Mpox

Multi-country external situation report no. 38, published 28 September 2024

This situation report provides an update of the weekly mpox epidemiological situation in Africa, and the monthly global epidemiological situation.

KEY FIGURES				
Reporting period: 01 January 2022 – 31 August 2024				
Area	**Number of reported confirmed cases**	**Number of deaths among confirmed cases**	**Number countries reporting cases**	
Global	**106 310**	**234**	**123**	
Reporting period: 01 January – 22 September 2024				
Area	**Number of reported confirmed cases**	**Number of deaths among confirmed cases**	**Number of reported suspected cases**	**Number of deaths among suspected cases**
Africa	**6 603**	**32**	**31 427**	**844**
Democratic Republic of the Congo[1]	**5 621**	**25**	**27 103**	**838**
Burundi[1]	**696**	**0**	**1879**	**0**
Reporting period: last 6 weeks, 12 August – 22 September 2024				
Africa	**2 009**	**1**	**12 498**	**232**
Democratic Republic of Congo[1]	**1 268**	**0**	**9 847**	**232**
Burundi[1]	**613**	**0**	**1 546**	**0**

Highlights

- This report provides an update on the mpox epidemiological situation in Africa as of 22 September 2024. A total of 6603 confirmed mpox cases, including 32 deaths have been reported across 15 African countries in 2024, with 402 confirmed cases and no deaths reported in the last week. The Democratic Republic of the Congo accounts for most cases (5621 cases, 25 deaths), followed by Burundi (696 cases, no deaths) and Nigeria (78 cases, no deaths).
- All currently affected countries on the continent have reported new cases in the last six weeks, with Guinea reporting its first mpox case in the past month.
- Testing challenges and delays in case confirmation persist in the Democratic Republic of the Congo persist, with 37% of suspected cases tested in 2024. Positivity among tested cases is around 55%.
- In 2024, as of 22 September, 31 427 suspected cases, including 844 deaths (CFR 2.7%) have been reported in Africa, with 2085 new cases and 32 deaths in the last week. The Democratic Republic of the Congo, Burundi, and Nigeria are reporting the most suspected cases.
- In this report, the latest data received enabled a more detailed analysis of the national and subnational epidemiological situation for the Democratic Republic of the Congo and for Burundi.
    - In the Democratic Republic of the Congo, cases linked to clade Ib MPXV are driving outbreaks particularly in South Kivu province.

[1] In some countries, suspected cases that undergo testing are not removed from the overall count of suspected cases, regardless of whether the test result is positive (confirmed case) or negative (discarded case).

  - Mpox deaths are concentrated in the provinces of Equateur, Sankuru, Tshuapa, and Tshopo, with high case fatality in some areas.
  - In Burundi, since the start of the outbreak in July 2024, 35 of 49 (71%) districts are affected, with children under 5 years of age comprising about 30% of confirmed cases. Approximately 93% of suspected cases are tested, and testing positivity is around 40%.
- On 19 September 2024, the European Medicines Agency (EMA) recommended extending the indication of Modified Vaccinia Ankara-Bavarian Nordic (MVA-BN) vaccine to adolescents from 12 to 17 years of age.
- This edition of the report outlines a research roadmap for mpox prepared by WHO and partners

In this edition:

- Situation overview
- Epidemiological update
  - Situation in Africa
  - Focus on the Democratic Republic of the Congo
  - Focus on Burundi
- Global operational updates
- Special Focus: Mpox research roadmap
- WHO mpox resources

Situation overview

This report provides an update on the epidemiological situation for mpox in Africa (including countries in the WHO African Region and some countries of the WHO Eastern Mediterranean Region), with data as of **22 September 2024**.

Recent global updates for mpox can also be found in the WHO mpox surveillance report.

WHO conducted the latest global mpox rapid risk assessment in early August 2024. Based on information available at the time, the mpox risk was assessed as follows:

- In the eastern Democratic Republic of the Congo and neighbouring countries: **high**.
- In areas of the Democratic Republic of the Congo where mpox is endemic: **high**.
- In Nigeria and other countries of West, Central and East Africa where mpox is endemic: **moderate**.
- In all other countries in Africa and around the world: **moderate** (while in individual countries or regional bloc assessments may vary, and the risk may be assessed as low).

Individual-level risk is largely dependent on individual factors such as exposure risk and immune status, regardless of geographic area, epidemiological context, biological sex, gender identity or sexual orientation.

This situation update in Africa presents reported confirmed mpox cases and deaths,[2] as described in the WHO case definitions published in the Surveillance, case investigation and contact tracing for mpox interim guidance. It also presents nationally reported suspected mpox cases, as defined by the countries that have reported them, to provide the reader with more information on epidemiological trends in countries with limitations in access to testing, such as the Democratic Republic of the Congo.

Note: The indicator of suspected cases should be interpreted with caution, as these are recorded according to varying national case definitions, and in some countries, suspected cases that undergo testing are not removed from the overall count of suspected cases, regardless of whether the test result is positive (confirmed case) or negative (discarded case). In the absence of more detailed information, it is currently not possible to correctly subtract confirmed cases from the total number of suspected cases reported; therefore, the confirmed cases represent a subset of suspected cases.

Definitions of suspected mpox cases for the Democratic Republic of the Congo and Burundi can be found here.

[2] For the WHO European region, both confirmed and probable cases are included within confirmed case counts and detailed case data.

