





Monkeypox in Morocco: A perspective

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ABSTRACT

Monkeypox is a zoonosis engendered by large DNA monkeypox virus, variola virus of poxviridae family. There are similarities in symptoms with smallpox but are milder in nature among monkeypox with the presence of lymphadenopathy. The incubation period is usually seven to 14 days but can prolong up to 21 days. As of June 17, 2022, there are 575 confirmed cases in United Kingdom, 497 in Spain, 338 in Germany, 276 in Portugal, 183 in France, 167 in Canada, 113 in United States of America, 95 in Netherlands, 71 in Italy, five in Israel, and one in Morocco. In response to the high risk of outbreak in Morocco, the Moroccan Ministry of Health and Social Protection has adopted the national monkeypox surveillance and response plan.

Keywords: monkeypox, Morocco, surveillance

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Monkeypox is a zoonosis engendered by large DNA monkeypox virus, a type of orthopox virus, which is similar to the causal agent of smallpox i.e., variola virus of poxviridae family [1].

There are similarities in symptoms with smallpox but are milder in nature among monkeypox with the presence of lymphadenopathy. The incubation period is usually seven to 14 days but can prolong up to 21 days [2]. Also, by direct contact, infected humans, animals, and contaminated objects transmit the disease and virus may traverse placenta [3].

In 1970, monkeypox was reported in human in the Democratic Republic of Congo, which was seen 12 years before in monkeys [1].

This started by reporting 12 Western and Central African countries as monkeypox endemic [4]. Then, on May 7, 2022, the first case of monkeypox in UK were signaled, which was traveler from Nigeria and thereafter cases were announced in several countries in Europe, Americas, and Australia [5].

As of June 17, 2022, there are 575 confirmed cases in United Kingdom, 497 in Spain, 338 in Germany, 276 in Portugal, 183 in France, 167 in Canada, 113 in United

States of America, 95 in Netherlands, 71 in Italy, five in Israel, and one in Morocco (**Figure 1**) [6].

After cases outbreak in European countries there is high a risk of outbreak in Morocco. In fact, a large number of migrant workers are in the European Union countries and every day there is movement of people between Morocco and European countries especially Spain, France, and Italy. As of June 5, 2022, Marhaba Operation, which aims to welcome Moroccans residing in Europe has lunched. Actually, the same operation in 2021 allowed the transit of 1,548,939 passengers coming from Europe to the Kingdom of Morocco [7].

On the other hand, Morocco with its intimate relationships with the countries of west Africa and central Africa is seeing more and more visitors from these African regions.

In addition, Morocco has an increasing community of sub-Saharan students which was at 4,815 in 2007-2008 with a significative increase each year [8].

Moreover, the social stigma associated with new diseases will make people reluctant to go to the hospital and keep it a secret rather than isolate themselves in society, like HIV-positive people who are often not

