Multi-country outbreak of mpox

External Situation Report 16, published 16 February 2023
Data as received by WHO national authorities by 17:00 CEST, 13 February 2023

Risk assessment	Laboratory confirmed cases.	Deaths	Countries/ areas/ territories
Global risk – Moderate WHO Regional risk • African Region, Eastern Mediterranean Region, European Region, Region of the Americas– Moderate • South East Asia Region, Western Pacific Region – Low	85 860	93	110

Highlights

- Since the last situation report published on 2 February 2023, 411 new mpox cases (0.5% increase in total cases) and four new related deaths have been reported to WHO.
- On 7 February 2023, WHO updated the fifth global risk assessment of mpox. The public health risk at the global level is assessed as moderate, whereas the regional risk is assessed as moderate in the WHO Regions of Africa, Americas, Eastern Mediterranean and Europe and as low in the WHO regions of South-East Asia and Western Pacific, which is a change from Moderate to Low risk in the South-East Asia Region and from High to Moderate in the Region of the Americas.
- The IHR Emergency Committee on the multi-country mpox outbreak was convened for the fourth time on 9 February 2023, and the WHO Director-General concurred with the advice of the committee that the event continues to constitute a PHEIC.
- The Emergency Committee acknowledged the progress made globally and raised concerns over ongoing transmission in some countries as well as possible under-detection and under-reporting in others, especially where there was animal-to-human transmission before.
- Epidemiological surveillance of mpox should be maintained by all countries. Countries are also advised to integrate mpox prevention, preparedness and response within programmes and services for sexual health, HIV and other sexually transmitted infections, and to continue to strengthen research through a One Health approach, in coordination with partner agencies.

Epidemiological Update

Data source: WHO Multi-country mpox outbreak- Global trends

From 1 January 2022 through 13 February 2023, a cumulative total of 85 860 laboratory-confirmed cases of mpox and 93 deaths have been reported to WHO from 110 countries/territories/areas (hereafter 'countries') in all six WHO Regions (Table 1). Since the last situation report published on 2 February 2023, 411 new cases (0.5% increase in total cases) and four new deaths have been reported.

From 6 February through 12 February 2023, 13 countries reported an increase in the weekly number of cases, with the highest increase reported in Mexico (n=60). As of 13 February 2023, 33 of the 110 affected countries have reported new cases within the last 21 days, the maximum disease incubation period.

The number of weekly new cases reported globally has increased by 70% in week 6 (06 February through 12 February 2023) (n = 270 cases) compared to week 5 (30 January through 05 February 2023) (n = 159 cases), with the largest proportional increase observed in the Region of the Americas (76%). The Region of the Americas is the only region reporting an increase in cases, while the rest of the regions have reported a decline in cases or no proportional increase.

From 30 January through 12 February 2023, a total of four deaths were reported from the Region of the Americas, in the United States of America (two deaths), Peru (one death), and Nigeria (one death).

As of 13 February 2023, the 10 countries that have reported the highest cumulative number of cases globally are the United States of America (n = 29 974), Brazil (n = 10 808), Spain (n = 7533), France (n = 4128), Colombia (n = 4074), Mexico (n = 3828), Peru (n = 3737), The United Kingdom (n = 3735), Germany (n = 3692), and Canada (n = 1460). Together, these countries account for 85% of the cases reported globally.

