

Multi-country outbreak of mpox

External Situation Report 18, published 16 March 2023

Data as received by WHO national authorities by 17:00 CEST, 13 March 2023

Risk assessment	Laboratory confirmed cases	Deaths	Countries/areas/territories
Global risk – Moderate	86 496	111	110

WHO Regional risk

- African Region, Eastern Mediterranean Region, European Region, Region of the Americas– Moderate
- South East Asia Region, Western Pacific Region – Low

Highlights

- Since the last [situation report](#) published on 2 March 2023, 323 new mpox cases (0.4% increase in total cases) and 11 new related deaths have been reported to WHO.
- Globally, the number of mpox cases continues to slowly decline, with the Americas remaining the region with most of the reported cases, while transmission and reporting are more continuous and sustained in the African region with no clear downward trend. In the other regions, sporadic cases and small clusters are being reported.
- This situation report provides an update on the clinical presentation and management of severe mpox and on mpox deaths. In the current outbreak, all reported deaths have occurred in adult males, most of whom were immunocompromised, either due to untreated or uncontrolled HIV Infection or other immunocompromising conditions.

Epidemiological Update

Data source: [WHO Multi-country mpox outbreak- Global trends](#)

From 1 January 2022 through 13 March 2023, a cumulative total of 86 496 laboratory-confirmed cases of mpox, including 111 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 March 2023, 323 new cases (0.4% increase in total cases) and 11 new deaths have been reported. The outbreak shows a long-tail epidemic curve with a trend of slowly declining numbers of new cases in the last weeks.

The number of weekly new cases reported globally has declined by 14% in week 10 (6 March through 12 March 2023) (n = 132 cases) compared to week 9 (27 February through 5 March 2023) (n = 154 cases), with the Region of the Americas reporting the majority (92%) of cases in the past three weeks. The Western Pacific Region reported an increase in cases in the last three weeks compared to the three weeks prior, while the rest of the regions have reported a decline in cases or observed no proportional increase (Table 1).

From 28 February through 13 March 2023, 10 countries reported an increase in the weekly number of cases, with the highest increase reported in Mexico (n = 51). As of 13 March 2023, 26 of the 110 affected countries have reported new cases within the last 21 days, the maximum disease incubation period. Sixteen of them are in the Americas, five are in Europe, three are in the Western Pacific Region, and one country each in the African Region, the Eastern Mediterranean Region, and the South-East Asia Region. Some of these countries continue to have sustained community transmission of mpox, while others only report sporadic cases. From 28 February through 13 March 2023, a total of 11 deaths were reported. Ten deaths were reported in the Region of the Americas, five from Peru, four from the United States of America, and one from Costa Rica. One death was reported in the European Region, in Belgium.

As of 13 March 2023, the 10 countries that have reported the highest cumulative number of cases globally are the United States of America (n = 30 039), Brazil (n = 10 878), Spain (n = 7543), France (n = 4128), Colombia (n = 4085), Mexico (n = 3928), Peru (n = 3774), the United Kingdom (n = 3738), Germany (n = 3692), and Canada (n = 1460). Together, these countries account for 84.7% 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 March 2023 17:00 CEST

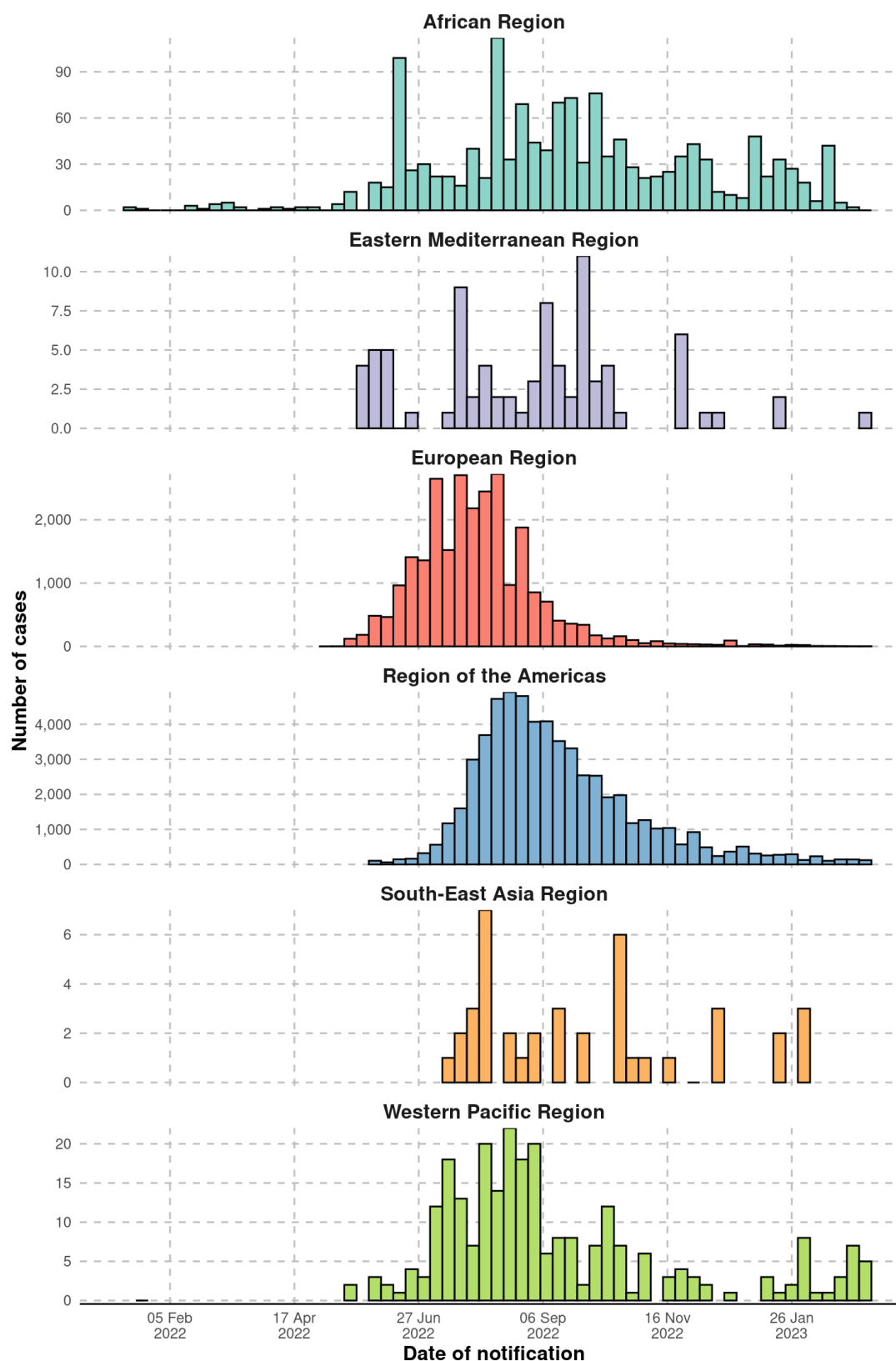
WHO Region	Total Confirmed Cases	Total Deaths	Cases in last 3 weeks ¹	3-week change in cases (%)
Region of the Americas	58 843	86	408	-37%
European Region	25 849	6	11	-79%
African Region	1420	17	7	-86%
Western Pacific Region	260	0	15	36%
Eastern Mediterranean Region	83	1	1	-
South-East Asia Region	41	1	0	-
Total	86 496	111	442	-42%