Epidemiological update

Situation in Africa in 2024[3, 4]

In 2024, and as of 22 September, 15 countries in Africa have reported 6603 confirmed mpox cases (see Figure 1, left), including 32 deaths (case fatality ratio [CFR] among confirmed cases of 0.5%). In the last week 402 new confirmed cases and no new deaths were reported. The three countries reporting the most cases in 2024 are the Democratic Republic of the Congo (5621 confirmed cases, 25 deaths), Burundi (696 confirmed cases, no deaths), and Nigeria (78 confirmed cases, no deaths). In addition to the Democratic Republic of the Congo, deaths among confirmed mpox cases in 2024 have been reported in South Africa (three), Cameroon (two), Central African Republic (one) and Cote d'Ivoire (one). Among the countries reporting mpox in 2024, all 15 countries have reported new confirmed cases within the past six weeks (see Figure 1, right). The six weeks refer to two mpox incubation periods of 21 days. In the past month, one country, Guinea, reported its first mpox case.

Figure 1. Geographic distribution of confirmed mpox cases, by country, Africa, 2024 (left, 1 January – 22 September) and the last six weeks (right, 26 August – 22 September).

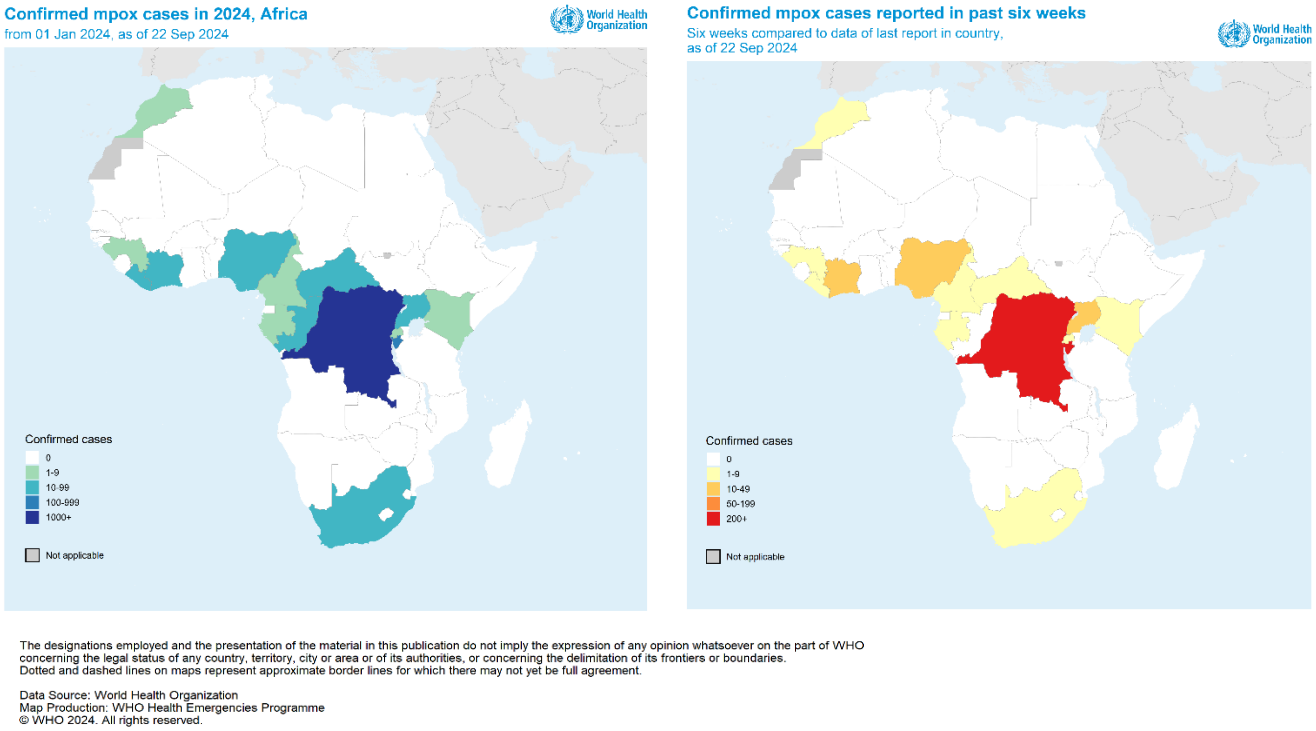


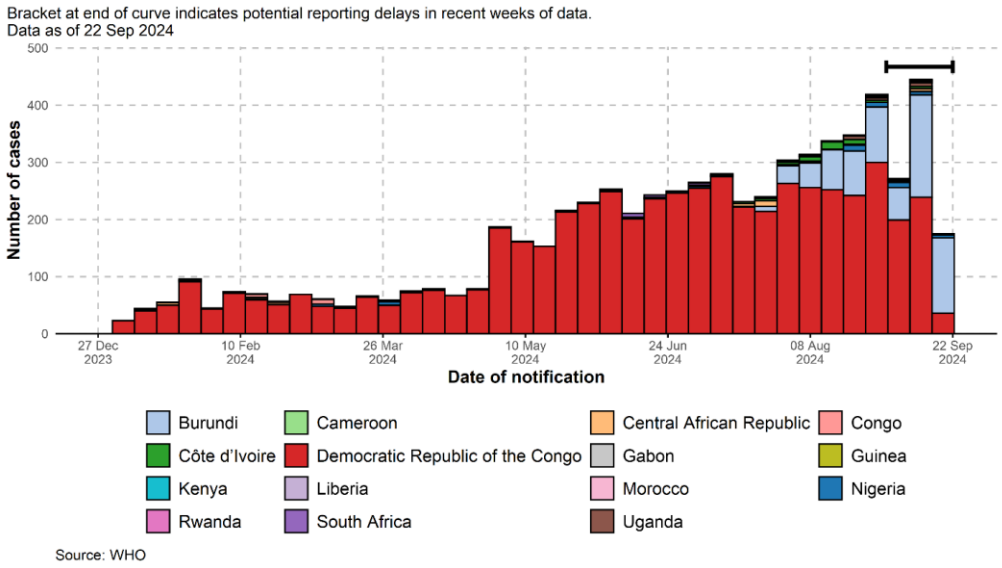
Figure 2, showing the number of confirmed mpox cases in Africa by reporting country, indicates a continued rising trend of mpox in the continent. This is mainly driven by Burundi and a few provinces in the Democratic Republic of the Congo, particularly South Kivu. Nevertheless, the epidemic curve in Figure 2 may underrepresent the epidemiological situation given the limited testing capacities in several African countries, especially in the Democratic Republic of the Congo, where from January to September 2024 around 37% of suspected cases have been tested, with a test positivity of 54%. Challenges include absence or stockouts

[3] On the African continent there are 47 Member States in the WHO African Region and seven in the Eastern Mediterranean Region.

