

Multi-country outbreak of mpox

External Situation Report 32, published 30 April 2024

Data as received by WHO from national authorities as of 30 March 2024

Mpox long-term risk assessment (as of December 2023) ¹	Laboratory-confirmed cases	Deaths	Countries/areas/territories
<ul style="list-style-type: none">For the general population in countries with historical mpox transmission and their neighbours: MODERATE.For gay men, bisexual men, other men who have sex with men, trans and gender diverse people, and sex workers: MODERATE.For the general population in countries not affected prior to the current outbreak: LOW.For the general population in the Democratic Republic of the Congo: HIGH.	95 226	185	117

Report highlights

- A total of 466 new laboratory-confirmed cases of mpox and three deaths from 22 countries were reported globally to WHO in March 2024, illustrating that low-level transmission continues across the world. The most affected regions, ordered by number of laboratory-confirmed cases, were the WHO African Region, the European Region, the Region of the Americas, the Western Pacific Region, and the South-East Asia Region.
- As surveillance reporting to WHO has been declining over time, the current global reported data most likely underestimate the number of mpox cases occurring.
- In the African Region, the Democratic Republic of the Congo reports the highest number of confirmed mpox cases, which represent just over a tenth of the suspected (clinically compatible) cases and deaths reported.
- This issue also features:
 - 1) updates to the WHO SAGE recommendations on use of mpox vaccines in outbreak settings;
 - 2) the upcoming update to interim guidance on *Diagnostic testing for the monkeypox virus (MPXV)*;
 - 3) highlights from the High-level inter-ministerial emergency meeting on mpox in the African region attended by twelve countries and hosted by the in the Democratic Republic of the Congo;
 - 4) Update on mpox outbreak response in the Democratic Republic of the Congo.

¹ These risks represent population average risk; individual risk varies with behaviour, geographic location, immune status, and other factors.

Epidemiological Update

Data source: [2022-24 Mpox \(Monkeypox\) Outbreak: Global Trends](#)

From 1 January 2022 through 31 March 2024, a cumulative total of 95 226 laboratory-confirmed cases of mpox, including 185 deaths, were reported to WHO from 117 countries/territories/areas (hereafter 'countries') in all six WHO Regions (Table 1). A total of 466 new cases were reported in March, which represents a 37% decline over the number of new cases reported during the previous month. Most cases in March 2024 were reported from the African Region (39%), the European Region (26%) and the Region of the Americas (25%).

In March, 22 countries reported cases, with 10 reporting an increase compared to February. Among laboratory-confirmed cases, the Republic of Congo (n = 15 vs nine) reported the highest increase in the African region, the United Kingdom (n = 16 vs 10) the highest increase in the European Region, Puerto Rico (n = 10 vs 0) the highest increase in the Region of the Americas, and Viet Nam (n = 22 vs five) the highest increase in the Western Pacific Region. All regions reported a reduction in case counts in March 2024 compared to the previous month except the Western Pacific Region (n = 32 vs 25). This apparent decrease occurred in the context of declining reporting and should, therefore, be interpreted with caution.

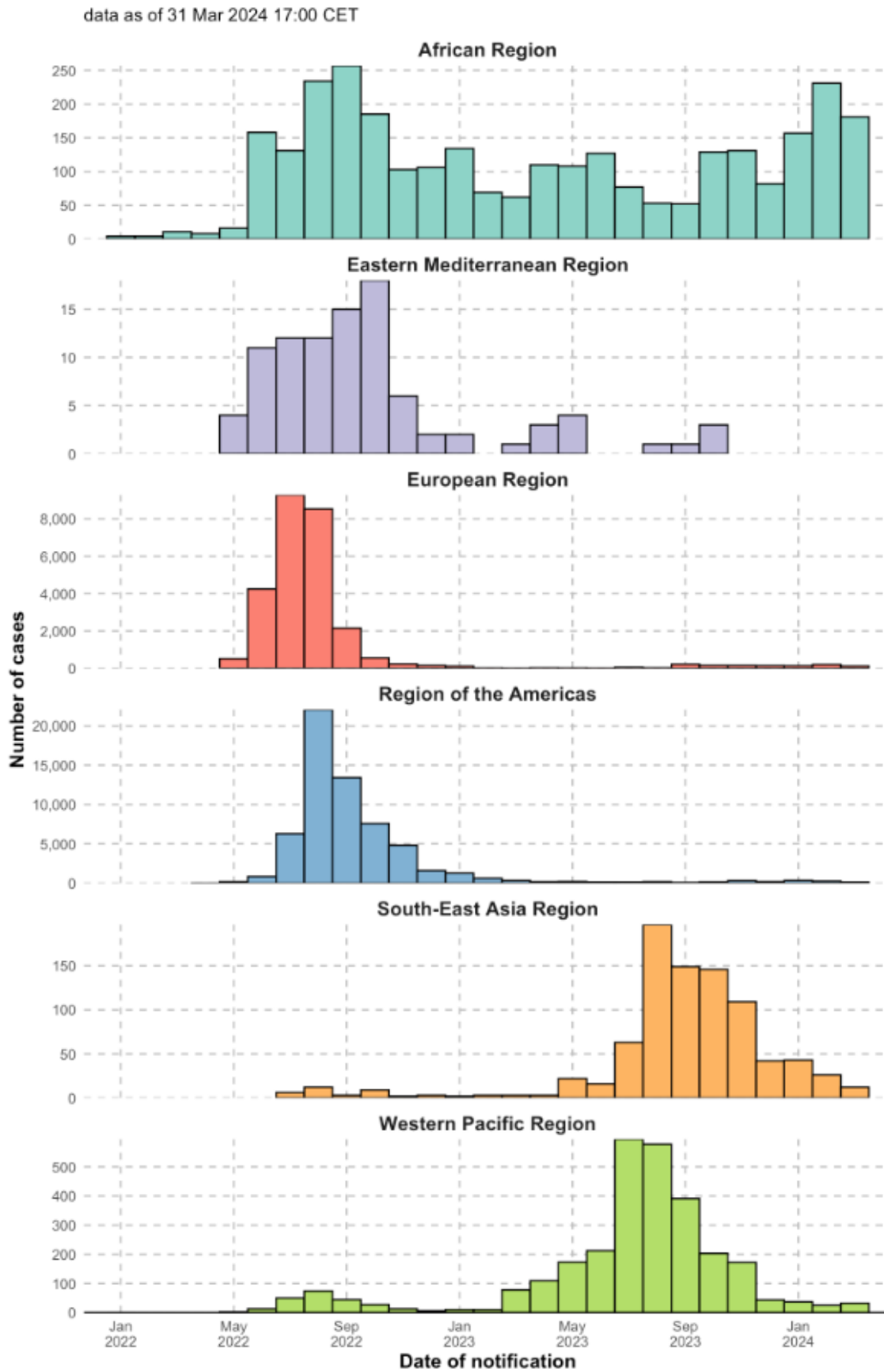
As of 31 March 2024, the ten countries that have reported the highest cumulative number of cases globally are the United States of America (n = 31 904), Brazil (n = 10 967), Spain (n = 7 960), France (n = 4 206), Colombia (n = 4 090), Mexico (n = 4 084), the United Kingdom (n = 3 908), Germany (n = 3 830), Peru (n = 3 812), and China (n = 2 034). Together, these countries account for 81% 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 through 31 March 2024