(-) Zero cases were reported in at least one of the three-week periods in the past six weeks

¹ Using the three most recently completed international standard weeks (Monday - Sunday)

Figure 1. Epidemiological curves of weekly aggregated confirmed cases of mpox by WHO Region, from 1 January 2022 to 12 March 2023, 17:00 CEST*

data as of 12 Mar 2023 17:00 CET



Source: WHO

**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.*

The epidemic curves showed in Figure 1, although subject to reporting bias, suggests that the outbreak is heading towards an end in the European Region, and more slowly in the Americas. In the African Region, the epidemic curve shows more sustained transmission, with the trend not suggesting an end of the epidemic. This reflects mixed patterns of human-to-human transmission through physical and/or sexual contact as well as outbreaks due to zoonotic spillover events with subsequent human-to-human spread. The remaining three regions report sporadic cases and clusters rather than sustained transmission and highlight the potential risk of reintroduction of cases even after a few weeks with no reported cases.

Other key epidemiological findings:

- As of 13 March 2023, 96.4% (79 275 / 82 194) of cases with available data are men, with a median age of 34 years (interquartile range: 29-41 years). This pattern has been quite stable over time.
- Of cases with age data available, 1.1% (951 / 87 916) are children aged 0-17 years, including 268 (0.3%) aged 0-4 years. The majority of pediatric cases were reported from the Region of the Americas (703 / 951; 74%). The overall proportion of child cases in the Americas is 1.1% (703 / 61 658), similar to the proportion which has been observed globally.
- Among cases with sexual orientation reported, 82.1% (28 480 / 34 690) have identified as gay, bisexual and other men who have sex with men. This proportion, while slightly fluctuating over time, has consistently been above 75%, highlighting that most transmission continues to occur in this community.
- Of all reported modes of transmission, skin and mucosal contact during sex was the most reported, in 15 353 of 22 293 (68.9%) of all reported transmission events.
- Where information is available, the most reported exposure setting is party setting with sexual contact, comprising 3804 of 5580 (68.2%) reported exposure settings. In recent months, transmission in a household setting as a proportion of all settings reported has increased from around 10% previously to 22% in the last three months.
- Among the cases (n = 38 703) who reported at least one symptom, the most common symptom is any rash, reported in 83.3% of cases, followed by fever (59.5%), and generalized or genital rash (54.2% and 47.1% respectively). The symptomatology of cases has been very consistent over time in this outbreak.
- 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 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.

Mpox deaths

Since the beginning of the outbreak, 111 mpox deaths have been reported to WHO, with a case fatality ratio (CFR) of 0.13% (n=86 496). Although WHO has provided a [definition of mpox death for surveillance purposes](#), several countries conduct in-depth clinical evaluations to establish the primary cause of the fatality, therefore not all persons dying with confirmed mpox infection are considered by countries to be mpox deaths or reported as such to WHO.

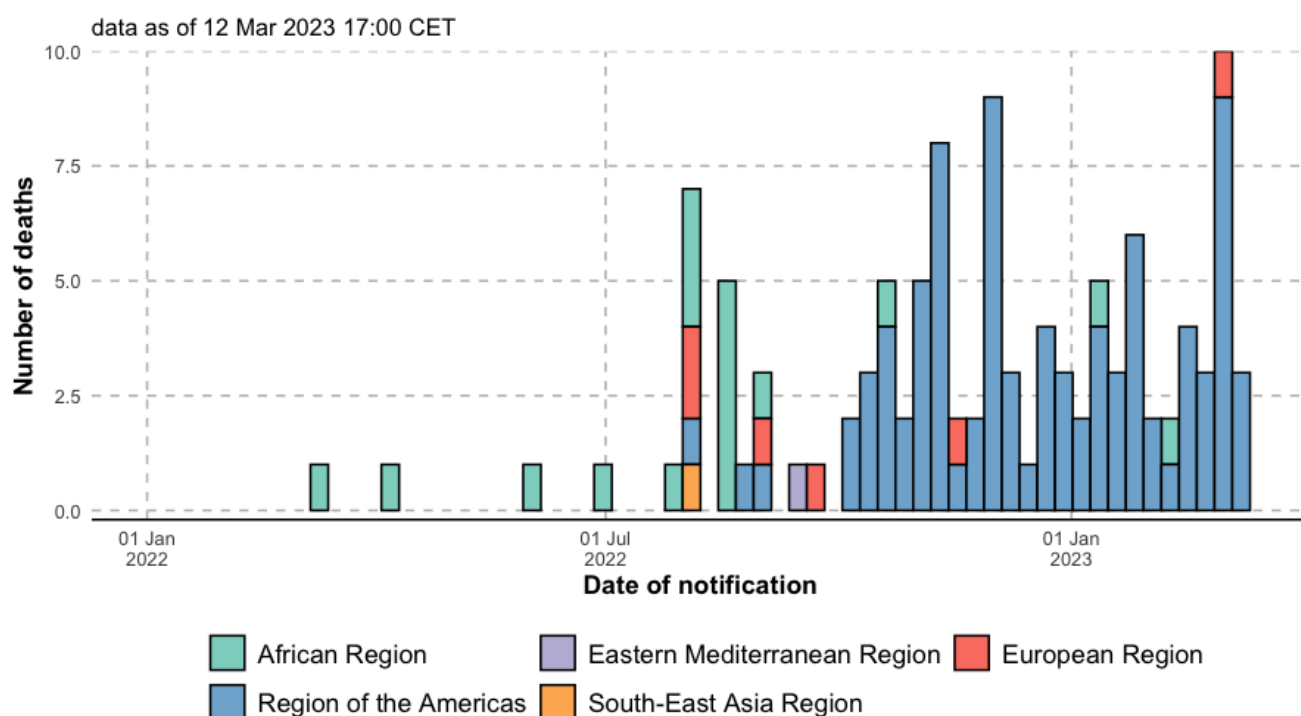
Of the 111 reported deaths globally, only 32 (29%) have had their case-based information shared with WHO. As shown in Figure 2, five WHO regions reported mpox deaths in 2022-23, but case-based information was available only for nine countries, from the Americas and Europe regions. (Table 2).