[4] Slight discrepancies in epidemiological data are expected between this report and the WHO Africa Regional Office, Regional Mpox Bulletin: 20 September 2024 due to different reporting dates. The Regional Mpox Bulletin is available in the following link: Mpox (monkeypox) | WHO | Regional Office for Africa

of sampling and testing supplies, difficulties in specimen referral in remote and underserved areas, collection of in appropriate or inadequate specimens, such as blood or samples taken in later stages of the disease, quality of the samples collected and delays between sampling and availability of laboratory results.

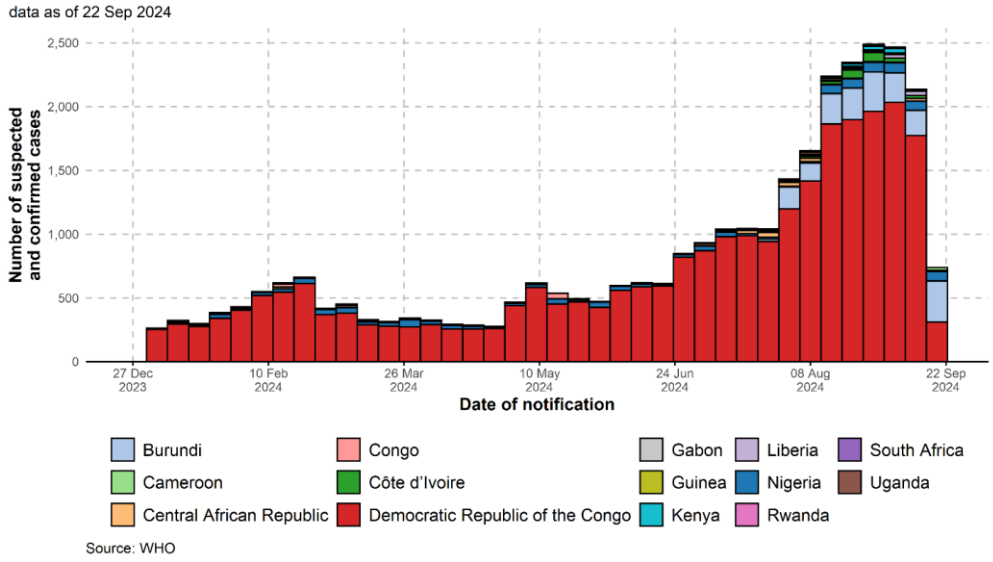
Figure 2. Epidemic curve of reported confirmed mpox cases in Africa, by reporting country, 1 January 2024 – 22 September 2024



From 1 January to 22 September 2024, 31 166 suspected mpox cases and among these 844 deaths due to mpox (CFR 2.7%) were reported in Africa through syndromic surveillance systems which include tested and untested cases. (Figure 3) In the last week, 2 085 new suspected cases and 32 deaths were reported. The three countries reporting the most suspected mpox cases in 2024 are the Democratic Republic of the Congo (27 103 suspected cases, 838 deaths), Burundi (1879 cases, no deaths), and Nigeria (935 cases, no deaths). When compared with trends in confirmed cases, there has been a consistently rising trend in weekly reports of suspected cases (Figure 3) since May 2024, especially in the Democratic Republic of the Congo.

The trends in the number of reported cases in the last weeks of both epidemic curves should be interpreted with caution, given completeness and reporting delays.

Figure 3. Epidemic curve of reported suspected mpox cases (tested and untested) in Africa, by reporting country, 1 January 2024 – 22 September 2024



