

WHO updates on mpox-related epidemiology and guidance on prevention, diagnosis and treatment

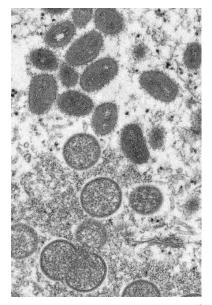
Meg Doherty, MD, MPH, PhD Director, Department of Global HIV, Hepatitis and STI Programmes WHO, Geneva

1 October 2024

Mpox outbreaks are complex, dynamic and caused by different strains of MPXV

- **MPXV** (species renamed recently *orthopoxvirus monkeypox*) is part of the *Orthopoxvirus* genus which includes virus species *orthopoxvirus variola* and *orthopoxvirus cowpox* which cause smallpox and cowpox respectively
- There are two main clades, **clade I** (formerly central African or Congo Basin clade) and **clade II** (formerly West African clade).
- The epidemiology is complex with multiple outbreaks occurring globally
- The reservoir host remains unknown and may include small mammals such as squirrels in endemic settings where monkeys are incidental hosts.
- Clade IIb was first reported and began to spread in Nigeria in 2017. Clade IIb is responsible for the ongoing global outbreak of mpox with most cases linked to lineage IIb.B.1; some cases associated with clade IIb.A
- Clade Ib emerged in South Kivu, DRC, in September 2023 and continues to spread through human-to-human transmission in the DRC and neighbouring countries



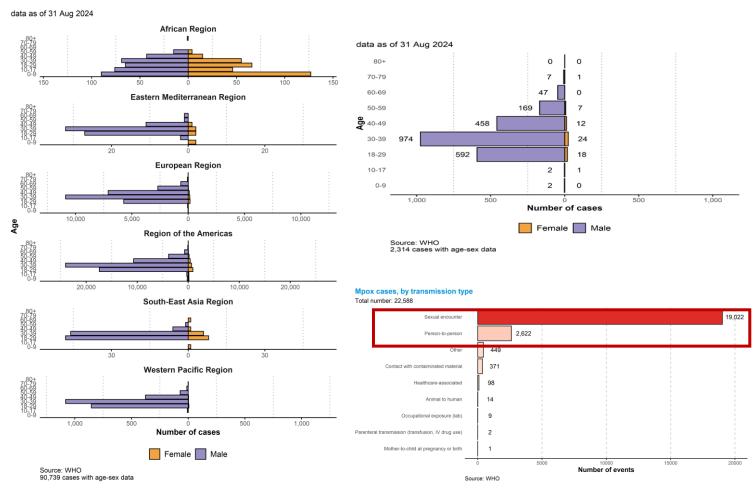






EMERGENCIES

Main characteristics of confirmed mpox cases*, last 6 months



Case	profi	es

From 01 Mar to 17 Sep 2024

	Report	ed values	Unknown or Missing Value
	Yes	No	
Men who have sex with men	251 (86.6%)	39 (13.4%)	2,212
Persons living with HIV	244 (46.3%)	283 (53.7%)	1,975
Health worker	21 (2.5%)	831 (97.5%)	1,650
Travel History	104 (17.3%)	497 (82.7%)	1,901
Sexual Transmission	385 (93.7%)	26 (6.3%)	2,091
Hospitalized ¹	167 (10.3%)	1,449 (89.7%)	886
ICU	0	288 (100.0%)	2,214
Died	1 (0.1%)	1,323 (99.9%)	1,178

May be hospitalized for isolation or medical treatment

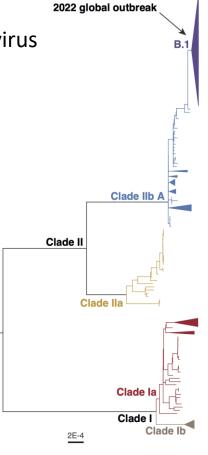




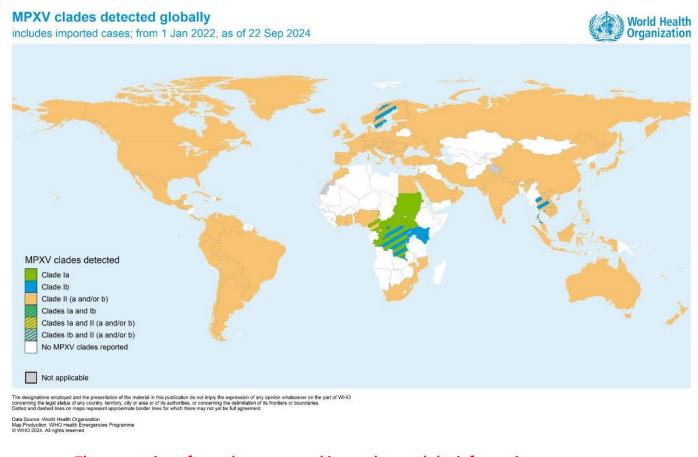
MPXV clade distribution

There are two monkeypox virus (MPXV) clades:

- Clade I (Central Africa):
 subclades Ia and Ib
- Clade II (West Africa):
 subclades IIa and IIb