All 32 deaths with available information occurred among male cases, mainly in the most affected age groups (18-49 years old) (Figure 3). Among those with available information, 85% (22/26) identified as gay, bisexual and other men who have sex with men, and eight had a concurrent sexually transmitted infection (seven syphilis and one chlamydia). Hospitalization was reported in 87% (27/31) of deaths and 52% (14/27) were admitted to an intensive care unit (ICU). A total of 25 deaths were reported being positive for HIV, and of them 22 were also reported to be immunocompromised. One death occurred in a person who was reportedly immunocompromised

but not living with HIV-positive yet. In total, 72% (23/32) of mpox deaths were among immunocompromised persons.

Given the low number of reported deaths with detailed information, these results need to be interpreted with caution. Since these reports are from the Americas and Europe, they are not representative of all mpox deaths throughout other regions.

Figure 2. Number of mpox related deaths reported to WHO over time, by WHO Region, from 1 January 2022 to 13 March 2023 17:00 CEST

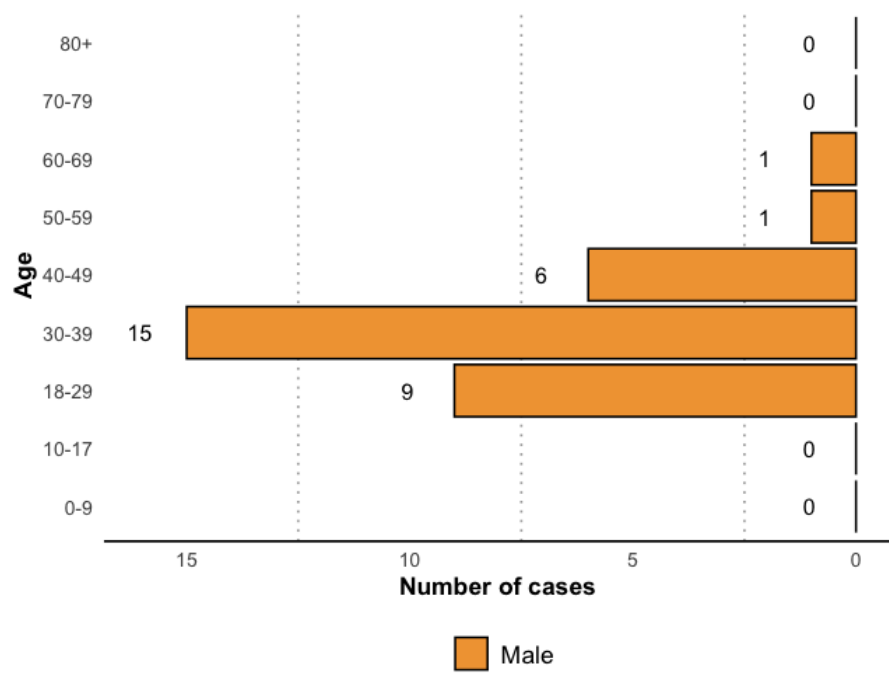


Source: WHO

Table 2. Number of mpox related deaths reported to WHO for which case details are available, by WHO Region and country, from 1 January 2022 to 13 March 2023 17:00 CEST

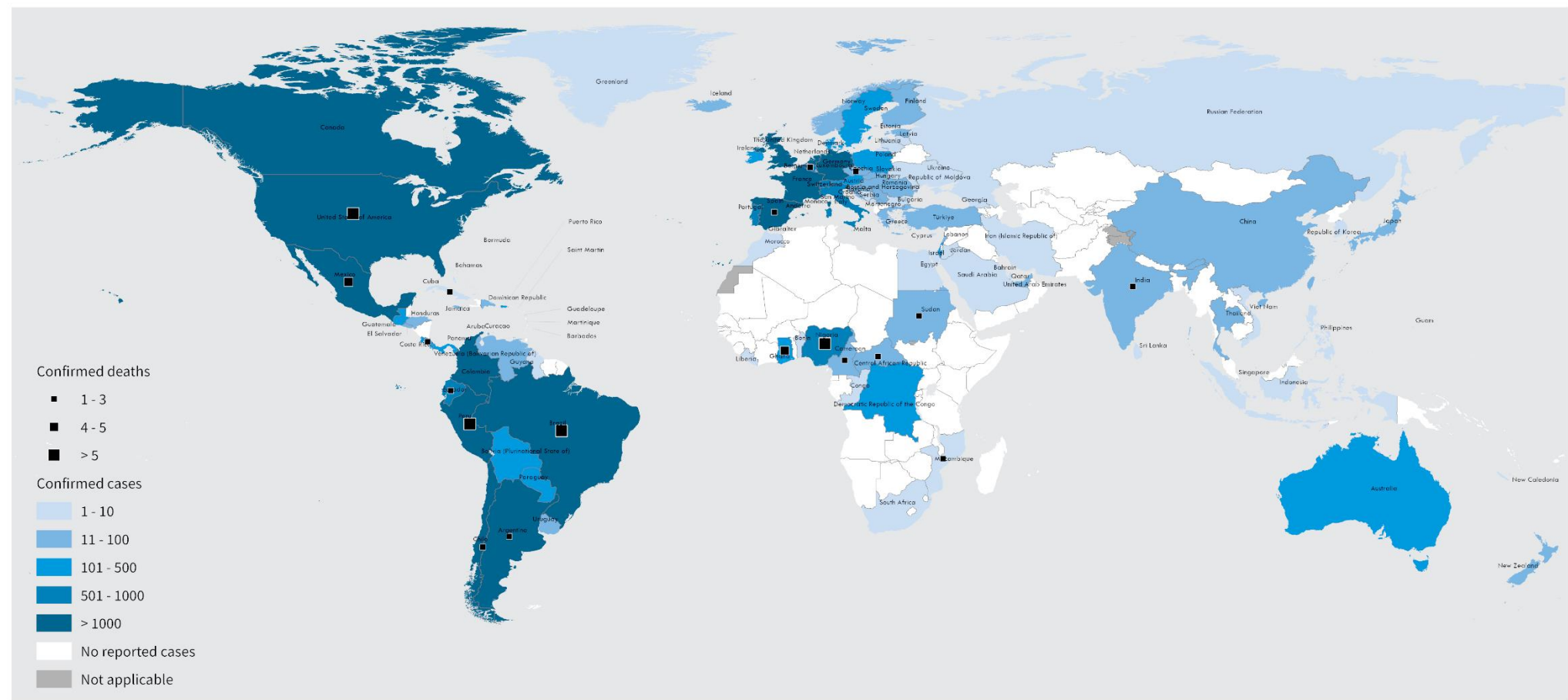
Region	Country	Deaths
AMR	Brazil	15
	Peru	5
	Argentina	2
	Ecuador	2
	Costa Rica	1
	Cuba	1
EUR	Spain	3
	Belgium	2
	Czechia	1
Total		32