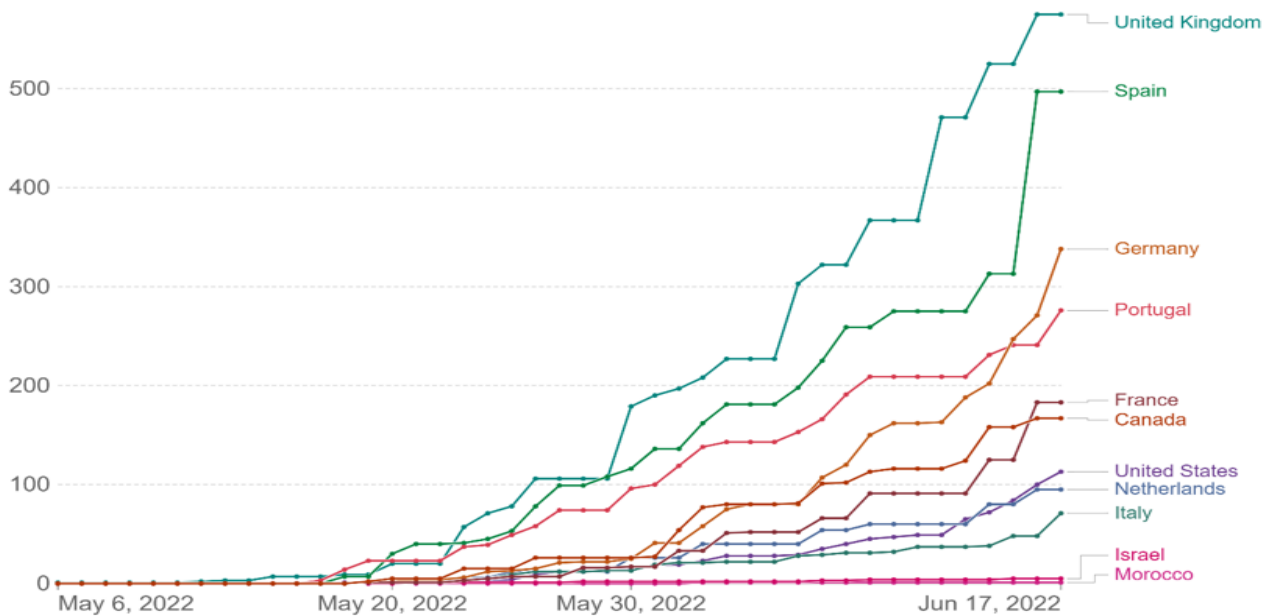
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Monkeypox: Cumulative confirmed cases, by date of confirmation

Cases are shown by the date on which they were confirmed by a test.



Source: Data produced by the 'Global.health' team — available at github.com/globaldothealth/monkeypox

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Figure 1. Monkeypox: Cumulative confirmed cases by date of confirmation (cases are shown by the date on which they were confirmed by a test) [6]

accepted by society [9]. Stigma and discrimination can also occur in monkeypox, particularly due to the widely reported sexual transmission among gay men which is badly seen in a conservative Muslim country.

In response to the high risk of outbreak in Morocco, the Moroccan Ministry of Health and Social Protection has adopted the national monkeypox surveillance and response plan. Concerning the epidemiological monitoring system, the ministry indicated that the probable cases are now anyone with a skin rash, vesicular or vesicular-pustular, with fever $>38^{\circ}\text{C}$, and in whom the usual causes, in particular chickenpox, measles, herpes, rickettsiosis or a possible allergic reaction, have been ruled out. Confirmed cases are for their part all persons in whom infection with the monkeypox virus has been confirmed by molecular technique in the laboratory.

Indeed, any suspected or probable case must be immediately declared to the provincial/prefectural health authority responsible for the health structure (public or private) where the doctor mentioned the diagnosis. The Provincial/Prefectural Delegation of the Ministry of Health and Social Protection coordinates, as a matter of urgency, with the regional public health service, the verification of the case definition and carries out the epidemiological investigation as soon as the case is classified as a probable case.

With regard to high-risk contacts, this refers to any person who has had direct, unprotected physical contact with the damaged skin or biological fluids of a probable or

confirmed symptomatic case, whatever the circumstances, including care environment, or sharing toilet utensils, or contact with textiles (clothing, bath linen, and bedding) or dishes.

Anyone who has had unprotected contact within two meters for three hours with a probable or confirmed symptomatic case (e.g., close, or intimate friend, transport environment, office colleagues, sports club, etc.), additionally, when the infection is confirmed, it is necessary to self-isolate for three weeks following the last contact with the probable or confirmed case, with twice-daily temperature monitoring. Furthermore, the provincial/prefectural rapid response team (RRT) must establish regular telephone follow-up to verify the absence of symptoms of the disease. In case of fever or rash, a contact person should not go to a health structure, but their care will be organized by the RRT [10].

Finally, the strict application of these measures as well as the cooperation of citizens, the Kingdom of Morocco can limit the progression of monkeypox.

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