MPXV



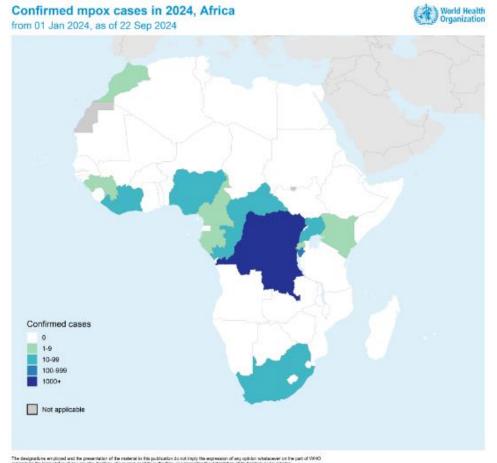
The proportion of samples sequenced is very low and the information available might not be fully representative of the clade distribution





Focus on Africa (Confirmed cases) - 2024

1 January - 22 September 2024



- 17 countries in WHO AFRO affected from 2022-2024
- 14 countries affected in 2024, and are active (reporting cases in the last 90 days)
- 9 countries reported new cases in the past two weeks (Burundi, DRC, Liberia, CAR, Cote' d'Ivoire, Kenya, Morocco, Rwanda, and Uganda)
- Week 38 data (ending 22 Sep): 172 confirmed cases (incomplete)
- Confirmed cases increased by 67% between weeks 36 (263 cases) and 37 (438 cases).
- DRC and Burundi reported 418 (95%) of all confirmed cases (438) in week 37
- Outside AFRO region: Mpox cases reported in Morocco, and India (Clade Ib).

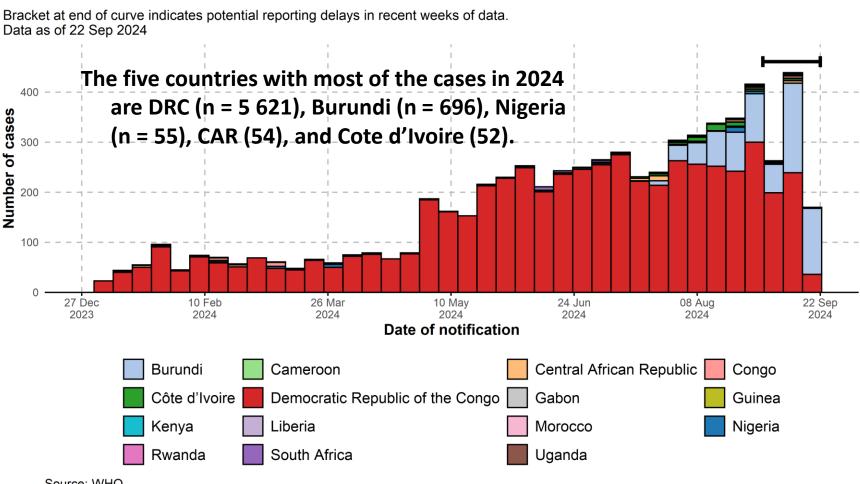
concerning the legal status of any country, birthory, dry or area or of its authorities, or cance. Dotted and doshed lines on maps represent approximate berder lines for which there may n





Epidemic curve of confirmed mpox cases in Africa

Total confirmed cases, 01 January – 22 September 2024



Total lab confirmed cases in 2024

6 580

Total lab confirmed deaths in 2024

32

Countries reporting cases in 2024

15

Confirmed cases

2022: 1,2322023: 1,145

• 2024: 6 times more cases than in 2023

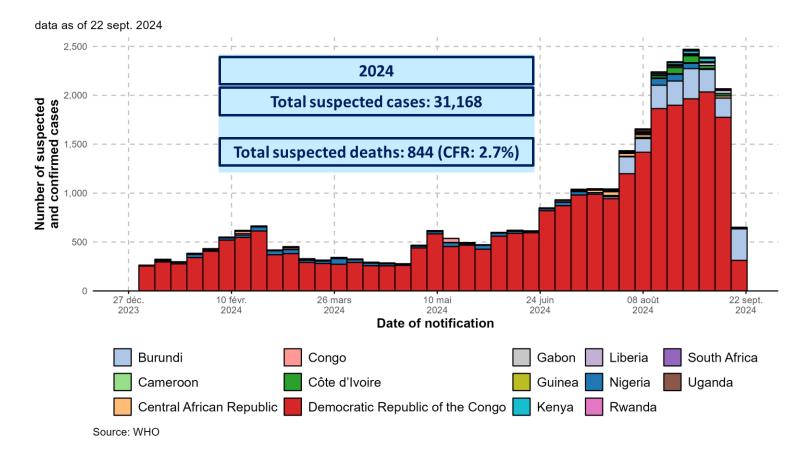
Source: WHO



https://worldhealthorg.shinyapps.io/mpx_global/



Epidemic curve of all mpox cases (suspected + tested) in Africa



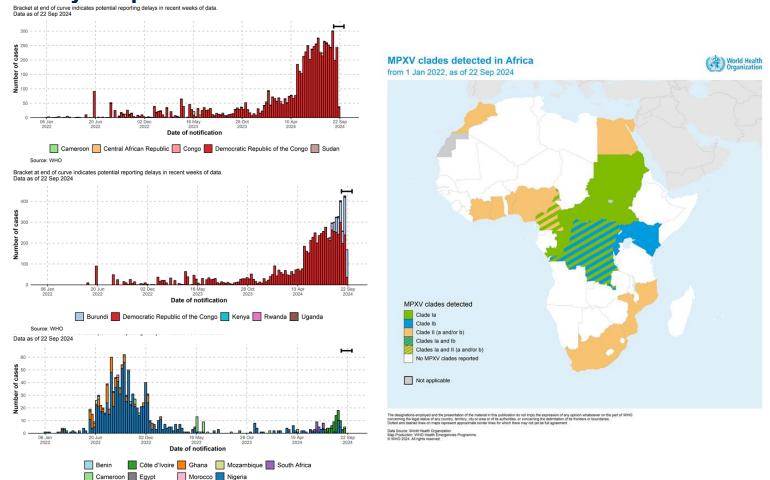
- In response to efforts to improve diagnostic capacity, in 2024 45% of suspected mpox cases in DRC have been tested. Test positivity rate at national level is around 55%, varying between provinces and affected population.
- WHO also presents suspected mpox cases for better understanding of the epidemiological situation on the continent.