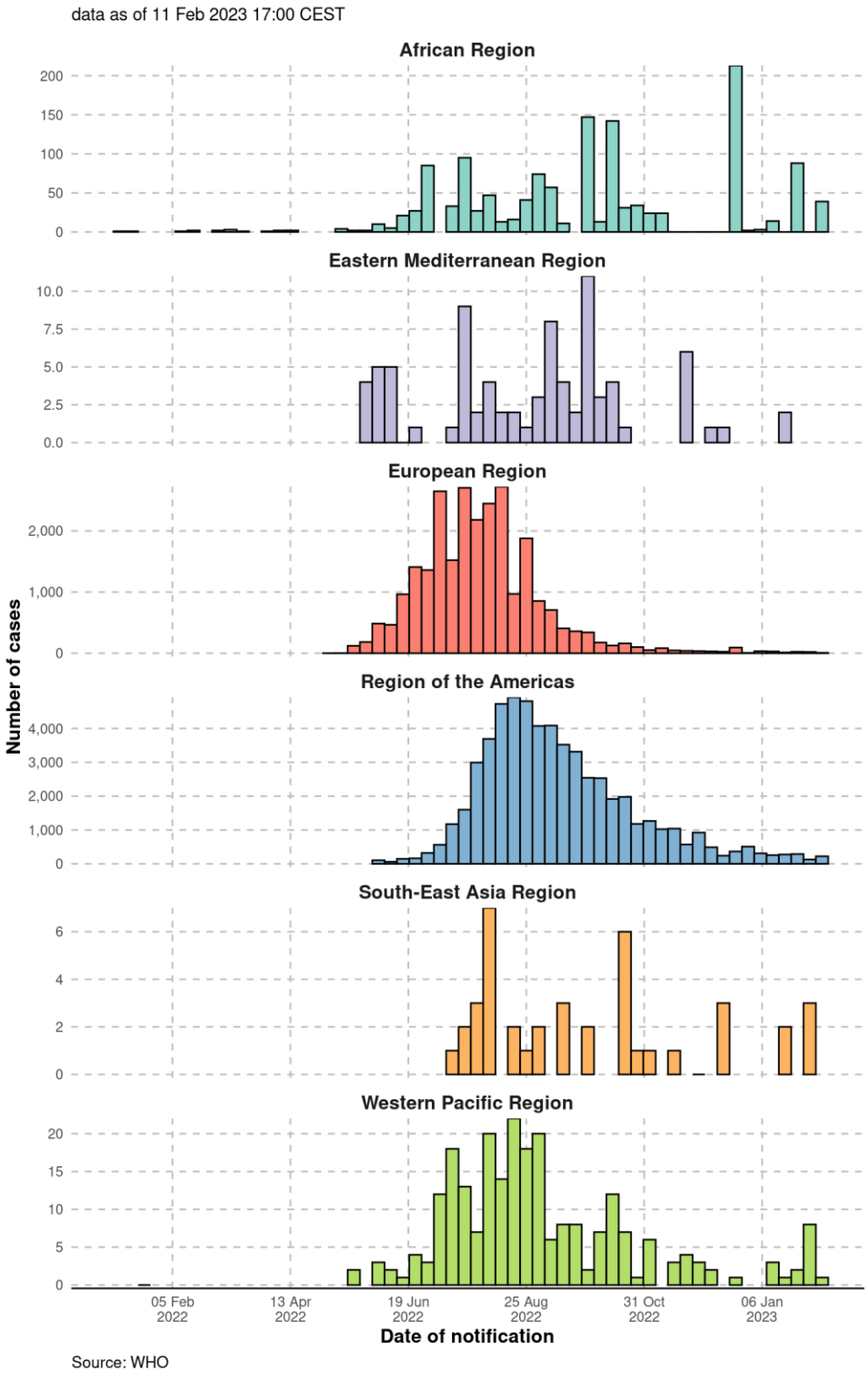
Table 1. Number of cumulative confirmed mpox cases and deaths reported to WHO, by WHO Region, from 1 January 2022 to 13 February 2023 17:00 CEST

WHO Region	Total Confirmed Cases	Total Deaths	Cases in past week[1]	7-day change in cases (%)
Region of the Americas	58 321	70	223	76%
European Region	25 832	5	7	-67%
African Region	1341	16	39	-
Western Pacific Region	244	0	1	-88%
Eastern Mediterranean Region	82	1	0	-
South-East Asia Region	40	1	0	-
Total	85 860	93	270	70%

(-) Zero cases were reported in at least one week in the past two weeks

[1] *Using the most recently completed international standard week (Monday - Sunday)*

Figure 1. Epidemiological curves of weekly aggregated confirmed cases of mpox by WHO Region, from 1 January 2022 to 13 February 2023, 17:00 CEST*