WHO Region	Total confirmed cases	Total confirmed deaths	Cases in last month	Monthly change in cases (%)
Region of the Americas	61 264	139	118	-53
European Region	27 179	10	123	-42
African Region	2 920	23	181	-22
Western Pacific Region	2 897	10	32	28
South-East Asia Region	871	2	12	-54
Eastern Mediterranean Region	95	1	0	-
Total	95 226	185	466	-37

The epidemic curves shown in Figure 1 suggest that the outbreak continues at a low level of transmission in the European Region, the Region of the Americas, the South-East Asian Region, and the Western Pacific. The African region shows fluctuating levels of case reporting, with a rising trend in the most recent months. Although the Eastern Mediterranean Region had previously reported sporadic cases, no new cases of mpox have been reported by countries in the region since October 2023.

Figure 1. Epidemic curves of monthly aggregated confirmed cases of mpox by WHO Region, from 1 January 2022 to 31 March 2024

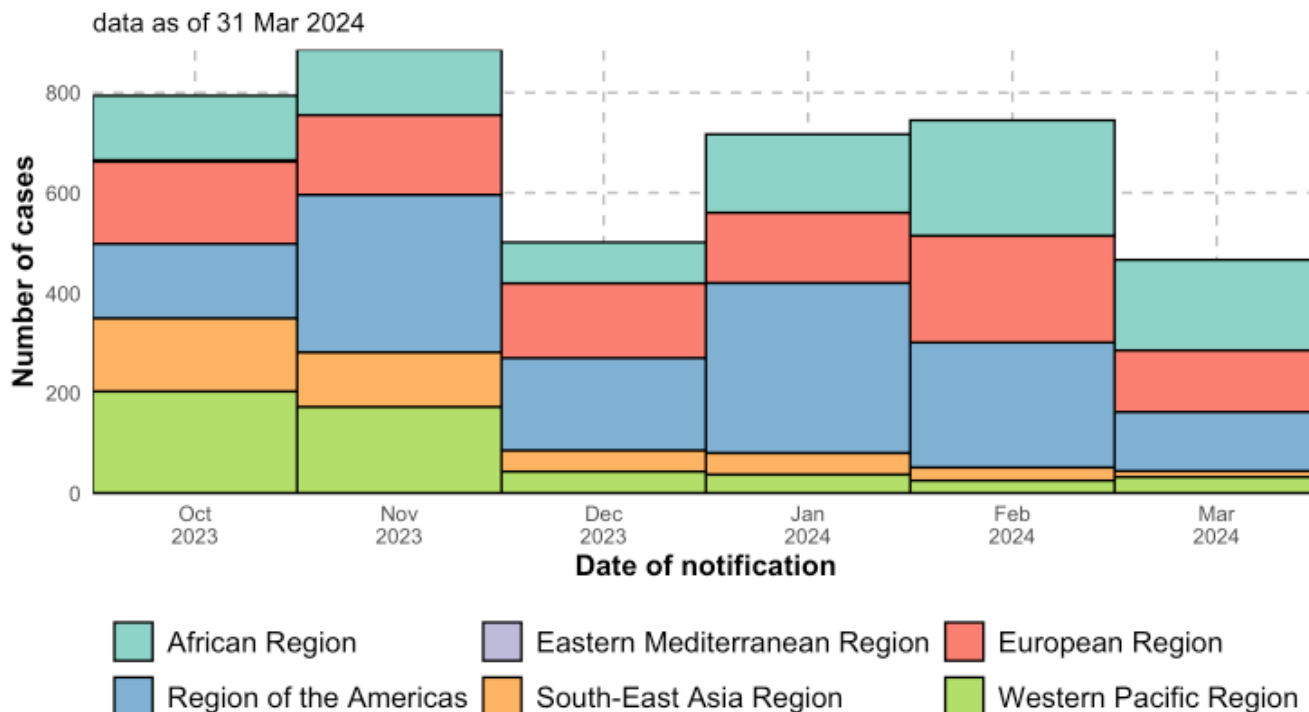


Source: WHO

*Figure 1 shows aggregated monthly data, ending on the last day of the month. **Note the different scales of the y-axes.**

Figure 2 shows that the number of monthly confirmed mpox cases reported globally in the last six months (1 October 2023 – 31 March 2024) fluctuated between 400 and 1000 cases (average 685 cases per month), with most cases reported by the Region of the Americas, followed by the European Region and the African Region.

Figure 2. Epidemic curve of monthly aggregated number of confirmed mpox cases reported by WHO region, for the last six months, 1 October – 31 March 2024.



Other key epidemiological findings:

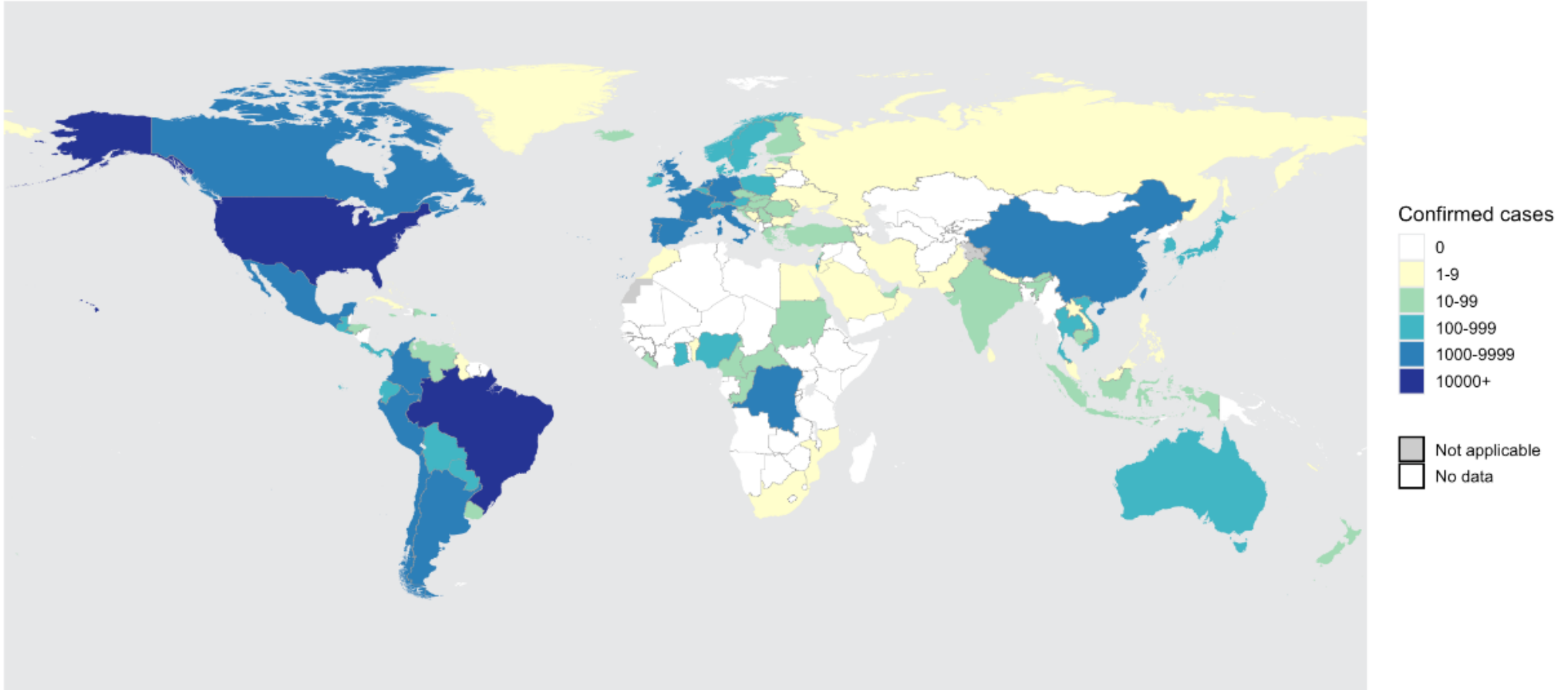