Mpox Clade Distribution and Countries reporting Clade Ib

July – September 2024



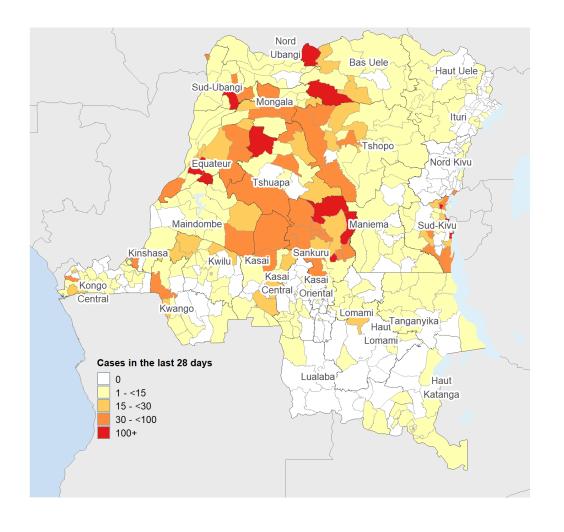
Country	# confirmed cases	# confirmed deaths	Distribution
DRC	Around 3500	22	Mainly South and North Kivu and few cases in Kinshasa
Burundi	707	0	Dispersed in the country
Uganda	22	0	Multiple districts, including capital
Kenya	7	0	Multiple counties, including capital, PoE with Tanzania & PoE with Uganda
Rwanda	6	0	3 in capital; 3 in border district
Sweden	1	0	Travel history to Africa
Thailand	1	0	Travel history to Africa



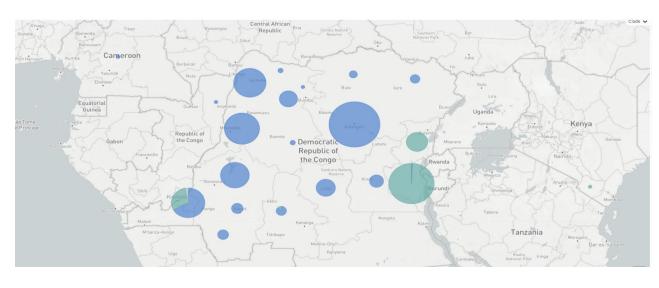


DRC: Two ongoing outbreaks in 2024

DRC: Suspected and confirmed cases (last 4 weeks) From 12 August to 15 September 2024



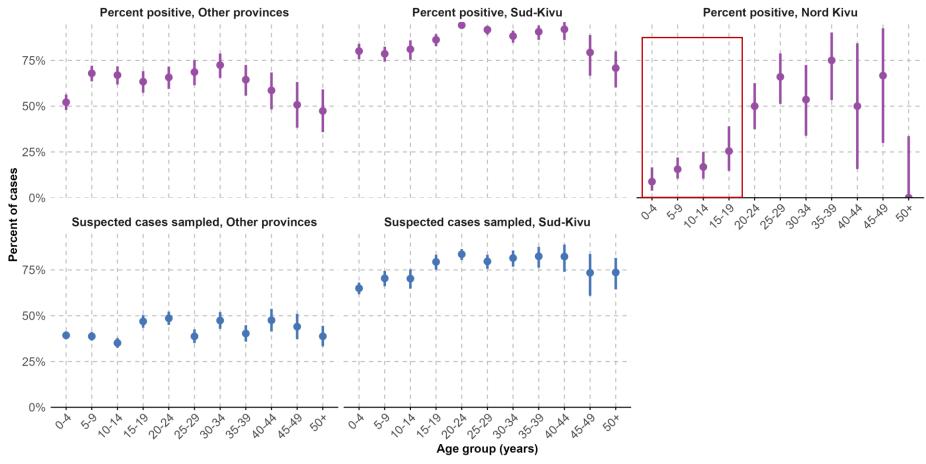
- Cumulatively, 26,791 suspected cases including 5,613 confirmed cases, and 837 suspected deaths (including 25 deaths from laboratory confirmed cases) across the 26 provinces
- In week 37 alone, 1,775 new suspected cases, including 258 suspected deaths
- Both clades la and lb
- The top 5 provinces with the highest number of cases in the last four weeks are Sud-Kivu, Sankuru, Equateur, Sud-Ubangi and Tshopo



The number of MPXV samples sequenced in some regions is low; clade distribution might not be fully representative of ongoing MPXV circulation ⁹

Testing and positivity rate in DRC, 2024

In North Kivu, children are significantly less likely to test positive than adults