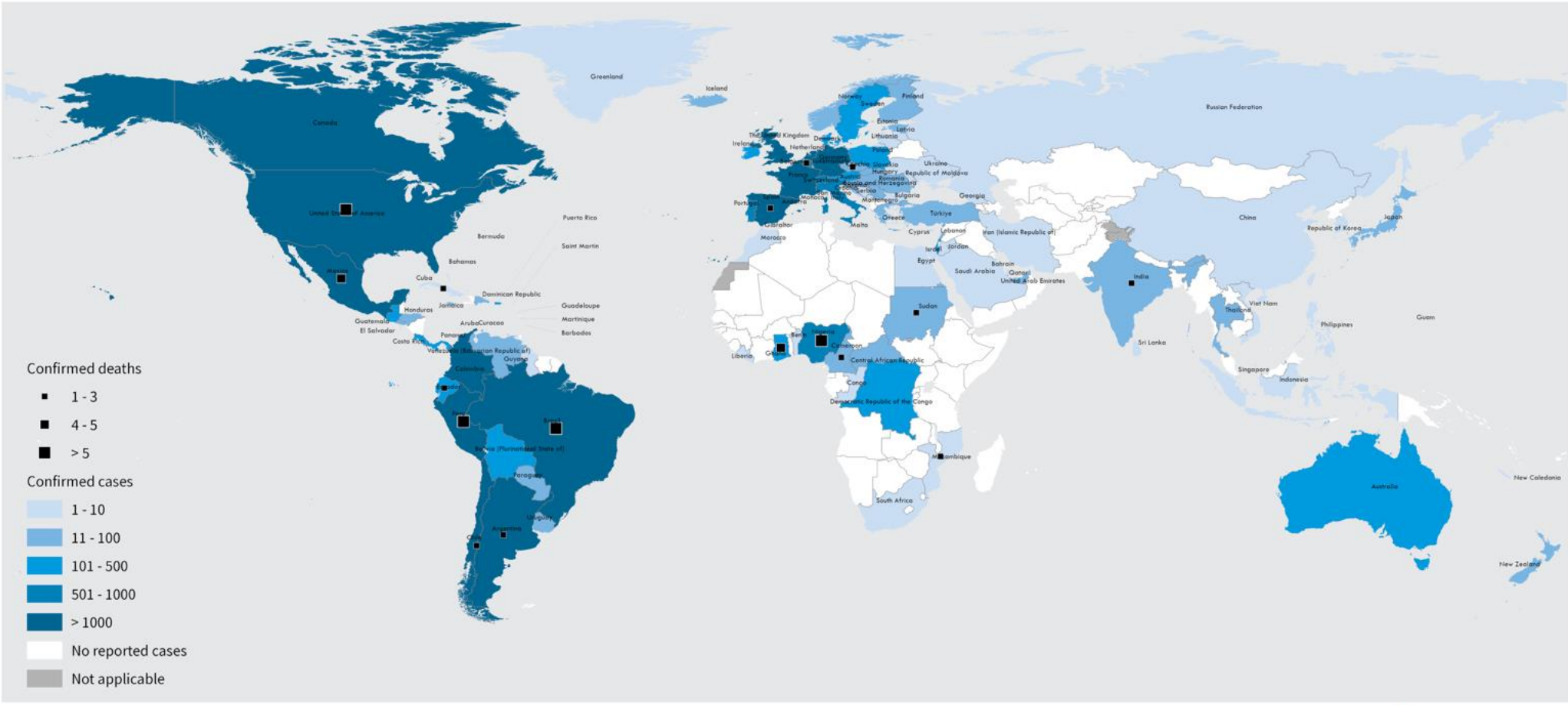


**This figure shows aggregated weekly data, for completed epidemiological weeks ending on Sundays. Data on the current week will be presented in the next situation report.*

Other key epidemiological findings:

- As of 13 February 2023, 96.5% (73 345/76 044) of cases with available data are men, with a median age of 34 years (interquartile range: 29-41 years); 1.1% (918/81 806) of cases with age data available are children, aged 0-17 years, and 267 (0.3%) are aged 0-4 years. The majority of children cases is reported from the Region of the Americas (667/918; 73%), but the overall proportion of children cases in the Americas is similar, 1.2% (667/55,638).
- Among cases with sexual orientation reported, 84.2% (26 967/32 043) have identified as gay, bisexual and other men who have sex with men. Of all reported modes of transmission, transmission through skin and mucosal contact during sex was the most reported, in 15 073 of 21 939 (68.7%) of all reported transmission events.
- Where this information is included, the most reported exposure setting is a party setting with sexual contact, comprising 3617 of 5354 (67.6%) reported exposure settings.
- Among the cases (n=36 858) who reported at least one symptom, the most common symptom is any rash and is reported in 82.7% of cases followed by fever (59.7%) and systemic and genital rash (52.5% and 46.3% respectively)
- Detailed information on the route of transmission is not available for most cases from the WHO African Region and available information on transmission might not fully describe the epidemiological spread of the virus in the region. Countries from this region have reported both person-to-person transmission, including transmission through sexual contact, as well as in some contexts primarily in Central Africa, infection from presumed contact with infected animals.

Figure 2. Geographic distribution of confirmed cases of mpox reported to or identified by WHO from official public sources from 1 January 2022 to 13 February 2023 17:00 CEST



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Data Source: World Health Organization
Map Production: WHO Health Emergencies Programme
Map Date: 14 February 2023

World Health Organization

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Temporary Recommendations issued by the WHO Director-General to WHO Member States in relation to the multi-country outbreak of mpox

The fourth meeting of the International Health Regulations (2005) (IHR) Emergency Committee on the multi-country outbreak of mpox was convened on 9 February 2023. The WHO Director-General concurs with the advice of the Committee that the event continues to constitute a Public Health Emergency of International Concern (PHEIC) for the reasons detailed in the proceedings of the meeting and has issued revised Temporary Recommendations in relation to this PHEIC. These proposed Temporary Recommendations continue to support the goal of the Strategic Preparedness, Readiness and Response Plan for Monkeypox 2022–2023 with the aim of stopping the ongoing mpox outbreak and its objectives to interrupt human-to-human transmission, protect the vulnerable, and minimize zoonotic transmission of the virus.

The WHO advises States Parties to prepare national plans for the control of mpox, and to maintain vigilance and response capacity as well as engagement with local communities and key stakeholders, following the WHO relevant guidelines. The recommendations issued by the WHO Director General are as follows.

States Parties should strengthen action in the following key areas:

1. Develop and implement operational plans, including monitoring and evaluation, to set clear targets for stopping human-to-human transmission of mpox in countries currently affected by the outbreak, and for ensuring mpox control in countries with known animal-to-human transmission. In that regard, State Parties should also consider developing surveillance and control plans that apply to situations where intimate sexual contact is not necessarily the predominant mode of transmission.

2. Maintain laboratory-based epidemiological surveillance, including reporting of the minimum dataset of variables defined in the WHO Case Reporting Form. States Parties should continue to share confirmed and probable mpox case reports with WHO through IHR communications in a timely manner. Countries should work towards the elimination of mpox (i.e. interrupting local or community transmission, and taking measures to promptly detect and contain imported outbreaks) where feasible and maintain high-quality indicator-based and event-based surveillance to underpin all such efforts.