Figure 3. Age and sex pyramid of mpox deaths with case detailed information as reported to WHO, from 1 January 2022 to 13 March 2023 17:00 CEST



Source: WHO
32 cases with age-sex data

Figure 4. Geographic distribution of confirmed cases of mpox reported to or identified by WHO from official public sources from 1 January 2022 to 13 March 2023 17:00 CEST



The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

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

Introduction

Human disease due to mpox was first identified in 1970 in a 9-month-old boy in the Democratic Republic of the Congo (DRC) and until the multi-country global outbreak in 2022 most cases had been reported across Central and West Africa^{1,2}. There are two known clades of the monkeypox virus, Clade I formerly known as the Congo Basin clade and Clade II formerly known as the West African clade, Clade I which encompasses two phylogenetically distinct subclades, IIa and IIb³. The current global outbreak is related primarily to clade IIb^{3,4}.

Clinical Presentation

Mpox can cause a range of clinical signs and symptoms. Historically the initial phase of the illness was described as typically lasting 1 to 5 days, during which time patients experience a classic prodrome of fever, headache, back pain, muscle aches, lack of energy, and lymphadenopathy (swollen lymph nodes) – a distinctive feature of this disease⁵. This is usually followed by a second phase, which occurs 1 to 3 days after the fever subsides with the appearance of a rash^{6–8}. The rash presents in sequential stages- macules, papules, vesicle, pustules, umbilication before crusting over and desquamating over a period of 2 to 3 weeks. The lesions range in size from 0.5 to 1 cm in diameter and from a few to several thousand in number^{1,2}. The eruption is typically centrifugal, starting on the face and extending towards the palms and soles of the hands and feet, and may also involve the oral mucous membranes, conjunctiva, cornea and/or genitalia^{2,9}.

In the DRC, where Clade I is found, in addition to the characteristic rash and nearly universal lymphadenopathy (98.6%), mouth or throat lesions occur in a quarter of cases; these can cause nutritional or breathing problems⁵ and are particularly problematic when they occur in already vulnerable (e.g., malnourished) children.

Conversely, during the 2022-2023 multi-country outbreak, the clinical presentation of mpox has often differed from the classic description and progression outlined above. Many individuals present with the skin lesions in the genital area or as newly described in this outbreak, in the perianal region, and in some instances may have only one or a few lesions that do not spread further¹⁰. Many have presented with skin rash as the first sign of illness, rather than lesions being preceded by a typical prodrome of systemic symptoms¹⁰. Skin lesions may occur in different stages of development¹⁰, a phenomenon known as cropping observed particularly among patients who have persistent infection over an extended period of time. A history of prior or concurrent sexually transmitted infections (STIs) has also been newly described during the global outbreak by a rapid review conducted in the UK¹¹.

In addition to the findings from the global data presented here, a description of the first 1000 mpox cases in the Netherlands reported that a majority (95%) of cases were among MSM with a median age of 37 years. Most cases contracted mpox through casual sexual contact in private or recreational settings and a majority (75%) presented with lesions in the genital or perianal region¹². Another study of 211 patients in 15 countries reported that 208 (99%) cases were MSM and had a median age of 37 years (range: 18 – 68, IQR 32-43). In 209 patients for which HIV status was known, 92 (44%) were persons living with HIV who had a median CD4 count of 713 cells/mm³ (range: 36 – 1659 cells/mm³). A total of 193 were tested for sexually transmitted infections (STIs) and 29 (15%) had concurrent infections, with gonorrhea (*Neisseria gonorrhoeae*, 5%) or syphilis (*Treponema pallidum*, 3%) being most common. A total of 30 (13%) were admitted to hospital, with 16 (53%) admitted for clinical care (and the others for isolation)¹³.

Although MSM are the population group most affected with mpox during the global outbreak, there are also reports of women having mpox. A case-series describing mpox in 136 women and non-binary individuals reported that 121 (89%) reported sex with men and that 37 (27%) were living with HIV. Sexual transmission was suspected in 55 (89%) transgender women and 45 (61%) cisgender women and non-binary individuals. Clinical features in women and non-binary individuals were similar to those described in men, with rash described in 124 (93%) and anogenital lesions in 95 (74%) of 129 individuals for which data were available¹⁴.

Special considerations

Clade: Historically, Clade I monkeypox virus (MPXV) was reported to be more virulent, with a case fatality ratio (CFR) ranging from 1-10%^{2,15,16}. Clade II MPXV has historically been associated with an overall lower mortality of <3%^{16,17}. The current global outbreak is primarily related to clade IIb and as of 8 March 2023 there have been 111 deaths reported to WHO, yielding a CFR among reported cases of 0.13%¹⁸.

