Multi-country outbreak of mpox

External Situation Report 21, published 27 April 2023
Data as received by WHO national authorities by 17:00 CEST, 24 April 2023

Risk assessment	Laboratory confirmed cases	Deaths	Countries/areas/territories
Global risk – Moderate	87 113	130	111

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 13 April 2023, 183 new mpox cases (0.2% increase in total cases) and 14 new related deaths have been reported to WHO.
- Globally, the number of mpox cases reported weekly continues to decline; however, the Western Pacific Region reported an increase in cases (n = 62) in the last three weeks compared to the three weeks prior (n = 46), driven by an outbreak of mpox affecting mainly men in Japan, the Republic of Korea and China, with sustained local transmission.
- The report also highlights the mpox situation in the Eastern Mediterranean region.
- Recent studies have estimated the incubation period for mpox during the current multi-country outbreak to be six to nine days. This situation report provides detailed information on the topic.
- WHO continues to work with Member States to control and interrupt sustained person-to-person transmission of mpox, through risk communication and community engagement activities including on social media. This report highlights social media products developed and disseminated by WHO through various channels since the beginning of the outbreak.

Epidemiological Update

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

From 1 January 2022 through 24 April 2023, a cumulative total of 87 113 laboratory-confirmed cases of mpox, including 130 deaths, have been reported to WHO from 111 countries/territories/areas (hereafter 'countries') in all six WHO Regions (Table 1). Since the last situation report published on 13 April 2023, there has been one newly affected country, 183 new cases (0.2% increase in total cases) and 14 new deaths reported.

The number of weekly new cases reported globally has declined by 41% in week 16 (17 April through 23 April 2023) (n = 61 cases) compared to week 15 (10 April through 16 April 2023) (n = 103 cases). The Western Pacific Region reported an increase in cases (n = 62) in the last three weeks compared to the three weeks prior (n = 46), driven by outbreaks of mpox affecting mainly men in Japan, the Republic of Korea and China, with sustained local transmission. The other regions have reported a decline, or no cases, in the last week (Table 1).

Fifteen countries have reported an increase in cases when comparing the last three weeks (3 April through 23 April 2023) to the three weeks prior (13 March through 2 April 2023), with the highest relative increase reported in the Republic of Korea (n = 25 vs n = 1). As of 24 April 2023, 28 of the 111 affected countries reported new cases within the last 21 days, the maximum disease incubation period. Fourteen of them are in the Americas, seven in Europe, four in the Western Pacific Region, two in the Eastern Mediterranean Region and one in the South-East Asia Region. The African Region has not reported any new cases in the last 21 days; however, this is due to disruptions to reporting and should be interpreted accordingly. Pakistan reported its first mpox case in the past week, in a person travelling from Saudi Arabia.

From 11 April through 24 April 2023, 16 new deaths were reported, all of which were from the Region of the Americas. Nine new deaths were reported from Mexico, five from the United States of America, and one each from Brazil and Panama. Two deaths were retracted following a review of the cases: one from Costa Rica and one from Honduras. This brings the total number of deaths to 130. The nine additional deaths reported from Mexico have been reported after a batch review of cases and did not all occur in the last week.

As of 24 April 2023, the ten countries which reported the highest cumulative number of cases globally continue to be the United States of America (n = 30 152), Brazil (n = 10 904), Spain (n = 7549), France (n = 4144), Colombia (n = 4090), Mexico (n = 3965), Peru (n = 3800), the United Kingdom (n = 3741), Germany (n = 3692), and Canada (n = 1480). Together, these countries account for 84.4% 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 24 April 2023 17:00 CEST