3. Integrate mpox surveillance, detection, prevention, care and research into innovative HIV and STI prevention and control programmes and services, in order to understand risks of resurgence, detect outbreaks early, reduce barriers to health services, communicate risk, strengthen detection of undiagnosed HIV infection and early and continued antiretroviral treatment, advance clinical care for HIV-mpox co-infection, and address fear, stigma and discrimination in at-risk populations.

4. Continue to enhance access to diagnostics, vaccines and therapeutics, including through allocation mechanisms and technology transfer, and subsidy of regional manufacturing to advance global health equity in areas where people may experience barriers to care, including minorities and those in the global south.

5. Strengthen and support capacity in resource-limited settings where mpox continues to occur, including for but not limited to One Health and animal health, to better understand and characterize all modes of transmission and respond to outbreaks wherever they occur.

6. Implement a strategic and coordinated research agenda to ensure ongoing evidence generation including but not limited to a better understanding of mpox clinical virology, modes of transmission, social determinants for affected groups and clinical disease, particularly in immune-suppressed individuals, and development of countermeasures, including effective behaviour change, rapid diagnostics and next-generation therapeutics and vaccines.

Other recommendations extend or modify those issued on 1 November 2022. The detailed report including all the recommendations is available here.

Special Focus: mpox at the human-animal-interface

Context

Mpox is historically found in tropical rainforest areas of Central and West Africa where the monkeypox virus (MPXV) is thought to be maintained in wild mammal populations, with occasional spill-over to humans. Following introduction into the human population, the virus may spread via human-to-human transmission as seen in the 2022 global mpox outbreak. While not definitely identified, several rodent species, most prominently tree squirrels and Gambian pouched rats, are suspected to serve as the natural reservoir(s) for MPXV[1]. In addition, several other mammals are known to be susceptible to MPXV infection, with apes and monkeys likely serving as intermediate hosts[1]. Not all infected animals will present with symptoms of MPXV infection, such as rash, making it difficult to identify them. Zoonotic transmission may occur through bites, scratches, or direct contact with the body fluids and/or the meat of infected animals. Such contacts commonly take place during hunting, butchering, wildlife handling or bushmeat consumption. Several studies have reported contact between a person with mpox and an animal which was the likely source of infection[2].

Risks

MPXV continues to circulate in animal hosts with occasional spill over to humans, not only causing suffering in the local population but also enabling exportation of the virus to other areas or countries. Exportation from enzootic countries may occur through the international trade of susceptible animals (seen in the 2003 mpox outbreak in the United States of America[3]) or international travel of persons carrying the virus Intervention strategies to mitigate the risk of zoonotic spillover of MPXV are needed to prevent future local and global outbreaks.

Apart from continuing zoonotic spillover, there is a risk of spillback from humans to animals. In the current mpox outbreak, the virus has rapidly spread across the globe through human-to-human transmission. The presence of MPXV in new countries and territories bears the risk of its introduction into novel, local animal hosts. This may be a particular risk for Clade I or Clade IIa viruses. Viral circulation in susceptible animal populations could lead to the establishment of new animal reservoirs, making the virus enzootic to these regions. In the current global outbreak, the first potential transmissions of Clade IIb MPXV from human to animal were reported in two pet dogs in France and Brazil, with owners who were symptomatic and in very close contact with their dogs[4,5]. However, it is not confirmed whether these were true infections in these pets or detection of virus related to surface contamination[6]. The recent geographic expansion of confirmed mpox due to Clade I MPXV to Sudan where mpox had not previously been reported may be related to both extension of the known ecological niche for MPXV through virus circulation in animals and zoonotic transmission, as well as elements of human-to-human transmission in displaced persons settings.

Challenges

There are critical knowledge gaps in our collective understanding of mpox at the human-animal interface. While there are some ongoing investigations, research on animal infections remains underfunded and scarce. To better inform risk mitigation strategies to reduce transmission between animals and humans, research needs include, (i) identifying the animal reservoir(s) of MPXV, (ii) better understanding zoonotic transmission pathways of MPXV between humans and animals, (iii) understanding viral circulation in animal populations, (iv) identifying socio-economic and behavioural risk factors for spillover and spillback and (v) developing animal diagnostic capacity for MPXV.

In addition, collaboration on the global, regional and local levels between the human, animal, and environment sectors is not well-established for mpox in many countries but is necessary to ensure a holistic approach to the response. In the African region, detailed case data is only available for 29.9% (as of 13 February 2023)[7] of all identified mpox cases[7], and the balance of human-to-human and animal-to-human transmissions vary among

studies[1]. As of today, only two incidences of MPXV infections in animals have been officially reported to the World Organization for Animal Health (WOAH) (Chimpanzee in Cameroon 2016 and Pigs in Congo (dem. Rep. of) 2022)[8], showcasing the lack of detailed investigation and reporting.