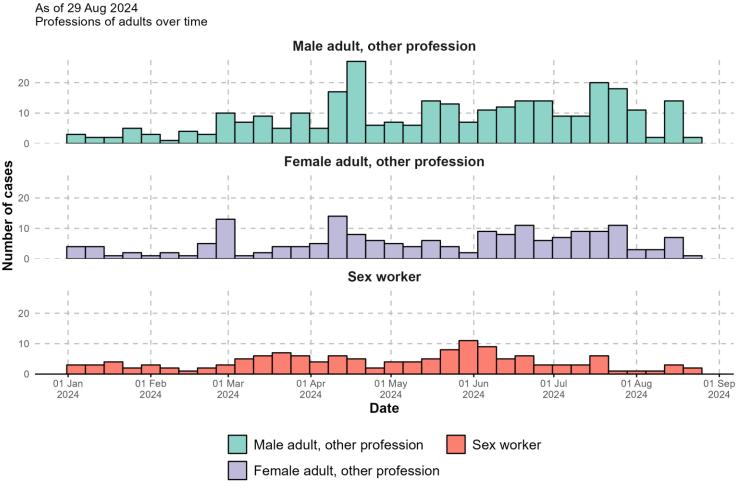






Occupation of cases over time (confirmed cases in Kamituga)

cases 15+ over time



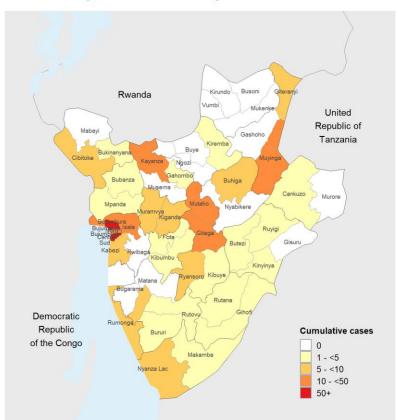




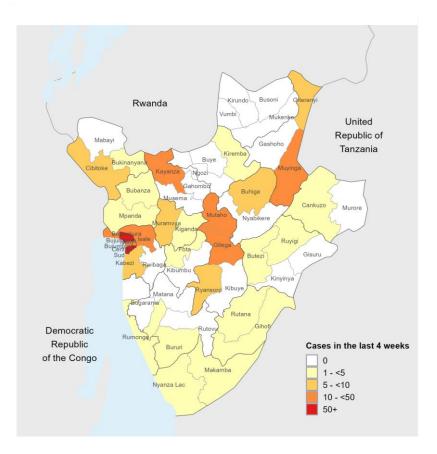
Burundi

2024, as of 15 September

Cumulative mpox cases as of 15 September 2024

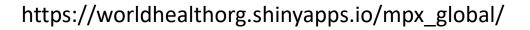


Last 4 weeks, 19 August – 15 September 2024



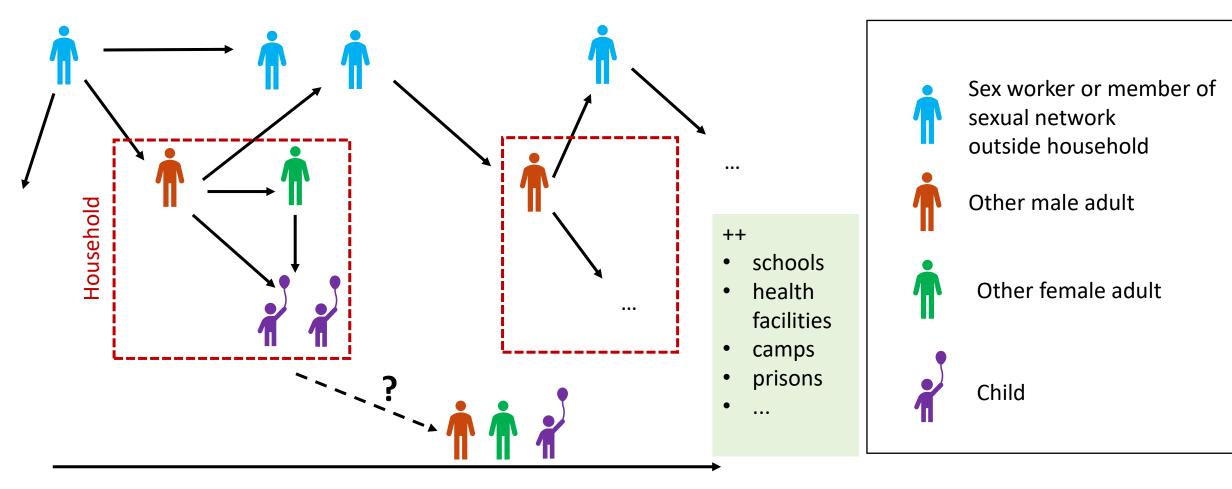
- Mpox outbreak in Burundi was declared on 25 July 2024, driven by clade Ib of the virus.
- As of 24 September, 707 confirmed cases with no deaths have been reported in 29 out of 49 districts.
- 465 cases reported in the last 4 weeks, including 179 in the last week.
- Northern Bujumbura accounts for 44% of cases, with a high positivity rate of 38%, indicating significant community transmission.
- 295 active hospitalized cases are putting pressure on the healthcare system, despite 48% of cases having recovered.