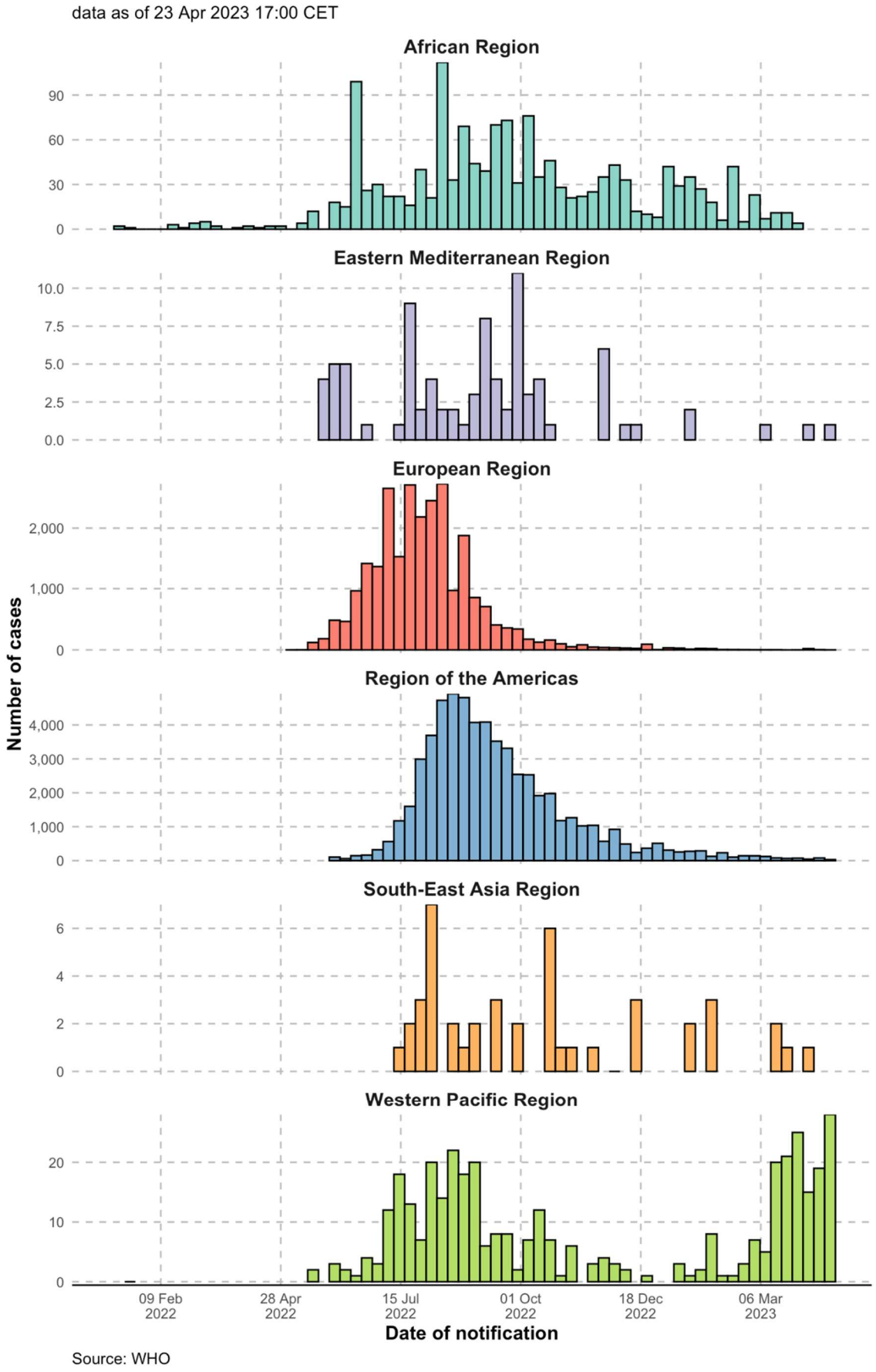
WHO Region	Total Confirmed Cases	Total Deaths	Cases in last 3 weeks[i]	3-week change in cases (%)
Region of the Americas	59 220	104	155	-43%
European Region	25 881	6	27	350%
African Region	1477	18	0[ii]	–[iii]
Western Pacific Region	406	0	62	35%
Eastern Mediterranean Region	85	1	2	100%
South-East Asia Region	44	1	1	-67%
Total	87 113	130	247	-30%

[i] *Using the three most recently completed international standard weeks (Monday - Sunday)*

[ii] *The African Region has not reported any new cases in the last 21 days; however, this is due to disruptions to reporting and should be interpreted accordingly.*

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

Figure 1. Epidemiological curves of weekly aggregated confirmed cases of mpox by WHO Region, from 1 January 2022 to 23 April 2023, 17:00 CEST*