Recommendations to limit spillover and spillback

Working together with international mpox experts, WOAH has published infection prevention practices to reduce the risk of viral transmission between animals and humans based on the existing data and experience with similar pathogens.

To avoid spillover from infected animals to humans in the settings where MPXV is enzootic, general good hygiene practices are recommended[9]:

- Avoid contact with susceptible animals, including sick or dead wildlife that has died of unknown causes.
- If contact cannot be avoided, reduce the risk of bites/scratches, wear personal protective equipment as necessary and wash hands after animal handling.
- Do not eat raw wild animal meat, uncooked or undercooked food, and food made with wild animal blood.
- Immediately inform the Veterinary or Wildlife Services if you find a sick or dead wild animal.
- Visit a health centre as soon as possible in case of a scratch or bite from a wild animal.

To avoid human-to-animal spillback, persons with suspected, probable or confirmed MPXV infection should whenever possible avoid close direct contact with animals, including domestic pets, livestock, and other captive animals, as well as wildlife. Infected domestic pets or livestock should be isolated until fully recovered. More detailed advice for pet owners and persons working with animals can be found in the WOAH risk guidance on reducing spillback of mpox[10].

WHO has worked closely with WOAH and their international expert groups throughout the 2022-2023 global mpox outbreak. In general, countries should ensure good coordination and communication between wildlife, veterinary, and public health services in responding to zoonotic disease outbreaks. WHO has a detailed section of possible animal exposures included in its case investigation form[11].

In case of suspicion of animal infections, animal samples should be taken for testing for the presence of virus or evidence of exposure to the virus if possible (more detailed information on MPXV diagnostics in animals can be found on the WOAH website[9]). Countries are encouraged to report cases of monkeypox or monkeypox virus infection in animals to WOAH as significant animal health information as described in Article 1.1.5 of the Terrestrial Animal Health Code.

Steps forward

WHO is working together with its partners to advance knowledge and understanding of the natural reservoir of the monkeypox virus (MPXV) and support policy makers in developing risk-reduction and management strategies for mpox at the human-animal-environment interface and minimize zoonotic transmission of MPXV in the future, as outlined in the objectives of the WHO Strategic Preparedness, Readiness, and Response Plan (SPRP) for Mpox (2022)[12]. This is achieved by supporting existing/establishing collaborative mechanisms to develop a research agenda and design, coordinate and support the generation of the needed scientific evidence.

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Mpox situation update: Eastern Mediterranean Region

Since the beginning of the outbreak and as of 13 February 2023, a total of 82 confirmed cases including one death have been reported in the Eastern Mediterranean Region. The cases were reported from ten countries, including from Lebanon (n=26), Sudan (n=18), United Arab Emirates (UAE) (n=16), Saudi Arabia (n=8), Qatar (n=5), Morocco (n=3), and one from each in Bahrain, Egypt, Iran, and Jordan. The death was reported in Sudan.

From the 54 cases with information available on age, 91% (n= 49) were reported among 18-44 years, and 4% (n=2) among 0-17 years. Sudan and Lebanon reported confirmed mpox among children below the age of 14 years. Of the 55 cases with information available on sex, 93% (n=51) were males, and 7% (n=4) were females. A total of 53 cases had information available on sexual orientation, of which, 60% (n=32) self-reported as heterosexual, while 32% (n=17) were in men who have sex with men.

Sudan is the only country in the Region reporting Clade I MPXV. Additionally, 43% of the suspected cases (115/266) reported in the country were under-5 years. As of 13 February 2023, Sudan reported 18 confirmed cases, with the latest case notified in October 2022. The cases were reported from six states, including 3 cases from refugee camps in Gedaref State. The other confirmed cases were reported from West Darfur (n=8), North Darfur (n=3), Khartoum (n=2), Central Darfur (n=1), and Kassala (n=1). The death of a 27-day old infant was reported from West Darfur State.

WHO response to mpox in Eastern Mediterranean region

WHO is providing technical cooperation and multisectoral coordination to create efficient response plans to control and stop transmission of mpox in the region as below:

Leadership and coordination:

- In May 2022, WHO set up the Multi-Disease Outbreak Incident Management Support Team (MDO IMST) to coordinate preparedness and response efforts to non-COVID-19 emergencies throughout the Eastern Mediterranean Region, at the time of the emergence of several mpox cases globally. As part of this MDO-IMST, a regional technical working group (TWG) for mpox was established with experts representing the different technical units. The TWG is mandated to closely monitor the situation, coordinate the overall regional support, and provide any country-specific assistance including response planning and capacity building activities.
- The TWG is meeting weekly and working closely with ministries of health in all Member States, academic institutions, and technical and financial partners to enhance surveillance, laboratory diagnosis, case management, infection prevention and control (IPC), and risk communication and community engagement. Region-specific technical guidance on mpox outbreak management was drafted and shared with all Member States.
- Through WHO Country Offices (WCOs), Ministries of Health in Member States were provided with technical support to conduct field investigation, analyze the epidemiological data, and timely implement response interventions.
- WHO established a regional reference group comprising regional networks and country-level MSM community organizations from Lebanon, Jordan, Morocco and Tunisia. The group convened virtually three times and provided input into the WHO guidance on response coordination, service delivery and RCCE messages. The group also shared experience (particularly Lebanese NGOs) on their involvement with the national HIV programme in raising awareness on mpox in the community, sample collection for diagnosis and contact tracing.