Schematic representation of mpox transmission patterns



TIME

Mpox in DRC and neighbouring countries: implications for sex workers and their networks

Emerging epidemiological investigations suggest rapid transmission of mpox virus is related to interactions with professional sex workers (PSW) in bars within densely populated health areas

Mapping the distribution and describing the first cases from an ongoing outbreak of a New Strain of mpox in South Kivu, Eastern Democratic Republic of Congo between September 2023 to April 2024

- Leandre Murhula Masirika, David F. Nieuwenhuijse, Pacifique Ndishimye,
- [D] Jean Claude Udahemuka, Bilembo Kitwanda Steeven, Nzigire Barhatwira Gisèle,
- D Jean Pierre Musabyimana, Baganda Ntahuma Daniel, Théophile Kiluba wa Kiluba,

Franklin Kumbana Mweshi, Polepole Ngabo, Theophile Tambala, Mazambi Mambo Divin, Bahati Mutalemba Chance, Léandre Mutimbwa Mambo, D Leonard Schuele, Justin Bengehya Mbiribindi, Gustavo Sganzerla Martinez, David J Kelvin,

Gaston Lubambo Maboko, Bas B. Oude Munnink, D Trudie Lang, Frank M. Aarestrup,

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doi: https://doi.org/10.1101/2024.05.10.24307057

Public health advice for sex workers on mpox



18 September 2024

Overview

Mpox is a viral infection that is spreading in many countries. Anyone in close contact with someone infectious is at risk, but some people have an increased risk from mpox and should take additional precautions to protect themselves and their friends and their families from the

Sex workers face unique challenges that increase their risk of exposure to mpox, which requires offering clear, practical and accessible guidance to help to protect their health and the health of their clients

We know that this outbreak is concerning, especially for people who are unwell, their partners, families and communities and for people whose professions require close contact with others, including sex workers, Many sex workers will struggle financially if they are unable to work either by avoiding close contact with clients who have mpox or while isolating because they have suspected or confirmed mpox. Sex workers may also be at increased risk of violence, for example, if they refuse to engage in sex during the outbreak.

This issue is likely to be especially acute if there is little or no social or other types of protection, such as childcare or financial support available

Some sex worker-led organizations established mutual aid schemes during the COVID-19 pandemic, which supported sex workers' livelihoods when they needed to take a pause from work to care for themselves or their families or to limit contact with clients. Similar schemes may be possible in your location. Identifying, establishing and raising awareness about these schemes is essential to create an environment in which sex workers can protect themselves, their families and communities.

This document is based on current understanding of the transmission of mpox and related infection prevention and control measures. It aims to provide useful, common-sense advice for timely response to mpox outbreaks. This advice may evolve as new evidence becomes available. Keep up to date at www.who.int.

Who this document is for

This document includes public health advice for sex workers on protecting themselves, their clients and others in close contact against mpox. It is intended for use by sex workers, sex worker-led organizations, owners and managers of sex-on-premises venues, community leaders, advocates, organizations focused on addressing gender-based violence, health-care providers (especially those delivering sexual health care) and organizations working to promote the health of sex workers.

The information in this document can be used as a basis for formal and informal community conversations, information sessions or producing community information to inform sex workers and their clients on how to protect themselves and others. By following these recommendations and advice, sex workers can reduce their risk of acquiring and spreading mpox, safeguard their health and access necessary health care and support.

The information included here can and should be adapted to the local context and sex work setting, depending on the needs and risks.



https://www.who.int/publications/m/item/public-health-advice-for-sexworkers-on-monkeypox

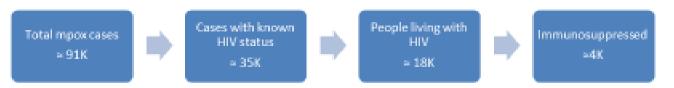


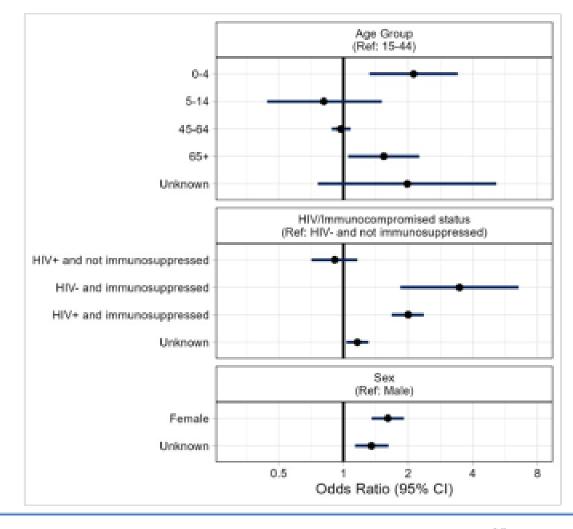
https://www.who.int/news-room/factsheets/detail/mpox#:~:text=Mpox%20is%20an%20infectious%20disease.back% 20pain%20and%20low%20energy.

HIV and mpox – what we know now

Global surveillance

- Around 40% of cases have information about HIV status
- Among those with information around 50% of people with mpox also are people living with HIV
 - HIV prevalence is higher among MSM in almost all settings
 - Sexual contact is a common risk factor for HIV and mpox
 - HIV is not necessarily a risk factor for mpox. The risk factors for mpox infection is the high number of sex partners.
- 20% of people living with HIV have reported immunosuppression
- People living with controlled HIV have similar clinical presentation and outcome of mpox as people without HIV
- People with immune suppression, such as advanced HIV disease,
 present a higher odds for severe disease and death due to mpox.