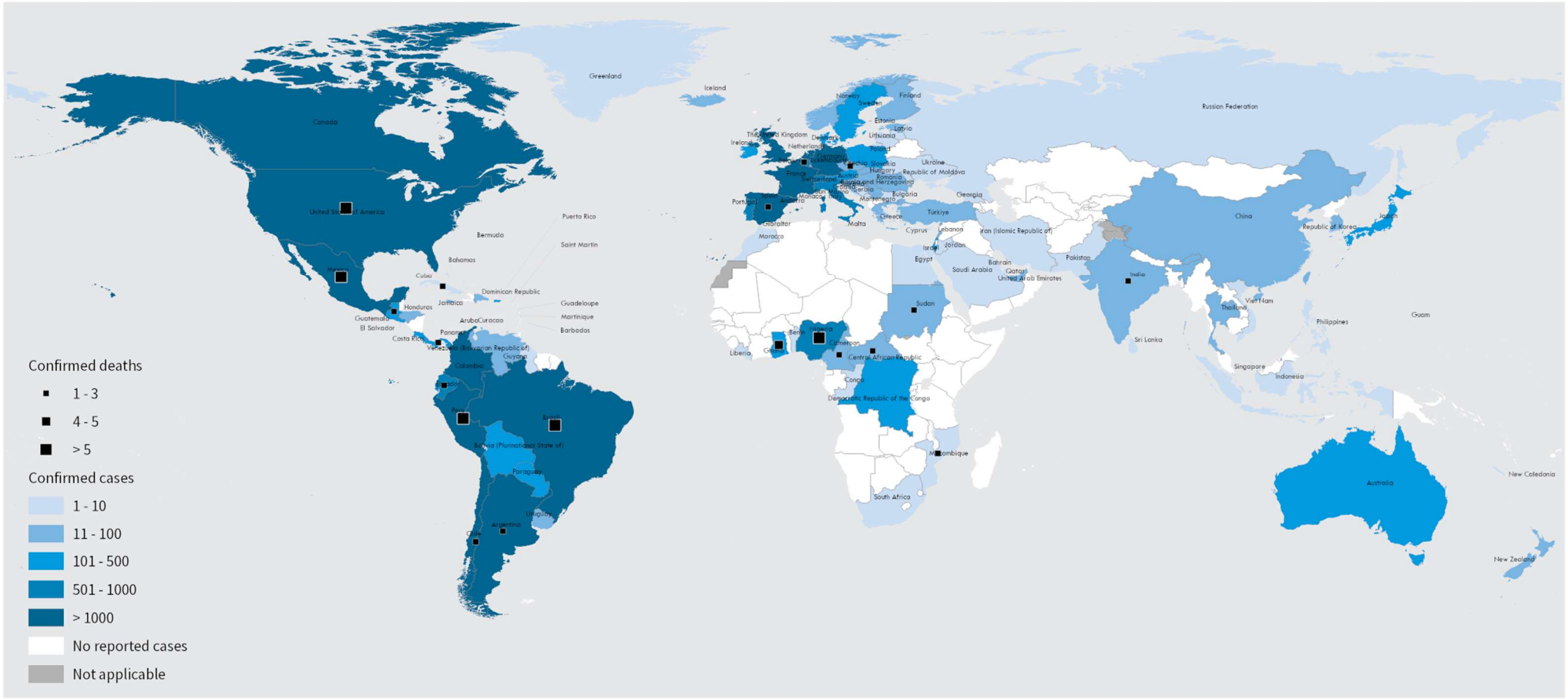
**This figure shows aggregated weekly data, for completed epidemiological weeks ending on Sundays. Data on the current week will be presented in the next situation report.*

The epidemic curves shown in Figure 1 suggest that the outbreak continues to wane in the European and the Americas Regions but has been rising in the Western Pacific Region. Most of the new cases in the latter region are reported by Japan (n = 28), the Republic of Korea (n = 17) and China (n = 16). The lack of cases from the African Region in the last weeks is due to a disruption in reporting. The remaining two regions, South-East Asia and the Eastern Mediterranean, have reported sporadic cases, including Pakistan which reported its first case on 21 April 2023.