Mpox surveillance and laboratory support:

- To enhance early detection and diagnosis of mpox, WHO shared the surveillance guidelines-including the case definition- with all Member States immediately after declaration of the outbreak. Moreover, different Member States were provided with the needed laboratory supplies such as testing kits and reagents. In addition, WHO supported building the capacity of the laboratory staff in Member States and supported transportation of samples to reference laboratories for testing/sequencing.
- The WHO Regional Office for the Eastern Mediterranean delivered monkeypox diagnostic kits to 20 countries in 11 days: https://www.emro.who.int/media/news/who-regional-office-for-the-eastern-mediterranean-delivers-monkeypox-diagnostic-kits-to-20-countries-in-11-days.html
- During FIFA World Cup in Qatar, diseases surveillance where Mpox was part of the priority diseases was done through event-based surveillance and syndromic surveillance. For the event-based surveillance, media scanning was done by a trained national team through EIOS and Epitwitter. Daily epidemiological Sitreps were produced by State of Qatar. For the syndromic surveillance, a dedicated hospital in Doha was selected as a sentinel site.
- In Sudan, the Rapid Response Teams were trained in Mpox and are investigating the suspected cases. Additionally, PPEs and laboratory supplies for sample collection and transportation were provided.

Capacity Building Activities:

- **Pakistan mpox stakeholders' meetings and webinars:** In the 22nd and the 27th of August 2022, WHO provided both technical and financial support to Pakistan WCO to conduct two one-day awareness and capacity building workshops on mpox for the national stakeholders. The main objective of these meetings/webinars was to increase awareness about mpox, build the national/subnational capacity, and encourage the preparedness efforts for early detection and timely response. The workshops were facilitated by technical experts from WHO both regional and country offices. The main topics covered during these workshops included: Mpox epidemiology, diagnosis and laboratory investigation, case management, infection prevention and control, measures at points of entry, and risk communication and community engagement. These workshops were targeting the officials at points of entry (POE) (airports only), physicians at designated hospitals, laboratory personnel and public health officials at federal and provincial levels.

Risk communication and community engagement (RCCE):

- WHO exerted considerable effort to strategically advise Member States and communities, on public health interventions for the preparedness, prevention, and efficient control of mpox. RCCE activities were supported to increase the community's knowledge and capacity to respond to mpox. As such, meetings with NGOs and different community groups-particularly high-risk groups- were conducted to assess community values and understand perceptions/drives that might hamper/enhance rapid disease control.
- Context specific IEC materials on mpox were developed (in English and Arabic) and disseminated through the different media platforms to enhance knowledge and promote healthy practices.
- WHO EMRO | Information for the public | Mpox (monkeypox) outbreak

Communication and awareness raising:

- Throughout the year 2022 and since declaration of the mpox outbreak, WHO staff -both senior and technical- were engaged in different communication activities for the general public. Many media interviews and press conferences took place to raise public awareness and fight rumours and other negative community perceptions that might affect health care seeking behaviour and provision of appropriate health services.
- In addition, media reports on mpox reflecting the regional situation and global updates were frequently produced and published through WHO EMRO official website and social media platforms.
- WHO EMRO | First case of monkeypox reported in WHO's Eastern Mediterranean Region | News | Media centre

Gulf Cooperation Council (GCC) countries risk assessment for Mpox:

- The rapidly evolving multi-country outbreak of mpox has been recognized as a public health emergency of international concern on 23 July 2022. As some of the gulf countries started reporting indigenous cases, the Gulf population's exposure, and Gulf capacities to detect and respond to this hazard need to be reviewed in the current context to assess the risks posed and identify whether enhanced measures should be taken by health authorities. WHO – in collaboration with the Gulf Centers for Disease Prevention and Control (CDC) technically supported conduct of a two- day mpox risk assessment workshop for the Gulf Cooperation Council (GCC) countries on the 9th and 10th of October 2022 in Riyadh, Saudi Arabia. The objective of the workshop was to better understand the underlying risk factors for transmission of mpox in the Gulf region and the potential for future spread to recommend cost-effective context-specific control measures and reduce the excess morbidity associated with mpox. This included a specific assessment by Qatar of the potential risk related to the FIFA Football World Cup competition.