Vaccination: Historically, prior smallpox vaccination has been associated with lower frequency of severe complications or poor outcomes related to mpox, compared with no previous vaccination (39.5% vs 74%)⁹. Currently studies are ongoing to assess the vaccine effectiveness of one third-generation vaccine (MVA-BN) in preventing mpox within the context of the multi-country outbreak, with several studies starting to report promising initial results. Vaccine effectiveness estimates of MVA-BN against mpox suggest a range of 66% to 83% for persons having received full vaccination (two doses) and 36 to 86% for a single dose of vaccine (WHO, unpublished data).

Special populations

Historically, most reported deaths have occurred in young children and immunocompromised individuals, such as those with untreated or poorly controlled HIV^{9,17,19}.

Persons with HIV and/or immune suppression: Emerging data increasingly suggest that severe morbidity and mortality are associated with mpox among highly immunocompromised patients, including those with untreated or uncontrolled HIV infection. Co-infection with HIV is known to be associated with a higher rash burden and more frequent perianal lesions¹³. A recent report from 19 countries reported more frequent occurrence of severe disease due to mpox in persons living with HIV during the 2022 global outbreak²⁰. In this study, severe disease occurred most often amongst those with immune suppression, with severe mpox manifesting as severe skin lesions, complications affecting the lungs, or sepsis. Amongst those admitted to hospital, death occurred in 25%, more frequently in those with HIV and advanced immunosuppression (low CD4 count) or high viral load²⁰. Another descriptive case-series of 57 patients hospitalized for mpox in the United States reported that most were male (95%) and non-Hispanic black (68%). A majority (82%) had HIV infection and 31 (54%) were significantly immunosuppressed with a CD4 count below 50 cells/mm³. All 57 patients had severe skin lesions and 39 (68%) had severe mucosal lesions; patients further had involvement of the lungs (21%), eyes (21%) or brain or spinal cord (7%). Overall, 12 individuals with mpox (21%) died²¹. Of all admissions to hospital in the UK, 30% were for pain management, particularly from rectal pain and penile swelling²².

Pregnant individuals: Relatively few data are available about outcomes of mpox in pregnancy. Prior to the current global outbreak, in utero transmission of mpox had been documented, as had transmission from mother to child via direct contact. In a case series of four women with mpox in the Democratic Republic of the Congo (DRC) who were presumably infected with Clade I, one delivered a healthy baby, two had early miscarriages, and one experienced a fetal death where the stillborn was covered with diffuse rash with virologic confirmation of mpox^{23,24}. Of the cases of mpox reported in pregnant individuals during the present global outbreak, none of the infections in pregnant women has been reported as severe; there have been no reports to date of pregnant individuals having more severe disease or worse outcomes compared to non-pregnant individuals²⁵. Despite these limited data, there is an urgent need for an international registry or reporting system to better understand the clinical course, management, treatment, and outcomes of mpox in pregnant persons with mpox.

Children: In 2003, during a clade II mpox outbreak of 37 individuals in the USA, children were hospitalized in intensive care units at significantly higher rates than adults²⁶. In DRC, in a cohort of 216 patients with mpox due to Clade I, there were three deaths in patients <12 years of age²⁷. During the current multi-country outbreak, data from the US Centers for Disease Control and Prevention (CDC) show that mpox in children and adolescents < 18 years represents 0.3% of all US cases and none resulted in critical illness or death. In 28 children aged 0-12 years, most developed mpox after skin-to-skin contact with a household member with mpox during care-giving. In 55 adolescents aged 13 -17 years, most who developed mpox were male and male-to-male sexual contact was the most common presumed exposure route (66%)²⁸.

Complications of mpox

Many complications due to mpox have been described. These include severe pain; infection of skin lesions leading to bacterial superinfection, cellulitis, abscesses, or necrotizing soft tissue infections; pneumonia and/or respiratory distress; corneal infection leading to vision loss; vomiting and diarrhoea leading to severe dehydration; sepsis and septic shock; encephalitis; and death²⁹. During the global outbreak, these complications have also been reported to occur, as well as newly described complications such as mucosal ulceration, proctitis, colitis, myocarditis, urethritis, balanitis, and parotitis^{10,30,31}.

Hospitalization due to complications related to mpox has been uncommon during the current outbreak. People with mpox usually need hospitalization for management of pain, nausea or vomiting, ocular involvement, proctitis, colitis, urethritis, secondary infections, or respiratory complications. In those with and without documented immune suppression in the United Kingdom (UK) in 2022, most individuals hospitalised for mpox required strong pain relief and treatment for severe infection^{30,32}.

Mucosal lesions: Some mucosal lesions may cause complications due to strictures, swelling (oedema), bleeding, and/or necrosis^{31,33}, such as in the mouth (reduced oral intake and difficulty breathing), the urethra and genitalia (painful urination and urethral strictures), or the rectum (painful bowel movements)

Ocular mpox: Ocular complications related to mpox have been described in the past and have also been well documented during the current outbreak. It is important to consider ocular mpox in patients who present with eye complaints such as pain, redness, drainage, vision changes or loss, or periorbital swelling. Ocular infection may present as blepharitis, conjunctivitis, conjunctival lesions, and/or keratitis. Lesions may also occur on external areas such as the eyelids. Some patients with ocular mpox have experienced delays in treatment, which may lead to complications such as vision loss; patients with suspected ocular mpox should be referred immediately to appropriate specialists (e.g. ophthalmology) for evaluation and care^{22,31,34,35}.

Neurologic complications: Historically, encephalitis (inflammation of the brain) has been reported as a complication of mpox. During the current global outbreak, cases of encephalitis and myelitis have been reported with patients presenting with severe headache, back or neck pain, altered mental status, seizures, and focal neurological deficits^{31,36,37}. The mechanism by which this occurs is still not fully understood. In patients with suspected neurologic complications, consultation with appropriate specialists such as neurologists may be considered to evaluate for other neurologic diseases with similar presentations, and evaluation of cerebrospinal fluid (CSF) may be considered^{29,35}.