Focus on the Democratic Republic of the Congo

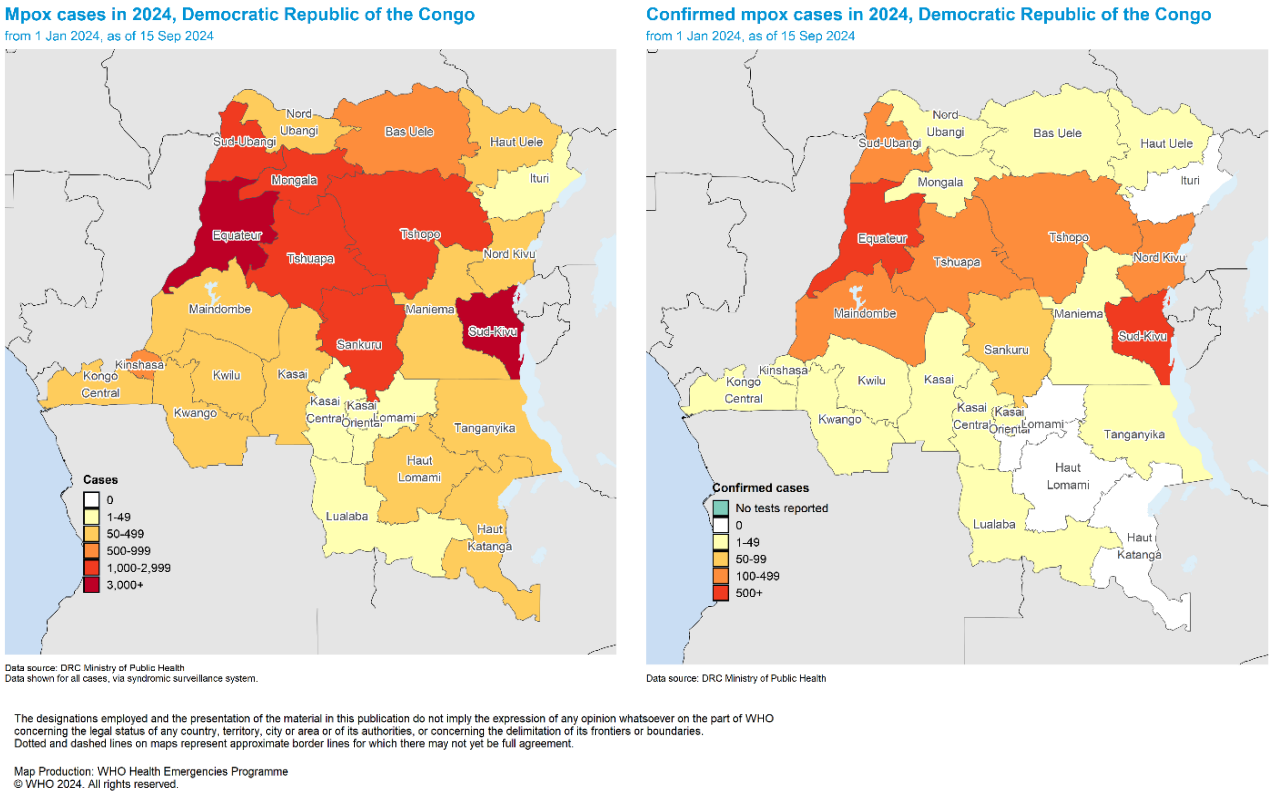
In 2024, all provinces in the Democratic Republic of the Congo have reported suspected mpox cases. Available sequencing data has identified clade Ib MPXV in three provinces, South Kivu, North Kivu and Kinshasa. Clade Ib MPXV was first identified in January 2024 in South Kivu, a province unaffected by mpox prior to September 2024; clade Ib MPXV is associated with a rapid rise in case reports in the province. MPXV clade Ib and clade Ia were found to be cocirculating in Kinshasa in July-August 2024.[5]

In 2024, the provinces reporting the highest number of suspected mpox cases are Equateur and South Kivu, followed by Sankuru, Sud Ubangi, Tshopo, Tshuapa and Mongala (Figure 4, left). The same provinces have also reported the highest number of confirmed mpox cases in 2024 (Figure 4, right).

Trends in suspected cases reveal important differences between provinces[6] – the number of weekly reported cases in Equateur is stable, with approximately 100 - 200 suspected cases reported per week, while the trend in South Kivu continues to rise with around 500 - 600 cases reported per week. Weekly reported cases are also increasing in Sankuru, Sud Ubangi, Tshopo, Tshuapa and Mongala.

While the higher number of reported mpox cases may in part be attributable to strengthened surveillance, there is also evidence to support rising mpox transmission in the country in recent years.[7]

Figure 4. Geographic distribution of reported suspected (left) and confirmed (right) mpox cases, by province, the Democratic Republic of the Congo, 1 January – 15 September 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.

Map Production: WHO Health Emergencies Programme
© WHO 2024. All rights reserved.

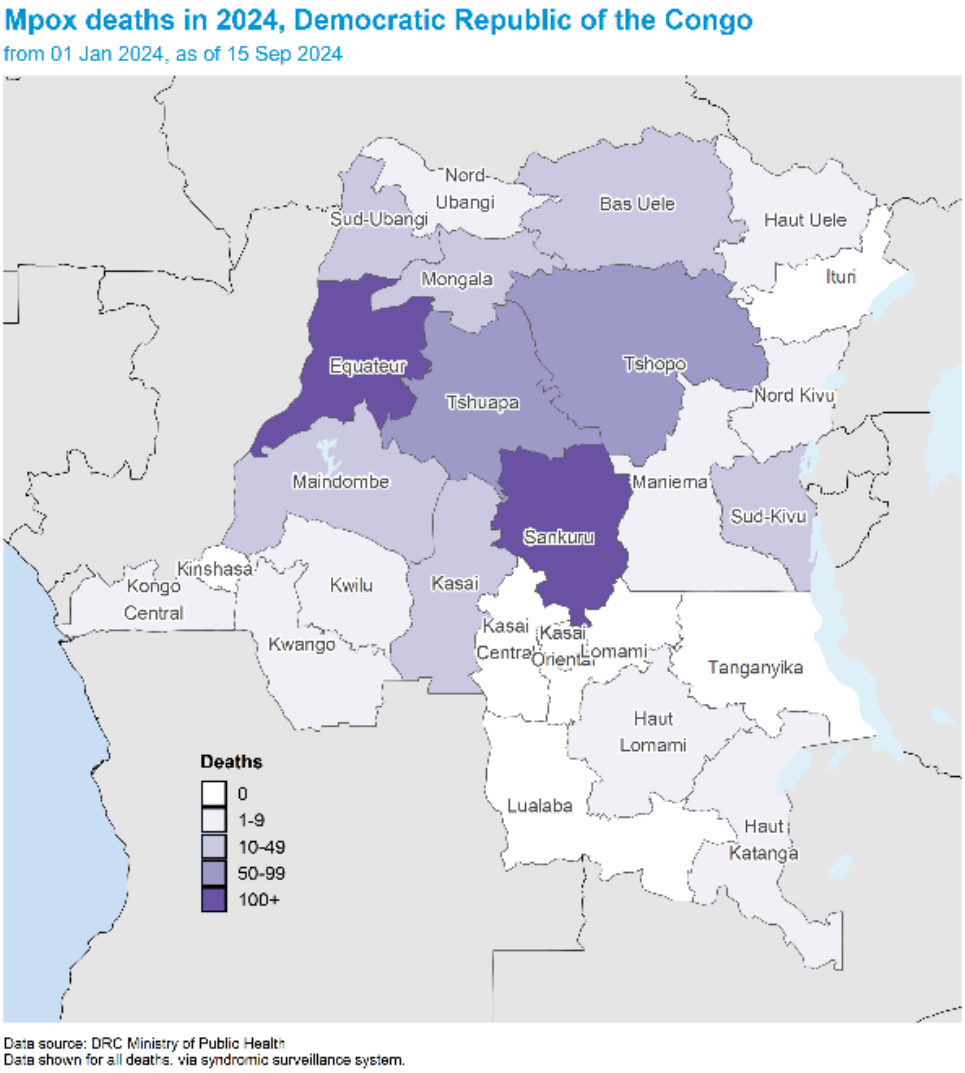
[5] Co-circulation of monkeypox virus subclades Ia and Ib in Kinshasa Province, Democratic Republic of the Congo, July to August 2024 https://www.eurosurveillance.org/content/10.2807/1560-7917.ES.2024.29.38.2400592