Technical guidance and other resources

Strategic Planning and Global Support

- WHO commentary on the naming of mpox disease and monkeypox virus clades has been published in the Lancet Infectious Diseases. 6 February 2023. New nomenclature for mpox (monkeypox) and monkeypox virus clades
- WHO recommends new name for monkeypox disease-28 November 2022 https://www.who.int/news/item/28-11-2022-who-recommends-new-name-for-monkeypox-disease
- Monkeypox Strategic Preparedness, Readiness and Response Plan (SPRP) Operational planning guidelines – 2 November 2022 https://www.who.int/publications/m/item/monkeypox-strategic-preparedness--readiness--and-response--operational-planning-guidelines
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WHO Interim Guidance and Public Health Advice

- Surveillance, case investigation and contact tracing for mpox (monkeypox): interim guidance, 22 December 2022. https://www.who.int/publications/i/item/WHO-MPX-Surveillance-2022.4
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- Emergency use of unproven clinical interventions outside clinical trials: ethical considerations: https://www.who.int/publications-detail-redirect/9789240041745
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Data management

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Risk communication and community engagement

- Public health advice for sex workers on monkeypox 30 September 2022. https://www.who.int/publications/m/item/public-health-advice-for-sex-workers-on-monkeypox
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EPI - WIN Webinars and Updates

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- WHO monkeypox technical briefing for the transport and tourism sector, 5 October 2022, https://www.who.int/news-room/events/detail/2022/10/05/default-calendar/technical-briefing-on-monkeypox-for-transport-and-tourism-sector
- Managing stigma and discrimination in health-care settings in public health emergencies such as monkeypox (Sept. 22, 2022)
- How is monkeypox spreading? What do we know so far (July 27, 2022)
- Monkeypox outbreak and mass gatherings (June 24, 2022)

EPI-WIN updates

- Update 79: Monkeypox outbreak update: Situation - transmission - countermeasures
- Update 78: Monkeypox and mass gatherings
- Update 77: Monkeypox outbreak, update and advice for health workers

Laboratory and diagnostics

- Monkeypox: experts give virus variants new names, 12 August 2022. https://www.who.int/news/item/12-08-2022-monkeypox--experts-give-virus-variants-new-names
- WHO Laboratory testing for the monkeypox virus: Interim guidance, 23 May 2022. https://apps.who.int/iris/handle/10665/354488
- WHO Guidance on regulations for the transport of infectious substances 2021-2023, 25 February 2021. https://www.who.int/publications/i/item/9789240019720
- Genomic epidemiology of monkeypox virus. https://nextstrain.org/monkeypox?c=country

One Health and animal health

- WOAH Risk Guidance on Reducing Spillback of Mpox (Monkeypox) virus from Humans to Wildlife, Pet Animals and other Animals
- WOAH Website and FAQs on Monkeypox in animals

Disease Outbreak News and situation reports

- Monkeypox outbreak 2022: https://www.who.int/emergencies/situations/monkeypox-oubreak-2022
- Multi-country outbreak of mpox, External situation report #14- 19 January 2023: https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report-14--19-january-2023
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- Multi-country outbreak of monkeypox, External situation report #10- 16 November 2022: https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--10---16-november-2022
- Multi-country outbreak of monkeypox, External situation report #9- 2 November 2022: https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--9---2-november-2022
- Multi-country outbreak of monkeypox, External situation report #8- 19 October 2022: https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--8---19-october-2022
- Multi-country outbreak of monkeypox, External situation report #7- 5 October 2022: https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--7---5-october-2022
- Multi-country outbreak of monkeypox, External situation report #6- 21 September 2022: https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--6---21-september-2022
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- Multi-country outbreak of monkeypox, External situation report #4- 24 August https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--4---24-august-2022
- Multi-country outbreak of monkeypox, External situation report #3 - 10 August 2022: https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--3---10-august-2022
- WHO Multi-country outbreak of monkeypox, External situation report #2 – 25 July 2022: https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--2---25-july-2022

- WHO Multi-country outbreak of monkeypox, External situation report #1 - 6 July 2022: https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--1---6-july-2022
- WHO disease outbreak news: Monkeypox, all items related to multi-country outbreak: https://www.who.int/emergencies/emergency-events/item/2022-e000121
- WHO disease outbreak news: Monkeypox, all previous items including endemic countries and traveler-associated outbreaks: https://www.who.int/emergencies/emergency-events/item/monkeypox

Training and Education

- WHO monkeypox outbreak toolbox, June 2022. https://www.who.int/docs/default-source/documents/emergencies/outbreak-toolkit/monkeypox-toolbox-20112019.pdf
- WHO factsheet on monkeypox, 19 May 2022. http://www.who.int/news-room/fact-sheets/detail/monkeypox
- Health topics – Monkeypox: https://www.who.int/health-topics/monkeypox
- Open WHO. Online training module. Monkeypox: Introduction. 2020
- English: https://openwho.org/courses/monkeypox-introduction
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- Open WHO. Extended training. Monkeypox epidemiology, preparedness and response. 2021.
- English: https://openwho.org/courses/monkeypox-intermediate;
- Français: https://openwho.org/courses/variole-du-singe-intermediaire