Other key epidemiological findings:

- As of 24 April 2023, 96.2% (77 610 / 80 643) of cases with available data are men, with a median age of 34 years (interquartile range: 29-41 years). The age and sex distribution of cases has remained stable over time.
- Of cases with age data available, 1.3% (1107 / 83 259) are children aged 0-17 years, including 324 (0.4%) aged 0-4 years. The majority of paediatric cases have been reported from the Region of the Americas (680 / 1107; 61.4%). The overall proportion of paediatric cases in the Americas is 1.2% (680 / 56 575), similar to the proportion observed globally.
- Among cases with information available, 84.1% (25 718 / 30 593) 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. When information about sexual orientation of cases is lacking, a high prevalence of male cases might also be indicative of transmission among men who have sex with men.
- Of all reported modes of transmission, skin and mucosal contact during sex was the most reported, in 15 578 of 18 969 (82.1%) of all reported transmission events, followed by person-to-person non-sexual contact. The same pattern has been observed over the last 12 weeks.
- Where information is available, the most reported exposure setting is a party setting with sexual contact, comprising 3864 of 5685 (68.0%) reported exposure settings. In the last three months, the main reported transmission setting is party with no sexual contact, followed by other, and then party with sexual contact. Infection in household settings constitutes 14% of transmission over the last 12 weeks.
- Among the cases who reported at least one symptom (n = 34 045), the most common symptom is any rash, reported in 80.8% of cases, followed by fever (59.2%), and generalized or genital rash (47.5% and 44.1% respectively). The symptomatology of cases has been very consistent over time in the countries newly affected 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.
- The new cases reported by Japan are among men, the majority between 20 and 60 years of age, and their clinical presentation is similar to cases from other countries. No information is available about their sexual orientation, HIV status or comorbidities. Currently all active cases are reported to be clinically stable as per information shared by the Ministry of Health and Family Welfare.

Figure 2. Geographic distribution of confirmed cases of mpox reported to or identified by WHO from official public sources from 1 January 2022 to 24 April 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: 25 April 2023

World Health Organization

Special focus – incubation period of mpox

Before the 2022-2023 outbreak, epidemiological investigation of mpox cases, especially in the Democratic Republic of the Congo, had reported that the incubation period for mpox ranged from 4 to 21 days.[1–3] Observations in the USA in 2006 suggested that the incubation period was shorter (nine days) for complex exposures, which included bites or scratches from an infected prairie dog, compared to noninvasive exposures (13 days), such as touching and cleaning an infected prairie dog[4].

During the current outbreak, exposures to mpox have varied from physical or sexual contact with a case to inoculation from a contaminated object. Many studies have estimated the incubation period among several populations. Starting from the living systematic literature review conducted by the Public Health Agency of Canada, WHO has been monitoring the reported incubation period and summarized the results of studies with more than five cases in the 2022-23 Mpox (Monkeypox) Outbreak: Global Trends. Table 2 shows the latest update of these results, as of 20 April 2023.

Overall, the mean incubation period of mpox has been estimated at 6.0-9.1 days [95% CrI 4.3-10.9] using data with log-normal, Gamma, and Weibull distribution with study populations (*n*) ranging from 18 to 209 mpox cases. The median incubation period was estimated at 6-13 days [IQR 1-16] with *n* ranging from 14 to 527 cases. Thus, slightly shorter incubation periods have been observed in the current global outbreak compared to previous estimates, including incubation periods as short as one day. Conversely, rarely, long incubation periods of up to 40 days have been observed. The reasons for these wide variations are not fully explained.

Sexual transmission is the most commonly reported route of exposure in the current global mpox outbreak. Sexual intercourse often includes breach of the skin barrier, and this could in part explain the shorter incubation periods observed in the current global outbreak. Although direct evidence on the route of infection and incubation period is currently lacking, the size of the inoculum of the virus might also play a role in the incubation period of mpox in different persons. Currently, the infectious dose of monkeypox virus for humans is not known.

Recent studies around the incubation period of mpox have used different measures of central tendency, i.e., mean and median, as well as data with different distribution parameters. This limits the ability to summarize information on the incubation period under the same indicators. WHO encourages collaboration among researchers working on the characterization of mpox to put together information on the incubation period of mpox and try to estimate the differences which might be present based on the different routes of transmission.