[6] Report of the epidemiological situation of mpox in the Democratic Republic of the Congo, sitrep No 026 (from 9 to 15 September 2024) [French] https://reliefweb.int/report/democratic-republic-congo/rapport-de-la-situation-epidemiologique-de-la-variole-simienne-mpox-en-rdc-sitrep-no-026-du-09-au-15-septembre-2024

[7] Mpox in the Democratic Republic of Congo: Analysis of National Epidemiological and Laboratory Surveillance Data, 2010 – 2023 https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4954317

Most mpox deaths among suspected cases in the country are reported in the provinces of Equateur, Sankuru, Tshuapa and Tshopo (Figure 5). The case fatality ratio (CFR) differs between provinces, with the highest recorded in Maindombe (6.7%) and Equateur (5.3%), while some provinces with low number of mpox cases have not reported any death in 2024 so far (Figure 5). In South Kivu, which is believed to be affected only by clade Ib MPXV, and to date primarily among adults, the CFR is 0.5%.

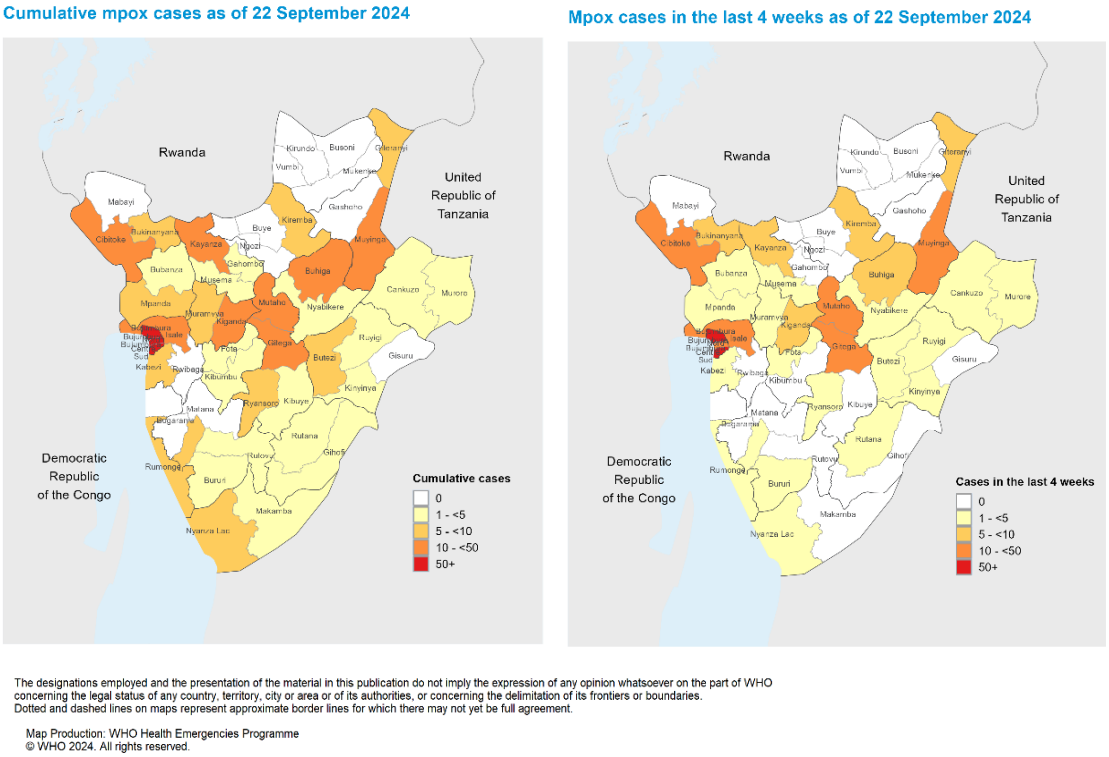
Figure 5. Geographic distribution of mpox deaths among suspected cases, by province, the Democratic Republic of the Congo, 1 January – 15 September 2024.



Focus on Burundi

Since the onset of the outbreak in July 2024, the virus has spread geographically in Burundi where 35 of the 49 (71%) national districts have been affected (Figure 6, left). The three districts of Bujumbura city are the most affected, accounting for around 60% of the national cases. In the last four weeks, 32 districts (65%) have reported at least one confirmed mpox case (Figure 6, right).