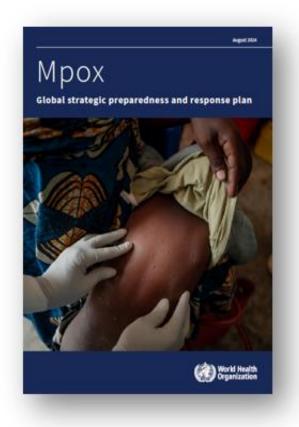


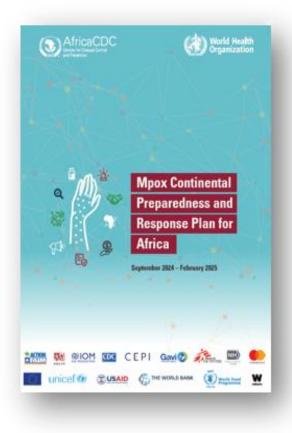


Global and Continental Preparedness and Response Plans

Global SPRP

Africa Continental Plan

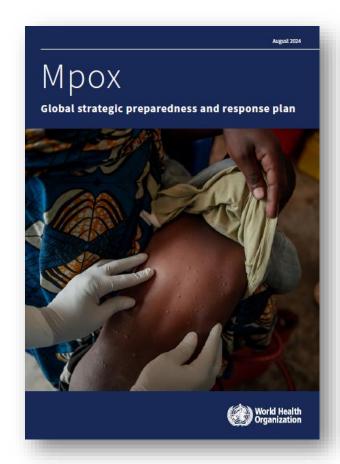








Mpox Comprehensive Strategic Preparedness & Response Plan



RESPONSE STRATEGY



C1 | Strengthened collaborative surveillance and detection Monitor and share information to improve collective understanding of how an outbreak is evolving, identify specific risk and inform response measures



C2 | Enhanced community protection

Raise awareness and empower communities to adopt protective measures



C3 | Safe and scalable care

Provide safe and quality clinical care for individuals and prevent infections in health settings



C4 | Equitable access to medical countermeasures

Ensure equitable access to effective diagnostics, vaccines and therapeutics for mpox response measures



C5 | Emergency coordination

Strengthen coordination between Member States and partners for public health response appropriate for the local context and risk

OBJECTIVES

Rapidly Detect And Control Outbreaks

Advance Mpox Research & Access to Countermeasures

Minimize Animal to Human Transmission



GOAL





Access to countermeasures: Critical activities

https://www.who.int/news/item/13-09-2024-who-and-partners-establish-an-access-and-allocation-mechanism-for-mpox-vaccines--treatments--tests



Vaccines



Therapeutics



Diagnostics



Other relevant health products



Guidelines & Policy

Continued updating of WHO policies on the targeted use of MCMs

- Live reviews of available evidence, including standard of care
- WHO position paper for mpox vaccines (incl. SAGE recommendations)



Research & Development

Global mpox R&D roadmap

- Knowledge gaps
- Research priorities
- Methodological approaches



Manufacturing
/

Access & Allocation

i-MCM-Net partnership

- Access and Allocation Mechanism (AAM) for mpox PHEIC response
- Diagnostics
- Vaccines
- Therapeutics (MEURI)



Supply Chain Management

- Disease Commodity Package Standards for mpox
- Diagnostics pre-procurement and coordination
- Allocations for donations of vaccines (phase 1)
- Data sharing on finance demand procurement and shipping processes
- Delivery of diagnostics
- Delivery planning for vaccines in hot-spot areas



Regulatory Approvals

- EUL process of diagnostics and vaccines and prequalification of vaccines
- Assist regulatory clearance / registration process in LMICs
- Technical support to LMICs for quality & safety monitoring and post-market surveillance (including substandard & falsified products)

Available diagnostic tools for mpox

- **PCR test on skin lesion material** remains the gold standard; there are validated commercially available test kits, and there is currently no manufacturing capacity issue
- POC (PCR-based) solutions exist (eg Cepheid, SD Biosensor).
 - GeneXpert machines (Cepheid) are widely available but manufacturers have limited manufacturing capacity (40k per quarter pre-PHEIC, 250k tests per quarter post-PHEIC), tests are costly (20 USD) and not fully adapted to the African setting (detect OPXV and MPXV clade II, but not clade I)
 - Conversations ongoing with SD Biosensor
- Antigen RDTs are available on the market but they showed insufficient accuracy in test evaluations (very specific but poorly sensitive).
- **Serology** is hard to set up at reference laboratories, so **antibody RDTs** claiming to be able to distinguish monkeypox virus specific antibodies **are likely to be unreliable**
- Results from second round of POC test evaluations by FIND, focusing on POC solutions expected mid-2025; other rapid evaluations ongoing







Safe and scalable care

Priority activities:

- 1. Support MS to establish mpox care pathways supporting early recognition, and provide safe care at health facility or at home with emphasis on IPC and WASH.
 - Home care for those with mild disease, not at risk of severe disease, and where IPC measures can be adhered to at home.
- 2. Support MS to provide optimal supportive care (skin care, nutrition, hydration, treatment of co-infections, eye care, pain relief).
- 3. Target areas with ongoing transmission to stop outbreak and surge treatment capacities including staff, essential supplies in coordination with MOH and partners. Where there is no transmission, focus on preparation for cases.
- 4. Ensure essential health service delivery is not compromised.
- 5. Ensure last mile delivery of essential medicines and supplies to safely care for mpox patients.

Tools available to support MS in implementation of activities

- 1. Mpox IPC & WASH Health care facility rapid assessment tool to identify gaps and prioritize areas to focus on to mitigate & control transmission within facilities. PPE posters for health workers.
- 2. Home care and isolation operational guidance. Imminent publication.
- 3. Mpox clinical Management and IPC Guideline (under revision) to include new recommendations in IPC interventions, antivirals and risk factors/disease severity.
- 4. Tools for screening, support with differential diagnosis, and clinical assessment under development. Imminent publication.
- 5. Essential list of medicine and supplies are available to MS with quantification, to support MS be ready to respond. Last mile distribution needs to be ensured.
- 6. Webinar 18 September 2024, with over 2000 participants on clinical care from experts around the world. More in depth webinar series to start next week on safe, scalable clinical care.





