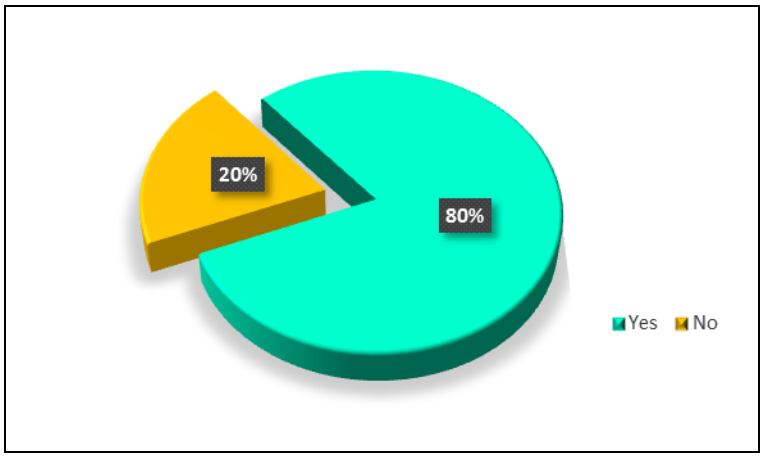

Figure 6: Preparation of laboratories and hospitals for CEP of suspected case.

DISCUSSION

This study assessed the effectiveness of the national preparedness plan for the EVD response among health professionals practicing at the level of medical facilities and involved in the detection and management of suspected cases. The exhaustive sampling made it possible to recruit the maximum of the actors involved. It targeted a sample of 48 health professionals, representing a participation rate of 96%. All health professionals involved in this study confirmed that they had been informed of the national preparedness plan for the EVD response developed by the Ministry of Health following the announcement by the WHO in March 2014 of the first cases. With regard to the national information and communication strategy, all the health professionals participating in the study confirm that they have knowledge on this subject. Among them, 30% of respondents think that the socio-cultural and linguistic characteristics of the target populations are not taken into account, which limits access to information and reduces

awareness among the population. This observation therefore puts the role of information and communication during health crises at the forefront of the scene. The experience of this crisis and other health emergencies shows that communication is often a key factor in the success or failure of a given intervention.

The results concerning the training of health professionals showed that all the participants in this study benefited from it during the crisis period. This finding is consistent with management responses confirming that health professionals have received theoretical, practical training on infection prevention and control measures, as well as simulation exercises. However, 33% rated this training as insufficient and not continuous.

According to the results of the study, 30% of participants state that there is a lack of sufficient medical staff in the reception centers for suspected EVD cases. In addition, their distribution is marked by a great territorial imbalance. Of the health professionals responding to this study, 33% believe that there is a lack of personal protective equipment. Access to treatment centers is restricted to a minimum, and personnel visiting them must wear personal protective equipment (overalls, gloves, mask, boots) to avoid any risk of contagion.

Our study reveals that 20% of health professionals say that laboratories and hospital facilities for dealing with suspected EVD cases have not been sufficiently upgraded to cope with eventual case importation. This finding diverges with the answers of officials who say that Morocco has not skimped on the means, with the acquisition of biomedical instruments at the forefront of technology for the sterilization and treatment of hospital waste related to any eventual case Ebola. Moreover, and for the first time in Morocco, four isolation rooms were installed at the Moulay Youssef hospital in Casablanca, two confinement units at the Virology Center, Infectious and Tropical Diseases (VCITD) within the Mohammed V Military Teaching Hospital, the VCITD is equipped with equipment for the management of highly contagious diseases requiring quarantine, including tropical pathologies and travel. Currently, the VCITD has 10 Level II isolation rooms, 8 Level III isolation rooms and 2 Level IV isolation rooms, housing biomedical and medical technical equipment, as well as means of protecting staff and patients meeting the international standards. All regions at risk of entry of Ebola carriers now have isolation rooms and tunnels to transport patients to hospital facilities. They are located in Oujda, Tangier, Fez, Agadir, and Dakhla. In addition, 31 ambulances deployed across the country, 8 medical transport tunnels for patients, 1 200 phones distributed for the follow-up of suspected cases, 115 infrared thermometers dispatched to several entry points in the country, 5 mobile isolation rooms. in 5 regions and 4 laboratories equipped to P3 standard. WHO is working with countries affected by EVD to assess, restructure and strengthen their integrated disease surveillance, preparedness and response systems.

At the beginning of 2015, the Minister of Health asked WHO to proceed with the evaluation of the Ebola response plan. It was conducted in February 2015 by a team of international experts and focused on 6 areas: intersectoral coordination, surveillance and follow-up of contacts, care and control of infection, laboratory, control at points of entry and communication.

The originality of this study is its strength. She seems to be the first to have tried to describe the effectiveness of the national plan in the event of a possible importation of the Ebola virus disease. It is conducted by a pharmacist to define his role in this dynamic. However, our study has some limits. Firstly, the scarcity of writings and similar empirical studies at the national level limits the review and comparison of the results of this study. Also, the difficulty of objectively targeting the structures involved in the detection and management of suspected cases of EVD. And the characteristics of the target population as well as the study environment concerning only the medical structures, do not allow the generalization of the results.