Myocarditis: During the current outbreak, cases of myocarditis (inflammation of the heart muscle) have been described, although the mechanism by which this occurs is not fully understood³⁸. Individuals may present with new onset of shortness of breath, chest pain, and/or irregular heartbeat. They may have elevated cardiac biomarkers and changes to their electrocardiogram. In patients with suspected myocarditis, consultation with a cardiologist may be considered³¹.

Long term complications: Historically in those who developed long-term complications, the most common sequelae described have been disfiguring scarring of the skin and blindness^{7,9,39}. Pitted scars (pockmarks) also occur^{7,9}. Patients are at risk of developing mental health complications^{8,40}. A recent report from Belgium described the medium and long-term morbidity of 95 patients following an acute episode of mpox (3 to 20 weeks after infection) during the current outbreak. Half of those who had anorectal pain at diagnosis had persistent anorectal complaints at follow-up, and one-third who had prior genital lesions had persistent genital problems at follow-up. Other co-morbidities included loss of physical fitness, fatigue, new-onset or worsening of mental health complications (e.g., anxiety, stress, and/or depressive symptoms)⁴¹.

Towards characterization of severe mpox

As described, patients with mpox may develop severe and life-threatening complications. There is no single agreed definition of severe mpox disease. However, a number of reports have described examples of severe disease, and these might be grouped into:

- 1) lesions associated with disabling symptoms (e.g. pain³², difficulty swallowing^{7,26})
- 2) complications of skin or mucosal disease which require hospital management. Confluent skin lesions are susceptible to bacterial infections which require meticulous wound care, and sometimes surgical

intervention such as skin grafts^{7,8,26}. Involvement of the eyes needs careful management to attention to prevent corneal infection leading to loss of vision^{7,42}.

- 3) other organ (systemic) involvement (e.g., myocarditis, encephalitis, involvement of the lung), sepsis, or dehydration and electrolyte imbalances from diarrhoea and vomiting)^{5,7–9,17,19,42}.

Management

Supportive care: WHO has issued guidance for supportive treatment of mpox, including on use of analgesia, methods of skin care, and ensuring adequate nutrition²⁹. High-quality care for critical illness from any cause is important, including detection and treatment of invasive infection, and the treatment of respiratory difficulties with oxygen and ventilation where necessary⁴³.

Therapeutics: Specific antiviral therapies are being evaluated for the treatment of mpox. Tecovirimat is undergoing evaluation in randomised controlled trials (Table 3). Based on safety and efficacy in a range of human and animal studies, respectively, tecovirimat has been licensed for use under exceptional circumstances by the European Medicines Agency, and the United States Food and Drug Administration allows access through an expanded access protocol. Safety is consistently reported in studies involving humans, and tecovirimat is typically well-tolerated⁴⁴. The US Centers for Disease Control and Prevention (CDC) suggest that tecovirimat should be used in those with severe disease³¹, along with other therapies when indicated.

WHO currently recommends the use of tecovirimat in trials, or as part of emergency access (MEURI) protocols⁴⁵. WHO is supporting such expanded access together with tools to collect data on patient characteristics and outcomes; donations of tecovirimat to countries who have expressed interest through this platform are expected to begin soon. WHO also has a limited supply of tecovirimat which can be made available for compassionate use upon request by national authorities.

Passive immunotherapy: Vaccinia immune globulin intravenous (VIGIV) has been considered on a case-by-case basis especially for eye infection (keratitis) based on the similarities with ocular smallpox; more human data are required to make recommendations³⁵.

Treatment of HIV coinfection: Immune reconstitution in patients with HIV is important to achieving optimal outcomes. It is currently unclear if patients who have mpox with advanced HIV who start antiretrovirals (ARVs), who then have persistent mpox lesions, are developing Immune Reconstitution Inflammatory Syndrome or if they are unable to clear the MPXV from their system. This is an area where more data need to be collected through randomized controlled trials and clinical research studies^{20,31}.

Table 3: Ongoing Randomized Controlled Trials of Tecovirimat

Name	Group	Protocol		Locations	Target enrollment	Dates	Status
ACTG-5418 / STOMP	NIH, SIGA	Safety and efficacy of tecovirimat for the treatment of mpox	RCT (2:1) Placebo Double-blind	80 sites Brazil, Mexico, South Africa, US and Puerto Rico	530	September 22-September 23	Open
PALM-007	NIH, INRB Kinshasa, République Démocratique du Congo	Safety and efficacy of tecovirimat for the treatment of adult and pediatric patients with mpox	RCT Placebo Double-blind	2 sites DRC	450	October 22-September 24	Open
NCT05534165/ PLATINUM+CAN	CIHR Canadian HIV Trials Network	Tecovirimat in non-hospitalized patients with mpox: Canadian Feasibility Study (PLATINUM-CAN)	RCT Placebo	Multiple sites in Canada	120	September 2022-2023	Open
NCT05597735/ UNITY	Oswaldo Cruz Foundation	Efficacy and safety of tecovirimat antiviral treatment for patients with mpox	RCT Placebo Double-blind	9 sites Brazil and Switzerland	1,152	December 2022 - January 2025	Open
PLATINUM	University of Oxford	Treatment with tecovirimat in non-hospitalised mpox patients	RCT Placebo	United Kingdom and selected European sites	500	August 2022-August 2023	Open

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Regional Update: Western Pacific Region

Mpox situation update: Western Pacific Region

As of 13 March 2023, a total of 260 confirmed cases of mpox have been reported from 12 countries and territories in the Western Pacific Region (WPR). There have been no deaths reported. The Region accounts for a small proportion (0.3%) of cumulative mpox cases reported globally and a small proportion (0.5%) of weekly new cases.

Of the cases in the Region, 55% (n=144) are from Australia, however, there have been no reported cases from that country since December 2022. Cases reported from the Region in the past three weeks (n=15), have been from Japan (n=11, 73%) and Taiwan, China (n=4, 27%). Up to 48% of 260 cases in the Region - with available information on the source of exposure - are locally transmitted cases. Locally acquired cases (i.e. not linked to international travel) have been reported in Australia, Japan, New Zealand, Singapore, and Taiwan, China.

The Region has received detailed case data for 56% (n=145) of the total reported cases from Member States. Of the 210 cases with data on gender, 97.6 % (n=206) were male; 85 cases had data on age, which ranged from 18 to 60 years old; 46% are between 30-39 years old (median 40 years). Of 33 cases with known data on sexual orientation, 30 (91%) identified as gay, bisexual or other men who have sex with men.