References:

1. Extended Human-to-Human Transmission during a Monkeypox Outbreak in the Democratic Republic of the Congo - PMC. Accessed April 25, 2023. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4880088/

2. Petersen E, Kantele A, Koopmans M, et al. Human Monkeypox: Epidemiologic and Clinical Characteristics, Diagnosis, and Prevention. *Infect Dis Clin North Am*. 2019;33(4):1027-1043. doi:10.1016/j.idc.2019.03.001

3. Hutin YJ, Williams RJ, Malfait P, et al. Outbreak of human monkeypox, Democratic Republic of Congo, 1996 to 1997. *Emerg Infect Dis*. 2001;7(3):434-438. Accessed April 25, 2023. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2631782/

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Table 2: Summary of included studies reporting the incubation period of mpox in the current 2022-2023 outbreak.

Reference	n[1]	Mean[1]	95% CrI lower (mean)[1]	95% CrI upper (mean)[1]	95% CrI lower (mean)[1]	95% CrI upper (mean)[1]	SD[1]	Median[1]	95% CrI lower (median[1]	95% CrI upper (median)[1]	IQR lower[1]	IQR upper[1]	Range min[1]	Range max[1]
Miura et al. [1]	18	8.5			6.6	10.9								
Charniga et al. [2]	40	7.6			6.2	9.7	1.8	6.4	5.1	7.9				
Rodríguez et al. [3]	45													
Thornhill et al. [4]	23							7					3	20
Català et al. [5]	77							6					4	9
Tarín-Vicente et al. [6]	144							7			5	10	1	19
Guzzetta et al. [7]	30	9.1	6.5	10.9										
Mailhe et al. [8]	112							6			3	8		
Moschese et al. [9]	16							11			11	16		
Gomez-Garberi et al. [10]	14							13					3	30
O'Laughlin et al. [11]	527	7									4	9		
Angelo et al. [12]	78							8			5	11	2	40
Madewell et al. [13]	35	5.6			4.3	7.8								
Ward et al. [14]	54	7.8			6.6	9.2								
Besombes et al. [15]	29							7			1	13	0	17
Kröger et al. [16]	209	8.2					4.7							
Prasad et al. [17]								7			7	10		

[1]Units are in days

n = size of study population; 95%CrI= 95% Credible Interval; SD=Standard Deviation; IQR = Interquartile Range

References:

1. Miura, F., et al., The incubation period for monkeypox cases confirmed in the Netherlands, May 2022. medRxiv, 2022: p. 2022.06. 09.22276068.
2. Charniga, K., et al., Estimating the incubation period of monkeypox virus during the 2022 multi-national outbreak. MedRxiv, 2022: p. 2022.06. 22.22276713.
3. Suárez Rodríguez, B., et al., Epidemiologic features and control measures during monkeypox outbreak, Spain, June 2022. Emerging Infectious Diseases, 2022. 28(9): p. 1847-1851.
4. Thornhill, J.P., et al., Monkeypox virus infection in humans across 16 countries—April–June 2022. New England Journal of Medicine, 2022. 387(8): p. 679-691.
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6. Tarín-Vicente, E.J., et al., Clinical presentation and virological assessment of confirmed human monkeypox virus cases in Spain: a prospective observational cohort study. The Lancet, 2022. 400(10353): p. 661-669.
7. Guzzetta, G., et al., Early estimates on monkeypox incubation period, generation time and reproduction number in Italy, May-June 2022. arXiv preprint arXiv:2207.13483, 2022.
8. Mailhe, M., et al., Clinical characteristics of ambulatory and hospitalized patients with monkeypox virus infection: an observational cohort study. Clinical Microbiology and Infection, 2023. 29(2): p. 233-239.
9. Moschese, D., et al., Natural history of human Monkeypox in individuals attending a sexual health clinic in Milan, Italy. Journal of Infection, 2023. 86(1): p. e18-e20.
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11. O'Laughlin, K., et al., Clinical use of tecovirimat (Tpoxx) for treatment of monkeypox under an investigational new drug protocol—United States, May–August 2022. 2022.
12. Angelo, K.M., et al., Epidemiological and clinical characteristics of patients with monkeypox in the GeoSentinel Network: a cross-sectional study. The Lancet Infectious Diseases, 2023. 23(2): p. 196-206.
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14. Ward, T., et al., Transmission dynamics of monkeypox in the United Kingdom: contact tracing study. bmj, 2022. 379.
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17. Prasad, S., et al., A dermatologic assessment of 101 mpox (monkeypox) cases from 13 countries during the 2022 outbreak: Skin lesion morphology, clinical course, and scarring. Journal of the American Academy of Dermatology, 2023.