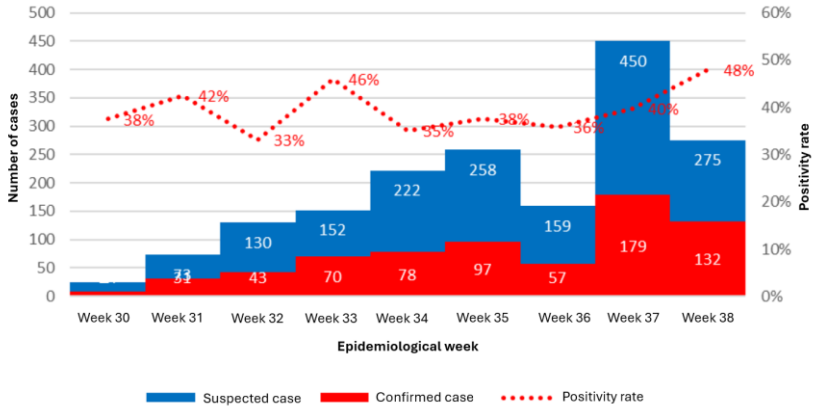
Figure 6. Geographic distribution of confirmed mpox cases, by district, Burundi, from July[8] to 22 September 2024 (left), and from 26 August to 22 September 2024 (right).



As of 22 September 2022, 54% of confirmed cases in Burundi are male. The most affected age groups are adults and children under 5 years of age, with the latter comprising around 30% of confirmed cases

Since the outbreak began, of the 1879 suspected mpox cases, 1743 (93%) were tested; among these, 696 were confirmed by PCR (positivity 40%) (Figure 7) with test positivity rising in recent weeks.

Figure 7. Epidemic curve of suspected and confirmed mpox cases and positivity rate, by week, Burundi, 22 July – 22 September (epidemiological week 30-38) 2024.



Global situation

The mpox global situation update is provided monthly. For the latest information (as of **August 2024)** please refer to the following report: [Multi-country outbreak of mpox, External situation report #37 - 22 September 2024 (who.int)]

[8] The first mpox cases were detected in Burundi in July 2024.

Global operational updates

The WHO health emergency prevention, preparedness, response and resilience (HEPR) framework underpins both the Strategic Framework for enhancing prevention and control of mpox (2024-2027) and the current emergency response to the mpox Public Health Emergency of International Concern (PHEIC).

Aligned with the HEPR framework, the WHO Global Strategic Preparedness and Response Plan (SPRP) for mpox focuses on strengthening five core components—the **5Cs**:

1. **Emergency coordination:** Efficient coordination for timely crisis response.
2. **Collaborative surveillance:** Real-time data integration for early threat detection.
3. **Community protection:** Engaging communities in prevention and resilience-building measures.
4. **Safe and scalable care:** Equipping health systems to provide essential care with scalable capacity.
5. **Access to and delivery of countermeasures:** Ensuring equitable distribution of medical countermeasures.

This section provides updates on the WHO global mpox response **as of 22 September 2024.**

1. Emergency coordination

- Through its Country Offices WHO is supporting Member States in operationalizing response plan guided by the Strategic Preparedness and Response Plan (SPRP). Coordinating with Partners WHO is supporting national coordination structures including activated Incident Management Systems (IMS) in technical areas such as surveillance and epidemiological analysis, vaccination, infection prevention and control (IPC), risk communication and community engagement (RCCE), treatment and therapeutics, operation support and logistics (OSL), among others. On request of Member States, WHO AFRO Regional Office and headquarters have deployed experts to support response operations.
- WHO is still working with relevant partners to design research activities for a better understanding of the outbreak and evidence-based strategies (refer to special focus below).

2. Collaborative surveillance

- Epidemiological data on mpox updated weekly can be accessed on the WHO surveillance report here.
- WHO updated the template transmission studies protocol to support mpox field investigations.
- A webinar on the use of digital and analytics tools for mpox response was held on 24 September 2024. Countries shared their experience using Go.Data for mpox response. Analytical tools and initiatives highlighted included the Collaboratory epidemiological parameters for modelling and analysis, and software tools for addressing common analytics tasks.
- An EPI-WIN webinar on collaborative surveillance for mpox was held on 26 September 2024. WHO and Africa Centers for Disease Control and Prevention (CDC) shared updates on current mpox global surveillance, the main activities to support countries with mpox surveillance, persisting challenges and an update of the current epidemiological situation.
- WHO convened the Orthopoxvirus Laboratory Network to review and update interim guidance on diagnostic testing for monkeypox virus (MPXV). The upcoming update to this interim guidance shall include the latest guidance on MPXV near-point-of-care tests and antigen rapid diagnostic tests.
- WHO and partners initiated the diagnostics workstream of the Access and Allocation Mechanism (AAM).

3. Community protection

- Coordination for community protection continues, covering risk communication, RCCE and infodemic management; community IPC; water, sanitation and hygiene (WASH); home-based care; vaccination; border health and mass gatherings; and managing risks of transmission between animals and humans.

Key multi-partner and civil society engagement and advocacy meetings were held in the reporting period:

- The Community Protection Partners Network meeting held on 20 September 2024 focused on home-based care and community-based infection prevention and control, especially for low resource settings.
- The informal community reference group of civil society organizations, networks and researchers was held on 20 September with representatives from 15 Countries from WHO AFRO, EURO and PAHO regions. Community representatives emphasized the importance of 1) ensuring that messages reach key populations, especially communities affected by HIV, and 2) community preparedness and involvement in the response to address complex layers of stigma and discrimination which hamper efforts to reach key populations and other marginalized groups. Special efforts are required to reach people with disabilities.
- The Collective Service is an interagency initiative between IFRC, UNICEF, WHO, and GOARN for the coordinated delivery of RCCE for public health emergencies. A bi-monthly global call provides a platform for partners to share and hear updates on the global situation.