Vaccine deployment strategies to control the outbreak

Transmission via close contacts including sexual contacts

Incubation period about two weeks

Need to define hot spots

Limited number of doses, at least in the short to mid term



Phased Vaccination Strategies

Stop Outbreak: To interrupt known chains of transmission by targeting contacts of incident cases with onset in the previous 2-4 weeks, and healthcare workers/frontline workers (HCWs/FLWs) in areas with casesThey are the most likely to transmit the disease. It may help reduce transmission by breaking chains of infection, making it more efficient in preventing cases directly linked to known cases.

Expand Protection: To limit additional potential spread in affected communities (after phase), provided additional doses are available. It targets individuals at high risk of severe disease—based on local epidemiology—in affected areas. This strategy aims to reduce local transmission by vaccinating a larger portion of the target population (aiming at >90% coverage), providing wider community protection, though it requires additional doses, resources, and logistics.

Protect for the Future: To increase levels of population immunity in areas

at risk of outbreak expansion and or future outbreaks. It targets all populations recommended by SAGE when and as doses become available.



Mpox MCM-Net in response to the PHEIC

Fast-tracked Research & Development

R&D to develop medical countermeasures against priority pathogens









Mpox Research and Innovation

Aligning Research Response with Outbreak Goals

Scientific conference

Date: 29-30 August 2024 from 13:00 to 18:00 CET



Procurement, demand aggregation, supply management, allocation

The right countermeasures procured from scalable manufacturing platforms in the right volumes, equitably and timely distributed





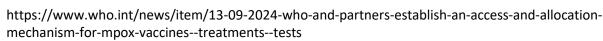
Demand Forecast and Aggregation Supply Availability and Access

Strategic Allocation

Regulatory oversight, including PQ/EUL process for Vx, Tx, Dx



https://www.who.int/initiatives/i-mcm-net



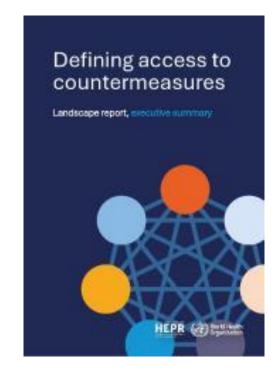


Mpox Vaccine Donor Pledges as of 27 Sept 2024

Mpox vaccine dose pledges as of 27 September 2024

Donor	Amount and type of vaccine pledged
Japan	3 million LC16
European Union*	525,800 MVA-BN
United States of America	1 million MVA-BN
Bavarian Nordic	55,000 MVA-BN
Emergent BioSolutions™	50,000 ACAM2000
Canada	200,000 MVA-BN
Gavi/UNICEF	1 million MVA-BN

^{*} Austria, Belgium, Croatia, Cyprus, Germany, France, Luxembourg, Malta, Poland, Spain, HERA (European Commission)





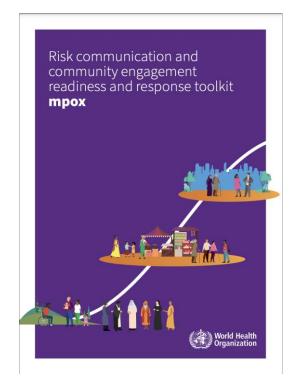


Critical RCCE-IM ongoing activities

- Map out priority and vulnerable population groups, key partners, stakeholders, including CSOs with immediate response capacity to optimize community engagement.
- Establish/reactivate coordination mechanisms at national level and in high-risk subnational areas. Activate community task forces and allocate funding.
- Prepare to address respective **communication needs** of identified priority groups through adequate channels in appropriate forms and formats.
- Develop and test evidence-based, tailored key messages for key target groups on different dimensions of mpox (transmission, protection, vaccination etc.)
- Use **social-behavioural data** and community insights from feedback mechanisms to develop/update/adapt interventions based on the needs of the communities.
- Engage with local networks and train dedicated risk communication, community engagement and infodemic management teams. Include community outreach workers, community leaders and sexual health service providers.

Develop/update the RCCE-IM strategy, work plans, monitoring mechanisms and budgets while ensuring RCCE-IM is incorporated into the IMT/national outbreak response coordination mechanisms, strategies, and plans.





Interim Guidance

 Interim guidance for risk communication and community engagement for mpox outbreaks

Toolkit - April 2024

 Risk communication and community engagement readiness and response toolkit: mpox

Q&A and Fact Sheet – updated August 2024

- Mpox Q&A
- Mpox factsheet

Community protection: Emerging evidence

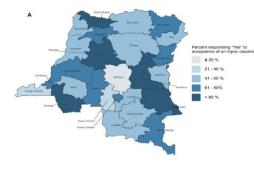
- Low awareness and info gaps concerns around the mpox awareness (low level), misconceptions, rumours, false religious beliefs, confusion between mpox and other diseases, risk underestimation, information gaps SSHAP Roundtable June 24
- Vulnerable populations needing targeted and tailored interventions Key Considerations: Mpox, mining, and vulnerabilities of women and children in eastern DRC - SSHAP - May 2024
- Preliminary evidence suggests general acceptance and demand for an mpox vaccine in DRC (61 %) demonstrated need for enhanced community engagement before vaccination of targeted groups <u>Acceptance of an Mpox Vaccine in the Democratic Republic of the Congo: Results from a Nationwide Phone Survey Aug 24</u>
- Low awareness and risk perceptions- A WHO global message testing campaign conducted in 14 countries selected in the 5 WHO regions, revealed that 46% of 807 responders from Cameroon, DRC, Nigeria and South Africa [8] have heard about mpox, while 40% reported to have been concerned about mpox.