- As of 31 March 2024, 96.4% (85 328 / 88 513) of cases with available data are male, with a median age of 34 years (interquartile range: 29 - 41 years). The age and sex distribution of cases remains stable over time and the majority of cases in the last months, especially outside the African Region, continue to be among adult men (18 - 44 years old).
- Among laboratory-confirmed cases with age data available, 1.3% (1 157 / 90 934) are aged 0 - 17 years, including 333 (0.4%) aged 0 - 4 years. The majority of confirmed mpox cases aged 0 - 17 years were reported from the Region of the Americas (706 / 1 157; 61%). The overall proportion of cases under 18 years of age in the Region of the Americas is 1.2%, similar to the proportion observed globally. In newly affected countries, children have been the least affected population in the outbreak; while in historically affected countries such as the Democratic Republic of the Congo, children under 15 years of age represent most reported mpox cases. Due to limited access to testing, these are classified as suspected cases (i.e. clinically compatible cases that meet the national case definition for mpox) and are not included in this section of the report.
- Of all reported modes of transmission outbreak in the global outbreak, sexual encounters are the most common (18 420 / 22 096; 83.4%) transmission event, followed by person-to-person non-sexual contact. This pattern has persisted over the last six months, with 95.7% (692 / 723) of new cases reporting sexual contact. Detailed information on the routes of transmission is not available for most cases from the African Region, thus, the available information on transmission does not fully describe the spread of the virus in this Region which is thought to be more diverse and include also zoonotic exposure.