4. Safe and scalable care

- A rapid assessment tool for IPC and WASH in health facilities has been shared with the African Regional Office and affected countries. This is being implemented in many health facilities in hotspot areas to identify opportunities for improvement in IPC practices and WASH services to ensure health workers and patients remain safe while receiving care.
- Posters for health and care workers for putting on and removing PPE for mpox are available on the WHO website. Steps to put on PPE for mpox, Steps to remove PPE for mpox.

5. Access to and delivery of countermeasures

Vaccines

- On 19 September 2024, the European Medicines Agency recommended extending the indication of Modified vaccinia Ankara-Bavarian Nordic (MVA-BN) smallpox/mpox vaccine to include adolescents 12 to 17 years of age.
- The WHO Global Advisory Committee on Vaccine Safety met on 20 September to review available safety data on mpox vaccines and WHO protocols for safety monitoring.

Diagnostics

- In working towards emergency use listing of mpox diagnostics EUL, WHO is conducting a bridged assessment of 2 dossiers and expecting another dossier submission in coming days.
- On 25 September 2024, WHO met with representatives from Ghana, Nigeria, Rwanda and Tanzania to explore coordination on vaccine safety surveillance data and sharing of data.

Special focus

A coordinated research roadmap for monkeypox virus: Immediate research next steps to contribute to control the outbreak

From 29-30 August, 2024, the Africa CDC, the Coalition for Epidemic Preparedness Innovations (CEPI), the United States National Institutes of Health (US NIH) and WHO held a scientific conference aimed at aligning research efforts with the practical needs of mpox outbreak control.

In a comprehensive effort to synchronize research initiatives with the immediate requirements of mpox outbreak management, discussions emphasized collaboration, regulatory and ethics considerations, and national leadership. Over 2500 participants from affected countries and around the world— scientists, Member State representatives, public health professionals, funding agencies and private sector representatives— gathered to accelerate development of innovations to control the mpox epidemic. The meeting aimed to develop an emergency mpox research response agenda, enhance collaboration and partnerships, and outline key steps and timelines for addressing research gaps, emphasizing the leading role of affected countries and their researchers in shaping the research agenda. Key principles guiding the meeting included collaboration, leadership from affected regions, alignment with outbreak response goals, and a people-centered focus.

There was consensus on the need for studies that 1) contribute to controlling the outbreak; 2) guide interventions so that those at the highest risk of infection are protected, promptly diagnosed, and receive optimal care; and 3) catalyze integration of research in each area of outbreak response, in a collaborative manner and with researchers and ministries of health of the affected countries in the driving seat.

Ten immediate next steps for a coordinated Research Roadmap:

1. Obtain additional data on mpox transmission and epidemiology, including clinical outcomes and risk factors for severe disease.
2. Evaluate and deploy new rapid and sensitive diagnostic tests that detect all monkeypox virus (MPXV) clades and help with the differential diagnosis of diseases that can resemble mpox.
3. Define and implement all elements of an optimized clinical standard of care for all mpox patients.
4. Promote development of new therapeutics and evaluation of safety and efficacy of prioritized candidate therapeutics for mpox, in coordinated collaborative multicenter trials.
5. Conduct research on animal models and use animal models towards the determination of correlates of protection, and support research on immunoassays.
6. Define regulatory pathways for “next generation” medical countermeasures.
7. Facilitate availability of vaccines in areas with sustained human to human transmission as part of an integrated response, and promote generation of critical data regarding vaccine safety, performance and delivery strategies.
8. Use existing tools to incorporate Good Participatory Practices and community engagement in research including public health research.
9. Integrate research into outbreak response activities.
10. Embrace and expand opportunities for coordination and collaboration of all research initiatives with local authorities and research institutions, with researchers from affected countries and ministries of health at the centre of the response.

A summary of these immediate next steps can be found here. A full research roadmap will follow.

Mpox resources

Strategic planning and global support

- WHO mpox global strategic preparedness and response plan. Updated 6 September 2024. Available at: https://www.who.int/publications/m/item/mpox-global-strategic-preparedness-and-response-plan
- Mpox continental preparedness and response plan for Africa: https://africacdc.org/download/mpox-continental-preparedness-and-response-plan-for-africa/
- WHO appeal: mpox public health emergency 2024, 27 August 2024. Available at: https://www.who.int/publications/m/item/who-appeal--mpox-public-health-emergency-2024
- Strategic framework for enhancing prevention and control of mpox (2024-2027). May 2024. Available at: https://www.who.int/publications/i/item/9789240092907

International Health Regulations Emergency Committee, Review Committee and recommendations of the Director-General

- First meeting of the International Health Regulations (2005) Emergency Committee regarding the upsurge of mpox 2024, 19 August 2024. https://www.who.int/news/item/19-08-2024-first-meeting-of-the-international-health-regulations-(2005)-emergency-committee-regarding-the-upsurge-of-mpox-2024
- Extension of the standing recommendations for mpox issued by the Director-General of the World health organization (WHO) in accordance with the International Health Regulations (2005) (IHR), 21 August 2024. Extension of the standing recommendations for mpox issued by the Director-General of the World health organization (WHO) in accordance with the International Health Regulations (2005) (IHR)
- Standing recommendations for mpox issued by the Director-General of the World Health Organization (WHO) in accordance with the International Health Regulations (2005) (IHR), 21 August 2023. https://www.who.int/publications/m/item/standing-recommendations-for-mpox-issued-by-the-director-general-of-the-world-health-organization-(who)-in-accordance-with-the-international-health-regulations-(2005)-(ihr)

Regional mpox bulletin

- WHO Africa Regional Office, Regional Mpox Bulletin: 20 September 2024. https://www.afro.who.int/health-topics/mpox-monkeypox