Perspective

Mpox in Pregnancy — Risks, Vertical Transmission, Prevention, and Treatment

Jean B. Nachega, M.D., Ph.D., M.P.H., Emma L. Mohr, M.D., Ph.D., Pradip Dashraath, M.B., B.S., M.Med., Placide Mbala-Kingebeni, M.D., Ph.D., Jean R. Anderson, M.D., Landon Myer, M.D., Ph.D., Monica Gandhi, M.D., David Baud, M.D., Ph.D., Lynne M. Mofenson, M.D., and Jean-Jacques Muyembe-Tamfum, M.D., Ph.D., for the Moso Research Consortium (MposReC)







This brief presents considerations for contextualising and responding to the mpox outbreak in the mining towns of South Kivu province in the Democratic Republic of the Congo (DRC). The brief focuses on women and children living and working in artisanal...

and children in eastern

CENTRAL AND EAST AFRICA HUB

202



This brief presents social and political considerations for the design and implementation of vaccination-related risk communication and community engagement (RCCE) strategies for mpox in the eastern Democratic Republic of the Congo (DRC).

CENTRAL AND EAST AFRICA HUB

CHAD

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Identifying community representatives

Community

Refers to a group of people connected by common characteristics, such as geographic location, age, gender, profession, ethnicity, faith, shared vulnerability or risk, or shared interests and values.

Community engagement

The collaborative process that involves people in understanding the risks they face and includes communities in developing health and response practices that are acceptable and workable for them. The goal of community engagement is to empower communities and to develop shared leadership throughout the emergency response cycle.

Tool 7: Community listening and feedback systems for mpox outbreaks



This tool is designed to provide support for collecting and using community listening dat including social listening and community feedback for mpox outbreaks.

Community listening encompasses various approaches to collecting data to identify current narratives, questions, rumours, misinformation, levels of trust and other relevant factors from at-risk populations. It can help to track and monitor trends, changing attitudes towards health authorities and interventions, and identify newly emerging concerns.

On- and offline sources should be used for community listenine, Offlines ources of data can include community feedback systems, qualitative interviews, focus group discassions, farificings from social-behavioural research, television and radio. Online sources can include social media, websites, chatrooms, etc. Al community listening sources have advantages, biases and limitations which should be documented when reporting data.

To collect community leedback for mpos, identify community representatives that are closely involved with readiness, response, and immunization activities on orwho are from or represent affected communities. CSOs that are already involved in related health advocacy or service provision (for example those catering to affected communities such as gay and biseaud men, see workers or young people involved in sexual health issues) are good sources of community feedback as these groups can provide targeted input and help reach specific demographics more effectively.

Research conducted during the global mpox outbreak by WHO highlighted the central role of geospatial networking applications in reaching and engaging communities. Close collaboration with these applications is key for readiness and respons to emerging infections transmitted in these sexual

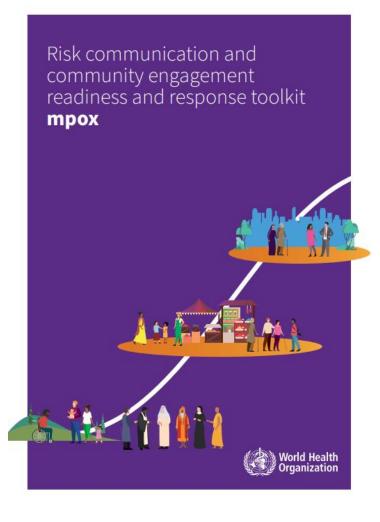
Many countries have country coordinating mechanisms under the Global Fund to Fight AIDS, Tuberculosis and Malaria or community advisory boards for HIV/AIDS that can be activated for an mpos response as sources of data for community listening.

If resources are available, look for public health advi on mpox or community outreach at community or facility-based services (such as LGBTQ+ housing, harm reduction services, and gender-affirming care, and popular focal venues like parties, bars, and nightclubs), which can serve as influential platforms for disseminating health information and gathering feedback.

To effectively use community listening in managing an outbreak of moor, health authorities and all involved partners should use the full range of on and offline hool to collect, monitor and analyse public narrative and conversations related to mpox. These tools may vary significantly from context to context and based on specific community from context to context and based on specific community. Particular attentions should be given to key populations and themes of missinformation, while also identifying information voids such as the sudden increase in searchs for "impox syngtoms" or "how do increase in searchs for "impox syngtoms" or "how do increase in searchs for "impox syngtoms" or "how do

Setting up a dedicated online social listening system involves defining objectives, selecting relevant social media platforms, identifying mpox-related keywords

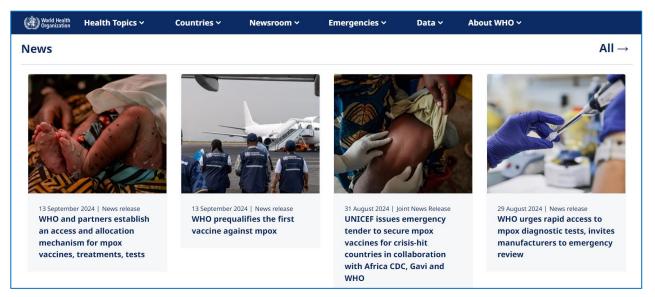








Tools and Resources:







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



THANK YOU