Where data are available (55/260; 21.5%), 54 cases have been hospitalized for treatment or isolation and there have been no reports of cases being admitted to intensive care units.

WHO response to mpox in the Western Pacific Region

- **Leadership and coordination:** The Incident Management Team (IMT) has been operational since May 2022 to provide overall technical guidance for preparedness and response in line with the WHO Strategic Preparedness and Response Plan and the temporary recommendations issued by WHO following successive meetings of the WHO IHR Emergency Committee for mpox.
- **Laboratory:** WHO has verified national laboratory capacity in the region for testing and referral of mpox samples, and where required procured commercial PCR kits laboratory equipment for Member States. The Western Pacific Regional Office has communicated with reference laboratories regarding sample referral and procurement of primers, probes and positive controls.
- **Surveillance:** Surveillance data continue to be collated daily from open sources and IHR notifications.
- **Vaccination:** In line with the WHO “Vaccines and immunization for monkeypox: Interim guidance” (updated 16 November 2022), In eight countries the Western Pacific Region have been using mpox vaccines (e.g. MVA-BN or LC16) for primary preventive (PPV) and/or post-exposure preventive (PEPV) vaccination.
- **Clinical management and infection prevention and control:** WHO has supported adaptation of clinical management and infection prevention and control guidance for the local context.
- **Risk communication:** WHO has developed and disseminated communication materials for public communication based on insights gained from social listening and is coordinating and disseminating messages that target at-risk groups through effective channels and trusted influencers.

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>
- WHO Emergency Appeal: Monkeypox - July 2022 – June 2023, 13 October 2022 <https://www.who.int/publications/m/item/who-emergency-appeal-monkeypox---july-2022---june-2023>
- Monkeypox Strategic Preparedness, Readiness, and Response Plan (SPRP)- 5 October 2022, [https://www.who.int/publications/m/item/monkeypox-strategic-preparedness--readiness--and-response-plan-\(sprp\)](https://www.who.int/publications/m/item/monkeypox-strategic-preparedness--readiness--and-response-plan-(sprp))

International Health Regulations Emergency committee and Temporary Recommendations of the Director-General

- WHO fourth meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of monkeypox, 15 February 2023. [https://www.who.int/news/item/15-02-2023-fourth-meeting-of-the-international-health-regulations-\(2005\)-\(ihr\)-emergency-committee-on-the-multi-country-outbreak-of-monkeypox-\(mpox\)](https://www.who.int/news/item/15-02-2023-fourth-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-on-the-multi-country-outbreak-of-monkeypox-(mpox))
- WHO Third meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of monkeypox, 1 November 2022. [https://www.who.int/news/item/01-11-2022-third-meeting-of-the-international-health-regulations-\(2005\)-\(ihr\)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox](https://www.who.int/news/item/01-11-2022-third-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox)
- WHO Second meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of monkeypox, 23 July 2022. [https://www.who.int/news/item/23-07-2022-second-meeting-of-the-international-health-regulations-\(2005\)-\(ihr\)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox](https://www.who.int/news/item/23-07-2022-second-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox)
- WHO Director-General's statement at the press conference following IHR Emergency Committee regarding the multi-country outbreak of monkeypox, 23 July 2022. <https://www.who.int/director-general/speeches/detail/who-director-general-s-statement-on-the-press-conference-following-ihr-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox--23-july-2022>

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>
- WHO Vaccines and immunization for monkeypox: Interim guidance, 16 November 2022. <https://apps.who.int/iris/bitstream/handle/10665/364527/WHO-MPX-Immunization-2022.3-eng.pdf>
- WHO Surveillance, case investigation and contact tracing for Monkeypox: Interim guidance, 25 August 2022. <https://www.who.int/publications/i/item/WHO-MPX-Surveillance-2022.3>
- WHO Global clinical data platform for monkeypox case report form (CRF), 21 July 2022, https://www.who.int/publications/i/item/WHO-MPX-Clinical_CRF-2022.3
- Public health advice for gatherings during the current monkeypox outbreak, 28 June 2022: <https://www.who.int/publications/i/item/WHO-MPX-Gatherings-2022.1>
- 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>
- Emergency use of unproven clinical interventions outside clinical trials: ethical considerations: <https://www.who.int/publications-detail-redirect/9789240041745>
- WHO Technical brief (interim) and priority actions: enhancing readiness for monkeypox in WHO South-East Asia Region, 7 July 2022. <https://cdn.who.int/media/docs/default-source/searo/whe/monkeypox/searo-mpx-tbrief22.pdf>

Data management

- Monkeypox Case and contact investigation form (CIF) and minimum dataset Case reporting form (CRF). 19 August 2022. [https://www.who.int/publications/m/item/monkeypox-minimum-dataset-case-reporting-form-\(crf\)](https://www.who.int/publications/m/item/monkeypox-minimum-dataset-case-reporting-form-(crf))
- The WHO Global Clinical Platform for monkeypox, 14 June 2022. <https://www.who.int/tools/global-clinical-platform/monkeypox>
- WHO Go.Data: Managing complex data in outbreaks. <https://www.who.int/tools/godata>

Risk communication and community engagement

- Updated (V3) Public health advice for gay, bisexual and other men who have sex with men and mpox 9 March 2023: <https://www.who.int/publications/m/item/monkeypox-public-health-advice-for-men-who-have-sex-with-men>
- Public health advice on mpox and sex-on-premises venues and events 01 March 2023: [https://www.who.int/publications/m/item/public-health-advice-on-mpox-\(monkeypox\)-and-sex-on-premises-venues-and-events](https://www.who.int/publications/m/item/public-health-advice-on-mpox-(monkeypox)-and-sex-on-premises-venues-and-events)
- Infographic on getting tested for mpox 27 February: <https://www.who.int/multi-media/details/getting-tested-for-mpox--what-you-need-to-know>
- Mpox Q&A on mpox testing for health workers and individuals: <https://www.who.int/news-room/questions-and-answers/item/testing-for-mpox--health-workers> & <https://www.who.int/news-room/questions-and-answers/item/testing-for-mpox--individuals-and-communities>
- 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>