Special Focus: Social media campaign to inform people about mpox and prevent or reduce stigma

Social media campaign to inform people about mpox and prevent or reduce stigma.

The current mpox outbreak was declared a Public Health Emergency of International Concern (PHEIC) on 23 July 2022. In any emergency, time is of the essence. Accurate and timely information, therefore, becomes essential in controlling an outbreak. WHO has been conducting risk communication and community engagement activities on mpox since the beginning of the outbreak, prioritizing the most affected populations. WHO materials have been regularly updated with a focus on sharing the most recent information on symptoms, recovering from monkeypox at home, and the risk of transmission through skin and mucosal contact during sexual activities.

WHO has conducted a social media campaign to address stigma and discrimination related to mpox so that the health, human rights and dignity of the affected communities are protected. A key mission of the campaign has also been to mitigate all forms of stigma, discrimination and misinformation on mpox so that the affected communities can access the prevention, testing, care, and treatment they need, feel supported and be able to report their symptoms.

Since the outbreak has been primarily due to close skin-to-skin contact – including sexual contact – the tone and messaging of the campaign has had a rights-based approach. The campaign has aimed to inform the critically-affected population – men who have sex with men – and support them to engage and inform each other, so that they can take steps to better protect themselves and their communities.

The campaign was curated by listening to affected communities so that information would be timely, transparent, clear, community- and country-specific, coherent, and authentic. Roundtables were organized in Montenegro, Armenia, Kazakhstan, Kyrgyzstan, and the Czech Republic.

WHO has developed a series of multimedia products that can be used for concerted outreach and amplification, including addressing any form of misinformation. Some of the key products are:

- Engaging social assets that the public can understand.
- Social media live events such as this and this.
- TikToks with WHO experts.
- WHO Expert videos that work as explainers.
- Succinct and memorable animations for event screens that would not put off partygoers.
- Video testimonies from patients speaking about ways to protect themselves.
- Testimonials about misinformation and warning against any form of discrimination.
- Visual examples of the monkeypox "rash" would allow people to identify the symptoms.
- Viral facts – a short-form video series – from WHO Regional Office for Africa, to combat misinformation around mpox.
- Video demonstrating how different healthcare workers are responding to the outbreak, some developed in collaboration with community leaders and influencers.
- “Science in 5” series episode 73, episode 76, and episode 96 on to educate communities about the symptoms of the disease, at risk populations, and various protective measures.

WHO’s mpox social campaign has been on all WHO channels across regions and country offices. The material has also been used by partners, stakeholders, event organizers, public health agencies, ministries of health, local clinics, LGBTQI+ advocacy groups, and others. The campaign has succeeded in raising awareness about the mpox outbreak especially among the highest-risk population, i.e., men who have sex with men.

The campaign reached[iv] 63 million users in 2022 – (of which organic reach was 23 million users) – across Facebook and Instagram. On Twitter over 271 000 impressions were collected. The engagement[v] across Facebook, Instagram, Twitter, and TikTok was close to 535 000. The videos produced for this campaign have garnered above 5.6 million views across all platforms.

The WHO content was cited across public health channels and in the media. Also, event organizers embedded the messages on their respective platforms. Events in Lithuania, the Netherlands, the United Kingdom, and Malta added information on mpox to their channels.

The mpox campaign was led by WHO comprising of social media products from various WHO regions. WHO teamed up with partners, event organizers, community health journalists and internationally recognized health reporters, civil society organizations working with LGBTQI+ communities and health care workers.

[iv] *Reach is defined as the number of unique users who have seen the post in their social media feeds. Organic reach means the number of people who have seen the content without any ad prompts. Sponsored contents (with ads) tend to boost this reach as the post appears more in the feeds of users and is therefore seen.*

[v] *Engagement on social media platforms means the number of likes, comments, shares – any form of activity or interaction – the user does with a post.*

Regional update: Eastern Mediterranean region

Mpox situation update: Eastern Mediterranean region

Since the beginning of the outbreak and as of 23 April 2023, a total of 86 confirmed cases including one death have been reported in the Eastern Mediterranean Region. The cases have been reported from 11 countries, including 27 cases from Lebanon, 19 from Sudan, 16 from United Arab Emirates, eight from Saudi Arabia, five from Qatar, three from Morocco, two from Bahrain, and one each from Egypt, Iran, Jordan and Pakistan. The one death was reported from Sudan in an infant.