Other Resources

- WHO AFRO Weekly Bulletin on Outbreaks and Other Emergencies, all previous items: https://www.afro.who.int/health-topics/disease-outbreaks/outbreaks-and-other-emergencies-updates
- WHO 5 moments for hand hygiene. https://www.who.int/campaigns/world-hand-hygiene-day
- WHO One Health. https://www.who.int/health-topics/one-health
- World Organisation for Animal Health, founded as OIE: Monkeypox. https://www.woah.org/en/disease/monkeypox/
- Joint WHO Regional Office for Europe - European Centre for Disease Prevention and Control, Monkeypox surveillance bulletin Situation reports (who.int)
- Joint WHO Regional Office for Europe - European Centre for Disease Prevention and Control, Monkeypox Resource toolkit to support national authorities and event organizers in their planning and coordination of mass and large gathering events. https://www.who.int/europe/tools-and-toolkits/monkeypox-resource-toolkit-for-planning-and-coordination-of-mass-and-large-gathering-events/
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- Clinical management and infection prevention and control for monkeypox: Interim rapid response guidance, 10 June 2022. https://www.who.int/publications/i/item/WHO-MPX-Clinical-and-IPC-2022.1
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Annex 1: Data, table and figure notes

Caution must be taken when interpreting all data presented. Differences are to be expected between information products published by WHO, national public health authorities, and other sources using different inclusion criteria and different data cut-off times. While steps are taken to ensure accuracy and reliability, all data are subject to continuous verification and change. Case detection, definitions, testing strategies, reporting practice, and lag times differ between countries/territories/areas. These factors, amongst others, influence the counts presented, with variable underestimation of true case and death counts, and variable delays to reflecting these data at the global level.

[i]'Countries' may refer to countries, territories, areas or other jurisdictions of similar status. The designations employed, and the presentation of these materials do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Annex 2: Confirmed cases of mpox by WHO region and country from 1 January 2022 to 13 February 2023, 17:00 CEST.

*Countries with no reported cases for more than 21 days

WHO Region	Country	Total Confirmed Cases	Total Deaths
African Region	Benin*	3	0
	Cameroon*	18	3
	Central African Republic	22	0
	Congo*	5	0
	Democratic Republic of the Congo	370	0
	Ghana*	121	4
	Liberia	7	0
	Mozambique*	1	1
	Nigeria	789	8
	South Africa*	5	0
Eastern Mediterranean Region	Bahrain*	1	0
	Egypt*	3	0
	Iran (Islamic Republic of) *	1	0
	Jordan*	1	0
	Lebanon*	26	0
	Morocco*	3	0
	Qatar*	5	0
	Saudi Arabia*	8	0
	Sudan*	18	1
	United Arab Emirates*	16	0
European Region	Andorra*	4	0
	Austria*	327	0
	Belgium	793	1
	Bosnia and Herzegovina*	9	0
	Bulgaria*	6	0
	Croatia*	33	0
	Cyprus*	5	0
	Czechia*	71	1
	Denmark	196	0
	Estonia*	11	0
	Finland*	42	0
	France	4128	0
	Georgia*	2	0
	Germany	3692	0
	Gibraltar*	6	0
	Greece*	86	0
	Greenland*	2	0
	Hungary*	80	0
	Iceland*	16	0
	Ireland	228	0
	Israel*	262	0
	Italy	957	0
	Latvia*	6	0
	Lithuania*	5	0
	Luxembourg*	57	0

	Malta*	33	0
	Monaco*	3	0
	Montenegro*	2	0
	Netherlands*	1260	0
	Norway	95	0
	Poland*	215	0
	Portugal	951	0
	Republic of Moldova*	2	0
	Romania*	47	0
	Russian Federation*	2	0
	San Marino*	1	0
	Serbia*	40	0
	Slovakia*	14	0
	Slovenia*	47	0
	Spain	7533	3
	Sweden	260	0
	Switzerland*	551	0
	Türkiye *	12	0
	The United Kingdom*	3735	0
	Ukraine*	5	0
Region of the Americas	Argentina	1089	2
	Aruba*	3	0
	Bahamas*	2	0
	Barbados*	1	0
	Bermuda*	1	0
	Bolivia (Plurinational State of)	264	0
	Brazil	10 808	15
	Canada*	1460	0
	Chile	1423	2
	Colombia	4074	0
	Costa Rica	140	0
	Cuba*	8	1
	Curaçao *	3	0
	Dominican Republic*	52	0
	Ecuador	497	2
	El Salvador	88	0
	Guadeloupe*	1	0
	Guatemala	362	0
	Guyana*	2	0
	Honduras	16	0
	Jamaica*	18	0
	Martinique*	7	0
	Mexico	3828	4
	Panama	129	0
	Paraguay	92	0
	Peru	3737	16
	Puerto Rico	210	0
	Saint Martin*	1	0
	United States of America	29 974	28
	Uruguay*	19	0

	Venezuela (Bolivarian Republic of) *	12	0
South-East Asia Region	India*	22	1
	Indonesia*	1	0
	Sri Lanka*	2	0
	Thailand	15	0
Western Pacific Region	Australia*	144	0
	China	7	0
	Guam*	1	0
	Japan	19	0
	New Caledonia*	1	0
	New Zealand*	41	0
	Philippines*	4	0
	Republic of Korea*	4	0
	Singapore*	21	0
	Viet Nam*	2	0
Cumulative	**110 Countries/territories/areas**	**85 860**	**93**

[#]Only deaths among confirmed cases are reported here; the reported number of deaths due to mpox among suspected cases are available at regional or national level.