- Among cases where at least one symptom is reported (n = 35 997), the most common symptom is any rash (89.8% of cases), followed by fever (58.3%), and systemic rash or genital rash (54.7% and 49.6% respectively). The symptomatology of cases has been very consistent over time in this outbreak. Although information on clinical presentation from countries in East, West and Central Africa is missing in the global surveillance data, other sources of information support rash being the main mpox symptom among cases there as well.
- Around half (18 335 / 35 316; 51.9%) of cases with available information in this outbreak are reported to be in persons living with HIV. This proportion is consistent for cases reported in the last six months (481 / 514; 51.7%) and is related to the common risk factor of sexual exposure between the two conditions. Information on HIV status is not available for most cases in the African Region, and the above description might not be fully representative of cases with different demographics in this region.

Figure 3. Geographic distribution of confirmed cases of mpox reported to or identified by WHO from official public sources, from 1 January 2022 to 31 March 2024

Total mpox cases

from 1 Jan 2022, as of 31 Mar 2024



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
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Special focus: Vaccines and immunization for mpox - policy update

A meeting of the WHO Strategic Advisory Group of Experts on Immunization (SAGE) took place on 11-13 March 2024. An update to the interim mpox recommendations on vaccines and immunization was discussed.

SAGE reviewed the most recent data on the epidemiology of mpox and noted that while reported cases and deaths had declined in all other WHO regions, reported cases and deaths persisted in the African region which has a distinct epidemiology and case distribution, including a reported high morbidity and mortality in children under 15 years old, especially in the Democratic Republic of the Congo.

SAGE was presented with data from systematic reviews of available smallpox/mpox vaccines that demonstrated MVA-BN vaccine effectiveness in pre-exposure vaccination but more limited effectiveness in post-exposure vaccination, noting that all data were generated during the multi-country outbreak. Based on the data presented, SAGE updated its recommendations on the use of vaccines to prevent mpox in outbreak settings and preventive vaccination for high-risk groups in non-outbreak settings.

In the context of an outbreak, to allow the greatest flexibility for local risk assessment, varied modes of transmission and response options, the populations to consider for vaccination may include: (i) adults and children in a geographically defined area or community (e.g. villages) with a documented risk of exposure; (ii) persons with multiple sexual contacts; (iii) health workers at risk of repeated exposure; and (iv) known contacts of persons with mpox.

Noting the endemicity of disease in some African countries, the distinct epidemiology of mpox in these settings and the inequitable access to vaccination, SAGE issued a strong call to action to promote epidemiological and vaccine research on mpox in the African region and for urgent steps to facilitate equitable access to vaccination. Research and systematic investigation and data collection should also be embedded in the outbreak response.

Final recommendations on vaccines and immunization for mpox will be published in May 2024.

References

1. The WHO SAGE highlights on updated mpox vaccine recommendations are available at this link [sage-meeting-highlights_v3-march2024.pdf \(who.int\)](#)
2. Download the pdf from this link to access background materials for the March 2024 meeting of the WHO Strategic Advisory Group of Experts on Immunization (SAGE) [\(who.int\)](#)

Special focus: Mpox diagnostics and laboratory update

Over many years and especially since 2012, the annual number of cases of mpox reported linked with clade I monkeypox virus (MPXV) has been increasing in the WHO African region (1). In addition to outbreaks in endemic areas often considered to be associated with zoonotic transmission with subsequent household and community spread (2), human-to-human transmission of mpox due to clade I MPXV has also continued to increase. In the Democratic Republic of the Congo, there was a marked rise in cases reported in 2023. For the first time in 2023, sexual transmission of clade I MPXV was also documented where outbreaks associated with sexual contact are ongoing (3). Outbreaks linked to sexual transmission have occurred among sex workers in mining communities, in clusters of cases among men who have sex with men, and through heterosexual transmission in households.

MPXV has a linear DNA genome and is approximately 200 kb long. The genome has a highly conserved central region coding for replication and its assembly machinery (4). In addition, the genome has the more variable ends that contain inverted terminal repeats (ITRs), which contain genes involved in host range determination and pathogenesis. For clade I and clade II, deletions and duplications of parts of less conserved regions in the MPXV genome termini have been described (5-11). These deletions can lead to loss of detection with MPXV clade

specific NAAT tests (6, 8, 12). Therefore, monitoring the genomic evolution of MPXV and the potential impact on performance of NAAT assays used is strongly recommended.