Of the 57 cases with information available on age distribution, 89% (n = 51) of cases were reported among 18-44 years, and 5% (n = 3) among 0-17 years. Sudan and Lebanon reported confirmed cases among children below the age of 14 years. Of the 58 cases with information available on sex distribution, 91% (n = 53) were males, and 9% (n = 5) 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) self-reported as gay, bisexual and other men who have sex with men.

While the global outbreak of clade II monkeypox virus has reached many countries in the region, Sudan is the only country in the region reporting clade I monkeypox virus. Additionally, 35% of the suspected cases (133 / 378) and 58% of the confirmed cases (11 / 19) in the country have been under five years of age. As of 23 April 2023, Sudan has reported 19 confirmed cases, with the latest case notified in March 2023. The cases have been reported from six states, including three cases from refugee camps in Gedaref state. The other confirmed cases were reported from West Darfur (n = 9), North Darfur (n = 3), Khartoum (n = 2), Central Darfur (n = 1), and Kassala (n = 1). The death was reported from West Darfur State.

WHO response to mpox in the 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. In addition to activities previously reported, the following support has been provided

Leadership and coordination:

- The Eastern Mediterranean Regional Office (EMRO) Multi-Disease Outbreak Incident Management Support Team (MDO IMST) has continued to coordinate preparedness and response efforts to non-COVID-19 emergencies throughout the Eastern Mediterranean Region. As part of this MDO-IMST, the regional technical working group (TWG) for mpox established from experts representing the different technical units has continued to closely monitor the situation, coordinate the overall regional support, and provide any country-specific assistance including response planning and capacity building activities.
- On 21 April 2023, a high-level meeting took place in Pakistan to discuss the mpox situation in the country and prioritize public health actions for response.
- In Pakistan a total of 20 samples from suspected cases were referred from different parts of the country and tested at National Institute of Health (NIH) since May 2022 for Monkeypox virus. Only one case has been confirmed recently (21 April 2023).
- A high-level meeting was convened under the chairmanship of Special Secretary Health and attended by DG (Health) and representatives of NIH and Pakistan Institute of Medical Sciences (PIMS) on 21 April 2023 to discuss the event and prioritize public health actions for response.

  Public health response actions planned in Pakistan:

  1. Capacity building of staff of on mpox case detection at all points of entries.

2. Refresher training courses for hospital staff on IPC and cases management in tertiary care hospitals will be conducted.
3. NIH will issue an mpox advisory to the health authorities based on the recent case detection.
4. Ensuring timely contact tracing, and sample collection from any close contacts of the case developing signs and symptoms of mpox
5. Capacity building of provincial staff on contact tracing by NIH.
6. NIH will provide technical support to provincial public health labs to enable PCR-based testing of monkeypox virus at the provincial level.

Mpox Surveillance and laboratory support:

- To enhance early detection and diagnosis of mpox cases, WHO shared mpox surveillance guidance with all Member States immediately after the declaration of the outbreak. Moreover, different Member States were provided with the needed laboratory supplies such as testing kits and reagents: EMRO delivered monkeypox diagnostic kits to 20 countries in 11 days. Sudan was among the countries that received the diagnostic kits and other laboratory supplies.
- 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.
- Besides the previously described provision of laboratory support, the following activities have also been conducted in Sudan:
    - Enhancement of surveillance at the points of entry: 21 suspected cases have been identified through points of entry (POE): 17 from Saudi Arabia (Khartoum airport), two from Chad (ground crossing) and two from Yemen (ground crossing).
    - A One Health platform was established in Sept 2022.

In Bahrain, besides the active case search and contact tracing, vaccination is also provided to the high-risk contacts.