- Risk communication and community engagement public health advice on understanding, preventing and addressing stigma and discrimination related to monkeypox 1 September 2022. <https://www.who.int/publications/m/item/communications-and-community-engagement-interim-guidance-on-using-inclusive-language-in-understanding--preventing-and-addressing-stigma-and-discrimination-related-to-monkeypox>
- Monkeypox Q&A, 31 August 2022. <https://www.who.int/news-room/questions-and-answers/item/monkeypox>
- Monkeypox: public health advice for gay, bisexual and other men who have sex with men, 18 July 2022. <https://www.who.int/publications/m/item/monkeypox-public-health-advice-for-men-who-have-sex-with-men>
- Risk communication and community engagement (RCCE) for monkeypox outbreaks: Interim guidance, 24 June 2022. <https://www.who.int/publications/i/item/WHO-MPX-RCCE-2022.1>
- Interim advice for public health authorities on summer events during the monkeypox outbreak in Europe, 2022. 14 June 2022. <https://www.who.int/europe/publications/m/item/interim-advice-for-public-health-authorities--on-summer-events-during-the-monkeypox--outbreak-in-europe--2022>
- Interim advice on Risk Communication and Community Engagement during the monkeypox outbreak in Europe, 2022. Joint report by WHO Regional office for Europe/ECDC, 2 June 2022. https://www.euro.who.int/_data/assets/pdf_file/0009/539046/ECDC-WHO-interim-advice-RCCE-Monkeypox-2-06-2022-eng.pdf
- WHO Monkeypox outbreak: update and advice for health workers, 26 May 2022. https://www.who.int/docs/default-source/coronaviruse/risk-comms-updates/update_monkeypox-.pdf?sfvrsn=99baeb03_1
- Risk communication and community engagement. Public health advice on the recent outbreak of monkeypox in the WHO European Region, 24 May 2022. https://www.euro.who.int/_data/assets/pdf_file/0004/538537/public-health-advice-monkeypox-eng.pdf

EPI - WIN Webinars and Updates

- The recordings of the previous [EPI-WIN Webinars](#) related to current monkeypox outbreak:
- WHO EPI-WIN webinar: Changing perspectives of the mpox outbreak (22 February 2023)
- 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 Spillover 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 #17- 2 March 2023: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report---17--2-march-2023>
- Multi-country outbreak of mpox, External situation report #16- 16 February 2023: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report--16--16-february-2023>
- Multi-country outbreak of mpox, External situation report #15- 2 February 2023: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report-15--2-february-2023>
- 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>
- Multi-country outbreak of mpox, External situation report #13- 5 January 2023: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report--13--5-january-2023>
- Multi-country outbreak of mpox, External situation report #12- 14 December 2022: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report-12--14-december-2022>
- Multi-country outbreak of mpox, External situation report #11- 1 December 2022: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report--11--1-december-2022>
- 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>
- Multi-country outbreak of monkeypox, External situation report #5- 7 September 2022: <https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--5---7-september-2022>
- 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>
 - Français: <https://openwho.org/courses/variole-du-singe-introduction>
- 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 \(who.int\)](https://www.who.int/europe/publications/m/item/monkeypox-surveillance-bulletin)
- 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/>
- WHO. Monkeypox & mass gatherings. Recommendations for mass gatherings during a monkeypox outbreak. https://cdn.who.int/media/docs/default-source/epi-win/update78_monkeypox-mass-gatherings.pdf?sfvrsn=dfc9ee5a_1&download=true
- WHO European Region Interim advice for public health authorities on summer events during the monkeypox outbreak in Europe, 2022 <https://www.who.int/europe/publications/m/item/interim-advice-for-public-health-authorities-on-summer-events-during-the-monkeypox-outbreak-in-europe-2022>
- Weekly epidemiological record (WER) no.11, 16 March 2018, Emergence of monkeypox in West Africa and Central Africa 1970-2017. <http://apps.who.int/iris/bitstream/handle/10665/260497/WER9311.pdf;jsessionid=7AB72F28D04CFE6CE24996192FC478FF?sequence=1> Jezek Z., Fenner F.: Human Monkeypox. Monogr Virol. Basel, Karger, 1988, vol 17, pp 1-5. doi: 10.1159/isbn.978-3-318-04039-5
- 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>
- Monkeypox in the Region of the Americas - Risk assessment. <https://www.paho.org/en/documents/monkeypox-region-americas-risk-assessment>

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 March 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*	27	1
	Congo*	5	0
	Democratic Republic of the Congo*	419	0
	Ghana*	123	4
	Liberia*	7	0
	Mozambique*	1	1
	Nigeria	812	8
	South Africa*	5	0
Eastern Mediterranean Region	Bahrain*	1	0
	Egypt*	3	0
	Iran (Islamic Republic of) *	1	0
	Jordan*	1	0
	Lebanon	27	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	2
	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	87	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	1262	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	7543	3
	Sweden*	260	0
	Switzerland	552	0
	Türkiye *	12	0
	The United Kingdom	3738	0
	Ukraine*	5	0
Region of the Americas	Argentina	1112	2
	Aruba*	3	0
	Bahamas*	2	0
	Barbados*	1	0
	Bermuda*	1	0
	Bolivia (Plurinational State of)	265	0
	Brazil	10 878	15
	Canada*	1460	0
	Chile	1435	2
	Colombia	4085	0
	Costa Rica	206	1
	Cuba*	8	1
	Curaçao *	3	0
	Dominican Republic*	52	0
	Ecuador	516	3
	El Salvador	98	0

	Guadeloupe*	1	0
	Guatemala	393	0
	Guyana*	2	0
	Honduras	26	0
	Jamaica*	18	0
	Martinique*	7	0
	Mexico	3928	4
	Panama	177	0
	Paraguay	110	0
	Peru	3774	20
	Puerto Rico	211	0
	Saint Martin*	1	0
	United States of America	30 039	38
	Uruguay*	19	0
	Venezuela (Bolivarian Republic of) *	12	0
South-East Asia Region	India*	22	1
	Indonesia*	1	0
	Sri Lanka*	2	0
	Thailand	16	0
Western Pacific Region	Australia*	144	0
	China	11	0
	Guam*	1	0
	Japan	31	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	86 496	111

#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.