In the Democratic Republic of the Congo, a novel variant of MPXV clade I was identified in South Kivu province, in the Kamituga health zone (12). This variant carries a deletion of a gene that widely serves as a target for clade-specific molecular assays. This deletion was confirmed by the national reference laboratory, the Institut national de recherche biomédicale (INRB) and other academic and public health institutes. Whereas orthopoxvirus (OPXV) generic PCR tests target conserved genes, clade-specific PCR tests do not. For this reason, it is generally recommended that in seeking to confirm an outbreak or a new case in a previously non-outbreak area, clade-specific PCR assays should be coupled with an OPXV generic or MPXV generic PCR that targets conserved genes. The diagnostic strategy employed by INRB includes an OPXV generic PCR followed by clade-specific PCR when indicated; this strategy will detect the novel lineage of MPXV in the country where it is circulating.

To provide information for diagnostic and reference laboratories in all countries to ensure capability to detect the novel strain, WHO is issuing an update of interim guidance on *Diagnostic testing for the monkeypox virus (MPXV)*. The revised guidance will reflect these developments in mpox epidemiology and viral evolution with respect to the novel strain of clade I MPXV that may evade diagnostic confirmation and update considerations for diagnostic strategies to avoid gene target failures for MPXV clade assays. The new interim guidance will supersede the version published on 9 November 2023 to provide guidance for clinicians, laboratories, health workers, public health officials and other stakeholders involved in the diagnosis and care of patients with suspected, probable or confirmed mpox.

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Special focus: High-level meeting on mpox in the African Region and update on response in the Democratic Republic of the Congo

High-level emergency meeting on mpox in Africa, Democratic Republic of the Congo, 11-13 April 2024

An inter-ministerial meeting on mpox was organized by the World Health Organization, the Africa Centres for Disease Control and UNICEF and hosted by the Minister of Public Health, Hygiene, and Prevention (MSPHP) of the Democratic Republic of the Congo in Kinshasa on 11-13 April 2024. The objectives of the meeting were to:

- i) Share the latest research and insights on mpox, including epidemiology, transmission, and prevention strategies;
- ii) Review and enhance existing response frameworks and collaboration mechanisms among affected countries;
- iii) Foster partnerships and coordinate efforts with international health organizations and donors for effective outbreak response and management including vaccination; and
- iv) Develop a comprehensive action plan for mpox surveillance, control, and prevention across the African continent.

A communiqué was endorsed by the twelve Ministries of Health present at the meeting and published [here](#). [Communiqué: United in the Fight Against Mpox in Africa - High-Level Emergency Regional Meeting – Africa CDC](#) (documents available in English and French at this site). The outcome of the meeting will be reported to the African Union assembly in July 2024. The twelve Ministries of health made the following commitments.

Collectively, we resolve and commit our governments and institutions to:

1. PROMOTE a 'One Health' approach and inclusive, community-centered response mechanisms, including:

- a. Strengthen response efforts in our countries and give them the resources and political commitment they deserve;*
- b. Develop and implement national multi-sectoral mpox plans, outlining critical actions to control mpox in all contexts;*
- c. Establish multi-sectoral coordination and accountability mechanisms that include other ministries and partners;*
- d. Establish and develop surveillance and laboratory diagnostic capabilities to improve epidemic detection and risk assessment;*
- e. Engage in further research to better understand the epidemiology and transmission dynamics of mpox in our countries, including sexual transmission.*
- f. Provide optimally integrated and stigma-free clinical care for mpox, including access to specific treatment and support measures to protect healthcare workers and caregivers, where appropriate;*
- g. Collaborate and accelerate research and development and regulatory processes for the development, and ensure equitable access to safe, effective and quality countermeasures, including vaccines, diagnostics and therapeutics for affected populations including children;*
- h. Develop strategies for the use of new technologies to facilitate sample transport (drones, etc.);*
- i. Strengthen organized and structured national laboratory networks; and more rational detection procedures to improve biomonitoring, biosafety and biosecurity.*

2. UNDERTAKE actions to facilitate cooperation and collaboration between all African Union Member States, in particular countries affected by an mpox outbreak and other neighbouring countries, for mpox preparedness and response, including:

- a. Real-time sharing and digitization of epidemiological and laboratory surveillance data and other relevant reports;*
- b. Cross-border collaboration and coordination in mpox preparedness and response;*

- c. Sharing of technical expertise and other resources required for mpox preparedness and control;*
- d. Joint cross-border planning and implementation of Mpox preparedness and response activities, including risk communication and community engagement campaigns, including among key populations;*
- e. Sharing of information on potential threats to health security arising in areas affected by mpox outbreaks;*
- f. Monitoring the movement of people, animals and goods across national borders in accordance with the International Health Regulations (2005);*
- g. Capacity building of human resources, including joint training, learning exchanges and benchmarking visits, as well as simulation exercises;*
- h. Development of legal and regulatory processes and logistical planning for rapid cross-border deployment of public health experts and medical personnel for the mpox response.*

