

Current major event

Marburg virus outbreak in Ghana, 2022

Two fatal cases of Marburg virus disease (MVD) were reported from Ashanti Region, Ghana. On 28 June 2022, these cases were notified to health authorities as suspected viral hemorrhagic fever (VHF) cases and tested positive for Marburg virus on 1 July 2022. An outbreak of MVD has only been reported once previously in West Africa and this is the first time MVD has been confirmed in Ghana. An outbreak of MVD may represent a serious public health threat as it is severe and often fatal.

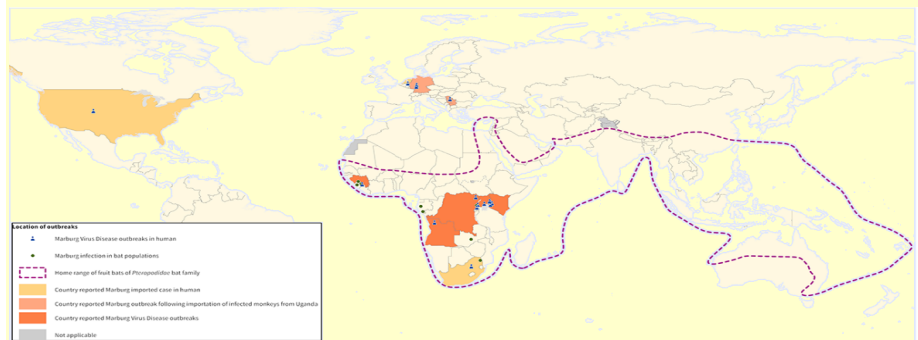
Editorial note

Marburg virus disease is a highly virulent disease that causes haemorrhagic fever, at a case-fatality ratio of up to 88%. It is in the same family as the virus that causes Ebola virus disease. Two large outbreaks that occurred simultaneously in Marburg and Frankfurt in Germany, and in Belgrade, Serbia, in 1967, led to the initial recognition of the disease. The outbreak was associated with laboratory work using African green monkeys (*Cercopithecus aethiops*) imported from Uganda. Subsequently, outbreaks and sporadic cases have been reported in Angola, Democratic Republic of the Congo, Kenya, South Africa (in a person with recent travel history to Zimbabwe), and Uganda. In 2008, two independent cases were reported in travelers who visited a cave inhabited by *Rousettus* bat colonies in Uganda (*see map*).

Human infection with MVD initially results from prolonged exposure to mines or caves inhabited by *Rousettus* bat colonies. Human-to-human transmission can occur via direct contact with the blood, secretions, organs or other bodily fluids of infected people, and with surfaces and materials contaminated with these fluids.

The incubation period varies from 2 to 21 days. Illness caused by Marburg virus begins abruptly, with high fever, severe headache and severe malaise. Muscle aches and pains are a common feature. Severe watery diarrhoea, abdominal pain and cramping, nausea and vomiting can begin on the third day. Diarrhoea can persist for a week. The appearance of patients at this phase has been described as showing “ghost-like” drawn features, deep-set eyes, expressionless faces, and extreme lethargy. Many patients develop severe haemorrhagic manifestations between 5 and 7 days, and fatal cases usually have some form of bleeding, often from multiple areas. Spontaneous bleeding at venepuncture sites (where intravenous access is obtained to give fluids or obtain blood samples) can be particularly troublesome. During the severe phase of illness, patients have sustained high fevers. Involvement of the central nervous system can result in confusion, irritability and aggression. Orchitis (inflammation of one or both testicles) has been reported occasionally in the late phase of disease (15 days). In fatal cases, death occurs most often between 8 and 9 days

Geographic distribution of Marburg haemorrhagic fever outbreaks and fruit bats of *Pteropodidae* Family



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Data Source: World Health Organization, The IUCN Red List of Threatened Species 2016
Map Production: WHO Health Emergencies Programme
Request ID: RHTM_00062
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Marburg cases reported by years

Years	Country	Cases	Deaths	CFR
2021	Guinea	1	1	100%
2017	Uganda	3	3	100%
2014	Uganda	1	1	100%
2012	Uganda	15	4	27%
2008	Netherland (ex Uganda)	1	1	100%
2008	USA (ex Uganda)	1	0	0%
2007	Uganda	4	2	50%
2005	Angola	379	329	88%

after symptom onset, usually preceded by severe blood loss and shock.

Laboratory confirmation can be done by enzyme-linked immunosorbent assay (ELISA) or real time – polymerase chain reaction (RT-PCR). Currently there are no vaccines or antiviral treatments approved for MVD. However, supportive care – rehydration with oral or intravenous fluids – and treatment of specific symptoms, improves survival.

Timely and effective outbreak control relies on using a range of interventions, namely surveillance and contact tracing, case management, a good laboratory service, safe and dignified burials, and social mobilization. Community engagement is key to successfully control MVD outbreaks. Raising awareness of risk factors for Marburg infection and protective measures that individuals can take is an effective way to reduce human transmission.

Risk reduction messaging should focus on several factors: reducing the risk of bat-to-human transmission, reducing the risk of human-to-human transmission in the community, communities affected by Marburg, outbreak containment measures, reducing the risk of possible sexual transmission and controlling infection in healthcare settings (implementing infection prevention and control).

WHO aims to prevent Marburg outbreaks by maintaining early warning surveillance for Marburg virus disease and supporting at-risk countries to develop effective preparedness and response plans.

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	[182 724 (7724), 4.2%]
Bahrain	[628 743 (1494), 0.2%]
Djibouti	[15 690 (189), 1.2%]
Egypt	[514 133 (24 724), 4.8%]
Iran (Islamic Republic of)	[7 238 840 (141 390) 2%]
Iraq	[2 353 900 (25 243), 1.1%]
Jordan	[1 700 526 (14 068), 0.8%]
Kuwait	[645 115 (2555), 0.4%]
Lebanon	[1 114 814 (10468), 0.9%]
Libya	[502 189 (6430), 1.3%]
Morocco	[1 223 585 (16 116), 1.3%]
occupied Palestinian territory (oPt)	[662 490 (5662), 0.9%]
Oman	[391 641 (4628), 1.2%]
Pakistan	[1 537 947 (30 401), 2%]
Qatar	[383 807 (679), 0.2%]
Saudi Arabia	[7696 2686 (9211) 1.2%]
Somalia	[26 8035 (1361), 5.1%]
Sudan	[62 704 (4952), 7.9%]
Syrian Arab Republic	[55 930 (3150), 5.6%]
Tunisia	[1 066 127 (28 748), 2.7%]
United Arab Emirates	[949 384 (2317), 0.2%]
Yemen	[11 824 (2149), 18.2%]