The recommendations that emerge from our study concern training, information and communication, intersectoral coordination and financial and human resources.

It is desirable to strengthen the training of health professionals at all geographical levels and to repeat this training, including through simulation exercises, taking into account the evolution of the epidemiological situation. There is indeed a risk that the routine hampers the immediate mobilization and the reactivity necessary to face a real situation of importation of cases of EVD on the national territory. It is also desirable to introduce biosafety and biosecurity into the laboratory, and biosafety management into the training of health professionals at the national level.

It is recommended to review the national information and communication strategy on the epidemiological situation of EVD. As part of the response, communication must be transparent and information management reliable. The national communication strategy must inform the public by gaining its trust. It should also provide relevant information on the EVD outbreak and invite communities to take steps to reduce the risk of exposure. Rapid intervention capabilities are needed to properly investigate suspected EVD cases, as well as procedures for sending samples promptly to the laboratory. In order to facilitate access to information, the socio-cultural and linguistic characteristics of the target populations must be taken into account.

It is preferable to strengthen coordination both internationally and nationally through the National Ebola

Response Centers. Strengthen the coordination and communication plan between the different sectors involved (airport, hospital, etc.). Indeed, it is important to maintain a national capacity to respond quickly to new outbreaks, as well as to strengthen cross-border collaboration to coordinate surveillance and information sharing and, where necessary, search for contacts and other response operations.

The response to the Ebola virus requires unprecedented financial and human resources. Among the notable difficulties, the lack of a real decentralization of the health system in Morocco. While regional directorates have been set up, they must also benefit from the transfer of skills and financial resources necessary to ensure their proper functioning.

CONCLUSION

Morocco is by its customs, its history, its geography one of the countries where the virus of the Ebola would do the most damage in case of a possible infiltration in the territory. Because of its geographical proximity to the epidemic outbreak and the constant movement of people across borders, it seems clear that our country is not immune to the possible importation of Ebola cases. Faced with a possible introduction of the virus, the Health Ministry has taken several preventive measures. These include the strengthening of sanitary control at ports of entry, in collaboration with the port authorities, including Mohammed V airport in Casablanca. There is indeed a risk that routine hinders the immediate mobilization and responsiveness needed to deal with a real case import situation. At the end of this study, it is clear that Morocco is undoubtedly well prepared to deal with possible importation of Ebola cases. The WHO regularly uses Moroccan expertise to assist other countries in the region to strengthen their capacity and perfect their preparation. Nevertheless, improvements can still be made in different areas to build a stronger system to deal with these public health threats.

What is known about this topic

- The Ebola Virus is responsible for haemorrhagic fever, often fatal.
- The Ebola virus is at the origin of the 2014-2016 outbreak in West Africa, having traumatized the African people in particular and the world in general.
- This virus produced more cases and deaths than all previous outbreaks combined, affecting more than 28,000 people.

What this study adds

- Our study emerges the recommendations for training, information and communication, intersectoral coordination and financial and human resources.

COMPETING INTERESTS

The authors declare no competing interest.

AUTHORS CONTRIBUTIONS

All the authors have read and agreed to the final manuscript.

ACKNOWLEDGMENTS

Our thanks to the health professionals who spared no effort to carry out this work,

REFERENCES

1. J. G. Breman et al., « A Search for Ebola Virus in Animals in the Democratic Republic of the Congo and Cameroon: Ecologic, Virologic, and Serologic Surveys, 1979–1980 », J. Infect. Dis., vol. 179, N° Supplement 1, p. S139‑S147, février 1999.
2. M. G. Kortepeter, D. G. Bausch, et M. Bray, « Basic Clinical and Laboratory Features of Filoviral Hemorrhagic Fever », J. Infect. Dis., vol. 204, no suppl_3, p. S810‑S816, nov. 2011.
3. B. Kreuels et al., « A Case of Severe Ebola Virus Infection Complicated by Gram-Negative Septicemia », N. Engl. J. Med., vol. 371, no 25, p. 2394‑2401, déc. 2014.
4. « Details - Public Health Image Library (PHIL) ». [En ligne]. Disponible sur: https://phil.cdc.gov/phil/details.asp?pid=1833 [Consulté le: 07-oct-2017].
5. « WHO | What we know about transmission of the Ebola virus among humans », WHO. [En ligne]. Disponible sur: http://www.who.int/mediacentre/news/ebola/06-october-2014/en/ [Consulté le: 07-oct-2017].
6. D. G. Bausch et al., « Assessment of the Risk of Ebola Virus Transmission from Bodily Fluids and Fomites », J. Infect. Dis., vol. 196, no Supplement_2, p. S142‑S147, nov. 2007.
7. « Santé Maghreb au Maroc - Revue de presse ». [En ligne]. Disponible sur: http://www.santemaghreb.com/maroc/actus.asp?id=18358 [Consulté le: 07-déc-2017].
8. « pdf13762-Virus-Ebola-quels-risques-economiques-et-sanitaires-pour-le-Maroc.pdf ». .
9. « Le Maroc sur le qui-vive face à Ebola », Al Huffington Post. [En ligne]. Disponible sur: http://www.huffpostmaghreb.com/2014/10/27/ebola-maroc_n_6027436.html [Consulté le: 07-déc-2017].