Technical guidance and other resources

Strategic Planning and Global Support

- WHO factsheet on monkeypox, 18 April 2022. https://www.who.int/news-room/fact-sheets/detail/monkeypox
- 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)
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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))
- 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
- 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
- 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 technical guidance

- 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
- 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

Surveillance

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Data management

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- 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 and Public Health Advice

- 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
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- Infographic on getting tested for mpox 27 February: https://www.who.int/multi-media/details/getting-tested-for-mpox--what-you-need-to-know
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- 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

EPI - WIN Webinars and Updates

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- 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
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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 #20- 13 April 2023: https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report--20--13-april-2023
- Multi-country outbreak of mpox, External situation report #19- 30 March 2023: https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report--19---30-march-2023
- Multi-country outbreak of mpox, External situation report #18- 16 March 2023: https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report--18---16-march-2023
- 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
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- 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
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- 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
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- 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
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Training and Education

- WHO monkeypox outbreak toolbox, June 2022. https://www.who.int/docs/default-source/documents/emergencies/outbreak-toolkit/monkeypox-toolbox-20112019.pdf
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- Open WHO. Online training module. Monkeypox: Introduction. 2020
    - English: https://openwho.org/courses/monkeypox-introduction
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    - 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
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- Joint WHO Regional Office for Europe - European Centre for Disease Prevention and Control, Monkeypox surveillance bulletin Situation reports (who.int)
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- Monkeypox in the Region of the Americas - Risk assessment. https://www.paho.org/en/documents/monkeypox-region-americas-risk-assessment
- Atlas of mpox lesions: a tool for clinical researchers. https://apps.who.int/iris/bitstream/handle/10665/366569/WHO-MPX-Clinical-Lesions-2023.1-eng.pdf

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 24 April 2023, 17:00 CEST.

***Countries with no reported cases for more than 21 days**

WHO Region	Country	Total Confirmed Cases	Total Deaths[#]
African Region[vi]	Benin*	3	0
	Cameroon*	18	3
	Central African Republic	28	1
	Congo*	5	0
	Democratic Republic of the Congo*	450	0
	Ghana*	124	4
	Liberia*	10	0
	Mozambique*	1	1
	Nigeria*	833	9
	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
	Pakistan	1	0
	Qatar*	5	0
	Saudi Arabia*	8	0
	Sudan	19	1
	United Arab Emirates*	16	0
European Region	Andorra*	4	0
	Austria	328	0
	Belgium*	793	2
	Bosnia and Herzegovina*	9	0
	Bulgaria*	6	0

[vi] *The African Region has not reported any new cases in the last 21 days; however, this is due to disruptions to reporting* and not necessarily an interruption of transmission.

	Croatia*	33	0
	Cyprus*	5	0
	Czechia*	71	1
	Denmark*	196	0
	Estonia*	11	0
	Finland*	42	0
	France	4144	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*	34	0
	Monaco*	3	0
	Montenegro*	2	0
	Netherlands	1263	0
	Norway*	95	0
	Poland	217	0
	Portugal	953	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	7549	3
	Sweden*	260	0
	Switzerland*	552	0
	The United Kingdom	3741	0
	Türkiye*	12	0
	Ukraine*	5	0
Region of the Americas	Argentina	1128	2
	Aruba*	3	0
	Bahamas*	2	0
	Barbados*	1	0
	Bermuda*	1	0
	Bolivia (Plurinational State of)*	265	0
	Brazil	10 904	16
	Canada	1480	0
	Chile	1440	2
	Colombia	4090	0
	Costa Rica	221	0

	Cuba*	8	1
	Curaçao *	3	0
	Dominican Republic*	52	0
	Ecuador	533	3
	El Salvador	104	0
	Guadeloupe*	1	0
	Guatemala*	404	1
	Guyana*	2	0
	Honduras	42	0
	Jamaica*	21	0
	Martinique*	7	0
	Mexico	3965	14
	Panama	223	1
	Paraguay	125	0
	Peru	3800	20
	Puerto Rico*	211	0
	Saint Martin*	1	0
	United States of America	30 152	44
	Uruguay*	19	0
	Venezuela (Bolivarian Republic of) *	12	0
South-East Asia Region	India*	22	1
	Indonesia*	1	0
	Sri Lanka*	2	0
	Thailand	19	0
Western Pacific Region	Australia*	144	0
	China	40	0
	Guam*	1	0
	Japan	120	0
	New Caledonia*	1	0
	New Zealand*	41	0
	Philippines*	4	0
	Republic of Korea	30	0
	Singapore	23	0
	Viet Nam*	2	0
Cumulative	**111 Countries/territories/areas**	**87 113**	**130**

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