

Current major event

Yellow fever outbreak in Kenya and its implication on neighbouring countries in EMR

On 4 March 2022, the Ministry of Health of Kenya declared an outbreak of yellow fever in central Kenya. This outbreak may pose a threat to neighbouring countries in the Eastern Mediterranean Region (EMR). WHO is supporting the ministries of health in Djibouti, Somalia, Sudan and Yemen to prepare for, and response to the increased risk of yellow fever.

Editorial note

Yellow fever is an acute viral haemorrhagic disease transmitted by infected mosquitoes. The "yellow" in the name refers to the jaundice that affects some patients. Symptoms of yellow fever include fever, headache, jaundice, muscle pain, nausea, vomiting and fatigue. A small proportion of patients who contract the virus develop severe symptoms and approximately half of those die within 7 to 10 days. The virus is endemic to tropical areas of Africa as well as Central and South America. In the EMR, major yellow fever outbreaks were reported from Sudan in 2012 and 2013. In Somalia and Djibouti, serological studies show evidence of circulation of yellow fever. Furthermore, *Aedes aegypti*, the mosquito species that transmits the virus from person to person exists in Djibouti, Egypt, Oman, Pakistan, Saudi Arabia, Somalia, Sudan and Yemen.

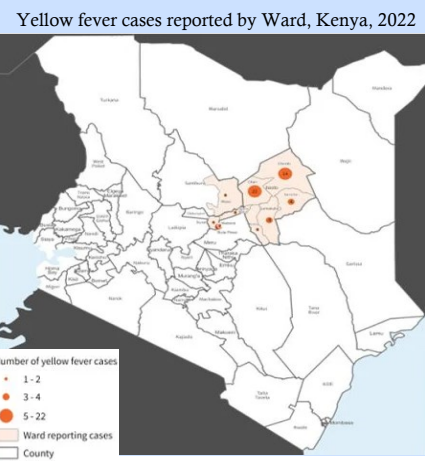
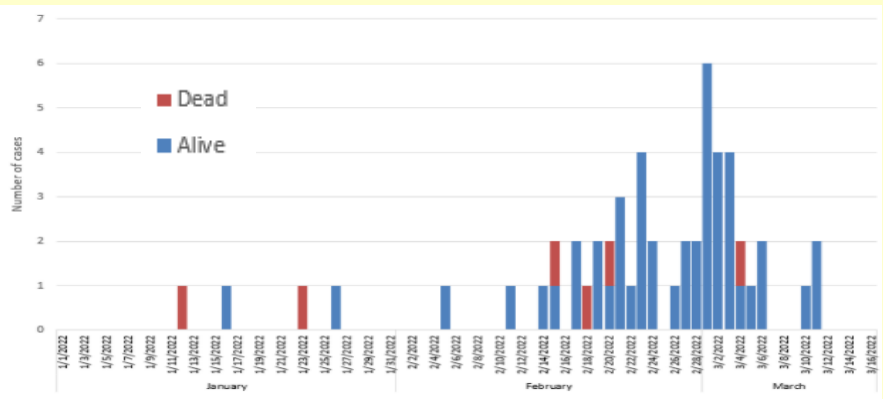
On 4 March 2022, the Ministry of Health of Kenya declared an outbreak of yellow fever in the sub counties of Merti and Garbatulla in Isiolo county (around 270 km north of the capital Nairobi). The first case was detected on 12 January 2022. As of 15 March, a total of 53 suspected yellow fever cases have been reported from Isiolo during the period from 12 January to 15 March 2022, including six deaths (case-fatality ratio: 11.3%) (Figure 1). The majority of the cases are males (47 cases; 88.7%), and the average age of the cases is approximately 28 years (range: 3–78 years).

Suspected cases presented with symptoms of fever, jaundice, and muscle and joint pain. Samples were collected from suspected cases and were tested for yellow fever at Kenya Medical Research Institute, the national laboratory, through reverse transcriptase-polymerase chain reaction (RT-PCR) and IgM antibodies by the enzyme-linked immunosorbent assay (ELISA). Two samples (6%) were found to be positive by RT-PCR, and six (18%) were positive for IgM antibodies by ELISA.

The Government of Kenya has established a national incident management structure to manage the outbreak and has developed a response plan. It also deployed a rapid response team to Isiolo and neighbouring counties to determine the extent of the outbreak, identify the at-risk populations, conduct a risk assessment, initiate risk communication and community engagement activities, and implement integrated vector control measures.

WHO and partners mobilized resources to support response activities, including a proposed

Figure 1: Yellow fever cases, Kenya, 1 January – 15 March 2022



request to the International Coordinating Group to provide vaccines for reactive yellow fever vaccination in Isiolo, with possible extension to any other county found to have cases or is at imminent risk of having them. WHO assessed the risk as high at the national and regional levels, and low at the global level.

Djibouti, Somalia and Yemen are at potential risk of having a yellow outbreak. WHO is advocating to conduct a comprehensive risk assessment to reflect the actual risk of yellow fever in these countries. Efforts should be directed towards preparedness and response interventions including the enhancement of surveillance systems focused on border crossings and points of entry to halt the risk of spread. Strengthening investigation and laboratory diagnostic capacities should also be strengthened for early detection and rapid response. Vector surveillance and control are also important components of the prevention and control of vector-borne diseases. Vector surveillance targeting *Aedes aegypti* and other *Aedes* species will help inform where there is a risk of an urban outbreak. Vaccination is the most important means of preventing yellow fever, and should be guided by risk assessment.

Several strategies could be implemented to prevent yellow fever disease and transmission, including routine infant immunization, mass vaccination campaigns designed to increase coverage in countries at risk, and the vaccination of travellers going to yellow fever endemic areas.

Update on outbreaks in the Eastern Mediterranean Region

COVID-19 in 22 EMR countries

Current public health events of concern [cumulative N° of cases (deaths), CFR %]

Coronavirus disease 2019 (COVID-19): 2019–2022

Afghanistan	178 332	7676	4.3%
Bahrain	561 525	1473	0.3%
Djibouti	15 598	189	1.2%
Egypt	511 977	24 522	4.8%
Iran (Islamic Republic of)	7 199 861	140 711	2.0%
Iraq	2 322 551	25 188	1.1%
Jordan	1 694 957	14 055	0.8%
Kuwait	630 641	2555	0.4%
Lebanon	1 095 099	10 352	0.9%
Libya	501 834	6429	1.3%
Morocco	1 164 189	16 061	1.4%
occupied Palestinian territory	656 617	5656	0.9%
Oman	388 763	4257	1.1%
Pakistan	1 526 829	30 362	2.0%
Qatar	363 139	677	0.2%
Saudi Arabia	752 188	9062	1.2%
Somalia	26 471	1361	5.1%
Sudan	62 057	4929	7.9%
Syrian Arab Republic	55 756	3148	5.6%
Tunisia	1 038 668	28 509	2.7%
United Arab Emirates	894 523	2302	0.3%
Yemen	11 815	2147	18.2%