3. *FACILITATE technical support through Africa CDC and WHO mechanisms at various levels, including headquarters offices (Africa CDC and WHO), regional collaborating centres, regional offices and country offices.*
4. *EXCHANGE information rapidly on preparedness and response matters of common interest in line with the IHR (2005), in order to maintain the peace, security and prosperity of affected Member States and the Continent as a whole;*
5. *DECIDE to establish the Africa Taskforce for Mpox Coordination among Member States affected and at-risk of mpox to:*
 - a. Facilitate the strengthening of preparedness and response capacities to mitigate the impact of mpox in Africa and beyond;*
 - b. Strengthen rapid epidemic response, effective surveillance, capacity building of national laboratories and engagement with affected communities*
 - c. Develop a common regional and national roadmap outlining mpox prevention, detection and control;*
 - d. Prioritize scientific research and evidence synthesis for a better understanding of the disease, and support evidence-based decision-making for disease prevention and control.*
6. *REQUEST the African Union Commission, Africa CDC and WHO to jointly facilitate coordination of the Africa Taskforce for mpox coordination;*
7. *CALL UPON ALL partners to harmonize support to Member States in the fight against mpox by interacting with the African Taskforce for Mpox Coordination to ensure that each fulfills the mandates given to them at this meeting.*

Update, response to mpox in the Democratic Republic of the Congo

The Democratic Republic of Congo has reported cases of mpox (monkeypox) for decades (1, 2). However, the unprecedented increase in the number of reported cases since 2022 led the Minister of Public Health, Hygiene, and Prevention to officially declare a national epidemic of mpox in the DRC in December 2022. In February 2023, the Public Health Emergency Operations Centre (COUSP) activated an Incident Management System for mpox and developed a national plan for mpox preparedness and response.

Situation assessment

Given the surge in cases reported in 2023 (3), the WHO and MSPHP led a joint integrated mission to assess the situation in the country and published a mission report (4) (which can be found [here](#)) and led to the publication of situation reports by the country (5). The fifth situation report can be found [here](#).

Epidemiologic highlights

During the first quarter of 2024 (Epi weeks 1-12 2024), 4,538 cases and 296 deaths were reported with (CFR 6.5%) compared to 1814 suspected cases and 83 deaths (CFR 4.6%) reported in the same period in 2023. In addition to the increase in reported cases in endemic provinces, an outbreak linked to sexual transmission is ongoing in South Kivu, with 29% of cases among sex workers aged 20 – 40 years (6,7). This increased the growing concern regarding rising human-to-human transmission and an increased risk of spread to other provinces and countries.

Response strategies

The MSPHP developed an updated national response plan in March 2024 and notified participants at the High-level regional meeting on mpox in Africa that mpox is considered a public health emergency in the country. Consequently, the MOH has enhanced emergency response through strengthening the Public Health Emergency Operations Centre (COUSP) and the mpox incident management team, with the support of technical and health and development partners. Ongoing efforts include strengthened coordination at all levels and with partners and stakeholders and enhancing support to increase capacity for investigation and testing of reported cases.

The MSPHP has highlighted the need to ensure training of health workers and provision of medical supplies for optimal case management, particularly for children who are experiencing high case fatality, and adequate infection prevention and control. Activities are underway to adapt mpox risk communication messages and community engagement strategies to respond to mpox outbreaks in accordance with the evolving epidemiology in different parts of the country, in close partnership with the national HIV/AIDS control programme. These will include community support, training of health workers and enhancing media coverage and adaptation of communication tools in local languages.

The MSPHP has indicated interest in use of mpox vaccines in the context of the mpox outbreaks in the country. In March 2024, the national immunization advisory group, the Groupe technique consultatif indépendant sur la vaccination (GTCV), provided recommendations on use of mpox vaccine in the national context. WHO and other partners are working with the national regulatory authority, the Autorité congolaise de réglementation pharmaceutique (ACOREP), to support vaccine assessment as needed.

The WHO and other partners continue to provide technical support to the MSPHP with respect to design of clinical studies of mpox vaccines, developing of immunization strategies with systematic data collection, coordinating access to mpox vaccines through donations and other mechanisms, and strengthening readiness for roll-out of immunization for emergency response.

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Technical guidance and other resources

Strategic Planning and Global Support

- Responding to the global mpox outbreak: ethics issues and considerations: a policy brief, 19 July 2023. https://www.who.int/publications/i/item/WHO-Mpox-Outbreak_response-Ethics-2023.1
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- 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>
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International Health Regulations Emergency Committee, Review Committee and Recommendations of the Director-General

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- Clinical management and infection prevention and control for monkeypox: Interim rapid response guidance, 10 June 2022. <https://www.who.int/publications/i/item/WHO-MPX-Clinical-and-IPC-2022.1>
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- 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 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>

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- Clinical characterization of mpox including monitoring the use of therapeutic interventions: statistical analysis plan, 13 October 2023: https://www.who.int/publications/i/item/WHO-MPX-Clinical-Analytic_plan-2023.1
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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>

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- Risk communication and community engagement readiness and response toolkit: mpox, 23 April 2024. [Risk communication and community engagement readiness and response toolkit: mpox \(who.int\)](https://www.who.int/publications/i/item/WHO-MPX-RCC-2024)
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- Public health advice on mpox and congregate settings: settings in which people live, stay or work in proximity, 20 March 2023: <https://www.who.int/publications/m/item/public-health-advice-on-mpox-and-congregate-settings--settings-in-which-people-live--stay-or-work-in-proximity>
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- Risk communication and community engagement public health advice on understanding, preventing and addressing stigma and discrimination 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>
- 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>
- Mpox Q&A on mpox testing for health workers and individuals. 2 March 2023: <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>
- Monkeypox Q&A, 31 August 2022. <https://www.who.int/news-room/questions-and-answers/item/monkeypox>
- Infographic on getting tested for mpox 27 February 2023: <https://www.who.int/multi-media/details/getting-tested-for-mpox--what-you-need-to-know>
- Mpox infographics: English: <https://www.who.int/multi-media/details/mpox-what-we-know> French: https://cdn.who.int/media/docs/default-source/documents/emergencies/outbreak-toolkit/mpox-infographic-fr-v03.pdf?sfvrsn=a4dac1d_1