Surveillance

- Surveillance, case investigation and contact tracing for mpox: Interim guidance. 20 March 2024. https://www.who.int/publications/i/item/WHO-MPX-Surveillance-2024.1
- Mpox Case Investigation Form (CIF) and minimum dataset Case Reporting Form (CRF), 5 September 2024. https://www.who.int/publications/m/item/monkeypox-minimum-dataset-case-reporting-form-(crf)
- WHO Go.Data: Managing complex data in outbreaks. https://www.who.int/tools/godata
- Technical Guidelines for Integrated Disease Surveillance and Response in the African Region: Third edition, March 2019. https://www.afro.who.int/publications/technical-guidelines-integrated-disease-surveillance-and-response-african-region-third

Laboratory and diagnostics

- WHO Guidance on regulations for the transport of infectious substances 2023 – 2024, 13 June 2024. https://www.who.int/publications/i/item/789240089525
- Diagnostic testing for the monkeypox virus (MPXV): interim guidance, 10 May 2024. https://www.who.int/publications/i/item/WHO-MPX-Laboratory-2024.1
- Genomic epidemiology of mpox viruses across clades. https://nextstrain.org/mpox/all-clades
- WHO Biohub System. https://www.who.int/initiatives/who-biohub

- Mpox Q&A on mpox testing for health workers, 11 December 2023. https://www.who.int/news-room/questions-and-answers/item/testing-for-mpox--health-workers

Clinical management and infection, prevention and control

- Posters for health and care workers.
  - Steps to put on PPE for mpox (16 August 2024)
  - Steps to remove PPE for mpox (16 August 2024)
- 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
- The WHO Global Clinical Platform for mpox. https://www.who.int/tools/global-clinical-platform/monkeypox
- Atlas of mpox lesions: a tool for clinical researchers, 28 April 2023. https://apps.who.int/iris/bitstream/handle/10665/366569/WHO-MPX-Clinical-Lesions-2023.1-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, 12 April 2022. https://www.who.int/publications/i/item/9789240041745
- WHO 5 moments for hand hygiene. https://www.who.int/campaigns/world-hand-hygiene-day

Vaccination

- WHO prequalifies mpox vaccine. 13 September 2024. News brief.
- Smallpox and mpox (orthopoxviruses): WHO position paper. 23 August 2024. https://www.who.int/publications/i/item/who-wer-9934-429-456
- Meeting of the Strategic Advisory Group of Experts on Immunization (SAGE), 11 – 13 March 2024: conclusions and recommendations. https://iris.who.int/handle/10665/376934
- 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

Risk communication and community engagement and public health advice

- Mpox Factsheet, 26 August 2024. https://www.who.int/news-room/fact-sheets/detail/mpox
- Mpox Q&A, 17 August 2024. https://www.who.int/news-room/questions-and-answers/item/mpox
- Risk communication and community engagement readiness and response toolkit: mpox, 23 April 2024. https://www.who.int/publications/i/item/9789240091559
- Mpox Q&A on mpox testing for individuals and communities, 11 December 2023. https://www.who.int/news-room/questions-and-answers/item/testing-for-mpox--individuals-and-communities
- 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
- Public health advice for sex workers on mpox, 18 September 2024. https://www.who.int/publications/m/item/public-health-advice-for-sex-workers-on-monkeypox
- 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
- Public health advice for gay, bisexual and other men who have sex with men and mpox. Version 3. 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-%28monkeypox%29-and-sex-on-premises-venues-and-events

- 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
- 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

One Health and animal health

- World Organization for animal health (WOAH) statement on novel mpox, 23 August 2024. https://www.woah.org/en/woah-statement-on-novel-mpox/
- WOAH Risk guidance on reducing spillback of monkeypox virus from humans to wildlife. Pet Animals and other Animals, September 2022. https://www.woah.org/app/uploads/2022/12/woah-mpox-guidelines-en.pdf
- WOAH Website and FAQs on mpox, 12 August 2022. https://www.woah.org/en/disease/mpox/

Training and education

- Health topics – mpox: https://www.who.int/health-topics/monkeypox
- Mpox Fact Sheet, 26 August 2024. https://www.who.int/news-room/fact-sheets/detail/mpox
- Mpox Q&A, 17 August 2024. https://www.who.int/news-room/questions-and-answers/item/mpox
- Mpox "What we know": 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
- OpenWHO. Online training module. Monkeypox: Introduction. https://www.who.int/health-topics/monkeypox#tab=tab_1
  - English: https://openwho.org/courses/monkeypox-introduction
  - Français: https://openwho.org/courses/variole-du-singe-introduction
- OpenWHO. Extended training. Monkeypox epidemiology, preparedness and response. 2021.
  - English: https://openwho.org/courses/monkeypox-intermediate
  - Français: https://openwho.org/courses/variole-du-singe-intermediaire
- OpenWHO. Mpox and the 2022-2023 global outbreak
  - English: https://openwho.org/courses/mpox-global-outbreak-2023

Other resources

- WHO mpox outbreak toolbox, July 2024. https://www.who.int/emergencies/outbreak-toolkit/disease-outbreak-toolboxes/mpox-outbreak-toolbox
- 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
- WHO AFRO Weekly Bulletin on Outbreaks and Other Emergencies. https://www.afro.who.int/health-topics/disease-outbreaks/outbreaks-and-other-emergencies-updates

Disclaimer: Caution must be taken when interpreting all data presented, and differences between information products published by WHO, national public health authorities, and other sources using different inclusion criteria and different data cut-off times are to be expected. While steps are taken to ensure accuracy and reliability, all data are subject to continuous verification and change. All counts are subject to variations in case detection, definitions, laboratory testing, and reporting strategies between countries, states and territories.