EPI - WIN Webinars and Updates

- The recordings of the previous [EPI-WIN Webinars](https://www.who.int/news-room/events/detail/2023/06/28/default-calendar/who-epi-win-webinar-global-mpox-strategy-for-elimination-and-control-open-consultation) related to current monkeypox outbreak:
 - WHO EPI-WIN webinar: Global mpox strategy for elimination and control: open consultation (28 June) <https://www.who.int/news-room/events/detail/2023/06/28/default-calendar/who-epi-win-webinar-global-mpox-strategy-for-elimination-and-control-open-consultation>
 - WHO EPI-WIN webinar: Changing perspectives of the mpox outbreak (22 February 2023): <https://www.who.int/news-room/events/detail/2023/02/22/default-calendar/who-epi-win-webinar-changing-perspectives-of-the-mpox-outbreak>
 - EPI-WIN webinar: How is Monkeypox spreading? What we know so far (27 July 2022): <https://www.who.int/news-room/events/detail/2022/07/27/default-calendar/WHO-EPI-WIN-webinar-how-is-monkeypox-spreading>
 - EPI-WIN webinar: Monkeypox outbreak and mass gatherings (24 June 2022) : <https://www.who.int/news-room/events/detail/2022/06/24/default-calendar/WHO-EPI-WIN-webinar-monkeypox-and-mass-gathering>
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- [Managing stigma and discrimination in health-care settings in public health emergencies such as monkeypox](https://www.who.int/news-room/press-releases/2022/09/22/who-mpox-stigma) (22 Sept 2022)
- [How is monkeypox spreading? What do we know so far](https://www.who.int/news-room/press-releases/2022/07/27/who-mpox-spreading) (27 July 2022)
- [Monkeypox outbreak and mass gatherings](https://www.who.int/news-room/press-releases/2022/06/24/who-mpox-gatherings) (24 June 2022)
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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

- Diagnostic testing for the monkeypox virus (MPXV): interim guidance, 9 November 2023. [Diagnostic testing for the monkeypox virus \(MPXV\): interim guidance, 9 November 2023 \(who.int\)](#)
- 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>
- Diagnostic testing for the monkeypox virus (MPXV): interim guidance, 9 November 2023. <https://www.who.int/publications/i/item/who-mpx-laboratory-2023-1>
- 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>

Clinical management and Infection, prevention and Control

- Clinical characterization of mpox including monitoring the use of therapeutic interventions: statistical analysis plan, 13 October 2023. [Clinical characterization of mpox including monitoring the use of therapeutic interventions: statistical analysis plan, 13 October 2023 \(who.int\)](#)
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- [mhGAP intervention guide - version 2.0. Geneva: World Health Organization; 2019. mhGAP training manuals for the mhGAP intervention guide for mental, neurological, and substance use disorders in non-specialized health settings. Geneva: World Health Organization; 2017. https://apps.who.int/iris/handle/10665/250239](#)

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 #30- 25 November 2023: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report-30---25-november-2023>
- Multi-country outbreak of mpox, External situation report #29- 20 October 2023: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report-29---20-october-2023>
- Multi-country outbreak of mpox, External situation report #28- 19 September 2023: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report-28---19-september-2023>
- Multi-country outbreak of mpox, External situation report #27- 14 August 2023: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report-27---14-august-2023>
- Multi-country outbreak of mpox, External situation report #26- 14 July 2023: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report--26---14-july-2023>
- Multi-country outbreak of mpox, External situation report #25- 24 June 2023: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report--25---24-june-2023>
- Multi-country outbreak of mpox, External situation report #24- 10 June 2023: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report--24---10-june-2023>
- Multi-country outbreak of mpox, External situation report #23- 26 May 2023: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report--23---26-may-2023>
- Multi-country outbreak of mpox, External situation report #22- 11 May 2023: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report--22---11-may-2023>
- Multi-country outbreak of mpox, External situation report #21- 27 April 2023: <https://www.who.int/publications/m/item/multi-country-outbreak-of-mpox--external-situation-report-21---27-april-2023>
- 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>
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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 2022: <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](#)
- 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>
- Health topics – Monkeypox: <https://www.who.int/health-topics/monkeypox>
- Open WHO. Online training module. Monkeypox: Introduction. 2020
 - English: <https://openwho.org/courses/monkeypox-introduction>
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 - English: <https://openwho.org/courses/monkeypox-intermediate>;
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Other Resources

- Strategic Advisory Group of Experts on Immunization (SAGE) - March 2024. [Highlights from the Meeting of the Strategic Advisory Group of Experts \(SAGE\) on Immunization, 11-13 March 2024 \(who.int\)](#)
- WHO AFRO Weekly Bulletin on Outbreaks and Other Emergencies, all previous items: <https://www.afro.who.int/health-topics/disease-outbreaks/outbreaks-and-other-emergencies-updates>
- WHO 5 moments for hand hygiene. <https://www.who.int/campaigns/world-hand-hygiene-day>
- WHO One Health. <https://www.who.int/health-topics/one-health>
- World Organisation for Animal Health, founded as OIE: Monkeypox. <https://www.woah.org/en/disease/monkeypox/>
- Joint WHO Regional Office for Europe - European Centre for Disease Prevention and Control, Monkeypox surveillance bulletin [Situation reports \(who.int\)](#)
- Joint WHO Regional Office for Europe - European Centre for Disease Prevention and Control, Monkeypox Resource toolkit to support national authorities and event organizers in their planning and coordination of mass and large gathering events. <https://www.who.int/europe/tools-and-toolkits/monkeypox-resource-toolkit-for-planning-and-coordination-of-mass-and-large-gathering-events/>
- 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

- Monkeypox in the Region of the Americas - Risk assessment. <https://www.paho.org/en/documents/monkeypox-region-americas-risk-assessment>
- mhGAP humanitarian intervention guide (mhGAP-HIG): clinical management of mental, neurological, and substance use conditions in humanitarian emergencies. Geneva: World Health Organization; 2015. <https://www.who.int/publications/i/item/9789241548922>
- WHO. Weekly Bulletin on Outbreaks and Other Emergencies [Internet]. Available from: <https://apps.who.int/iris/bitstream/handle/10665/370961/OEW27-0309072023.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. Moreover, at the present stage of the 2022-24 global mpox outbreak, frequency of reporting of cases to WHO has decreased substantially, therefore presented data might not be fully representative of the overall epidemiological situation in several countries.

^[1]'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 through 31 March 2024, 17:00 CEST.

*Countries with no reported cases in the last month

WHO Region	Country	Total Confirmed Cases	Total Deaths [#]
African Region	Benin*	3	0
	Cameroon*	47	4
	Central African Republic	50	1
	Congo	54	2
	Democratic Republic of the Congo	1 763	2
	Ghana*	131	4
	Liberia	23	0
	Mozambique*	1	1
	Nigeria*	843	9
	South Africa*	5	0
Eastern Mediterranean Region	Bahrain*	2	0
	Egypt*	3	0
	Iran (Islamic Republic of) *	1	0
	Jordan*	1	0
	Lebanon*	27	0
	Morocco*	3	0
	Oman*	3	0
	Pakistan*	7	0
	Qatar*	5	0
	Saudi Arabia*	8	0

	Sudan*	19	1
	United Arab Emirates*	16	0
European Region	Andorra*	4	0
	Austria*	345	1
	Belgium	806	2
	Bosnia and Herzegovina*	9	0
	Bulgaria*	6	0
	Croatia*	33	0
	Cyprus*	5	0
	Czechia*	78	1
	Denmark*	198	0
	Estonia*	11	0
	Finland*	43	0
	France	4 206	0
	Georgia*	2	0
	Germany	3 830	0
	Gibraltar*	6	0
	Greece	92	0
	Greenland*	2	0
	Hungary*	83	0
	Iceland*	17	0
	Ireland*	245	0
	Israel*	293	0
	Italy	1 042	0
	Latvia*	6	0
	Lithuania*	5	0
	Luxembourg*	61	0
	Malta*	35	0
	Monaco*	3	0
	Montenegro*	2	0
	Netherlands*	1 299	0
	Norway*	105	0
	Poland	221	0
	Portugal	1 193	3
	Republic of Moldova*	2	0
Romania*	47	0	
Russian Federation*	4	0	
San Marino*	1	0	
Serbia*	40	0	
Slovakia*	16	0	
Slovenia*	47	0	
Spain	7 960	3	

	Sweden*	272	0
	Switzerland*	579	0
	The United Kingdom	12	0
	Türkiye*	3 908	0
	Ukraine*	5	0
Region of the Americas	Argentina*	1 136	2
	Aruba*	3	0
	Bahamas*	3	0
	Barbados*	1	0
	Bermuda*	1	0
	Bolivia (Plurinational State of)*	265	0
	Brazil*	10 967	16
	Canada	1 499	0
	Chile*	1 449	3
	Colombia*	4 090	0
	Costa Rica*	225	0
	Cuba*	8	1
	Curaçao *	3	0
	Dominican Republic*	52	0
	Ecuador*	557	3
	El Salvador*	104	0
	Guadeloupe*	1	0
	Guatemala*	405	1
	Guyana*	2	0
	Honduras*	44	0
	Jamaica*	21	0
	Martinique*	7	0
	Mexico	4 084	34
	Panama*	239	1
	Paraguay*	126	0
	Peru*	3 812	20
	Puerto Rico	221	0
	Saint Martin*	1	0
	Trinidad and Tobago*	3	0
	United States of America	31 904	58
Uruguay*	19	0	
Venezuela (Bolivarian Republic of) *	12	0	
South-East Asia Region	India*	27	1
	Indonesia*	84	0
	Nepal*	1	0
	Sri Lanka*	4	0
	Thailand	755	1

Western Pacific Region	Australia*	156	0
	Cambodia*	13	0
	China	2 034	1
	Guam*	1	0
	Japan	242	1
	Lao People's Democratic Republic*	1	0
	Malaysia*	9	0
	New Caledonia*	1	0
	New Zealand*	50	0
	Philippines*	9	0
	Republic of Korea*	155	0
	Singapore	57	0
Viet Nam	169	8	
Cumulative	117 Countries/territories/areas	95 226	185

#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.