

Latest Global Update on the Monkeypox outbreak including implications for PLHIV

Global overview of current monkeypox epidemiology & response

3 June 2022

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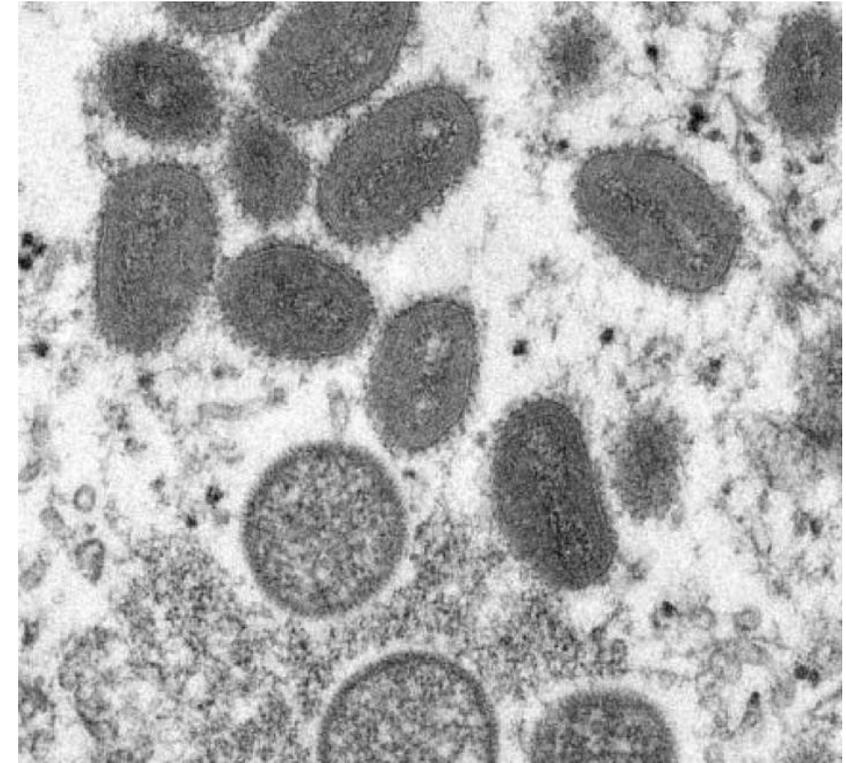
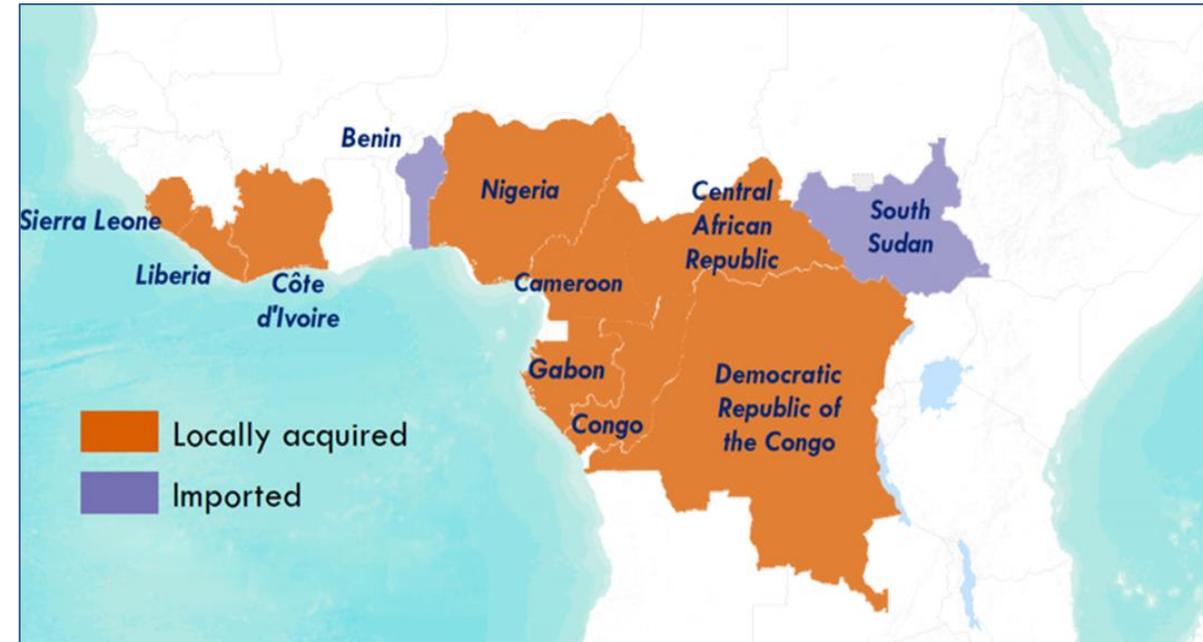


Photo: CDC

Monkeypox

- Monkeypox is a **viral zoonotic disease**
- Part of the *Orthopoxvirus* genus which includes variola virus (smallpox) and cowpox virus
- **Endemic in 9+ African countries**
- There are two main strains, one which typically has caused more severe illness (Congo clade) than the other (West African clade).
- **Only the West African clade has been identified in the multi-country outbreak.**
- The reservoir host is still unknown, although rodents incidental hosts and play a part in transmission, typically through hunting, preparation or consumption of meat (game)



Monkeypox in endemic countries

- In 2022, cases have been reported by Cameroon, Central African Republic, the Democratic Republic of the Congo, Nigeria, and the Republic of the Congo.
- WHO receives reports through established surveillance (IDSR) in endemic countries in the African region.
- Laboratory strengthening in endemic countries is a priority to enable confirmation of suspected cases.
- Working closely with African countries, regional institutions, technical and financial partners, **WHO is supporting efforts to bolster laboratory diagnosis, disease surveillance, readiness and response actions to prevent further infections.**
- Providing expertise through technical guidance on testing, clinical care, preventing and controlling infections and educate the public about monkeypox and its risks, and how to collaborate with communities to support disease control efforts.



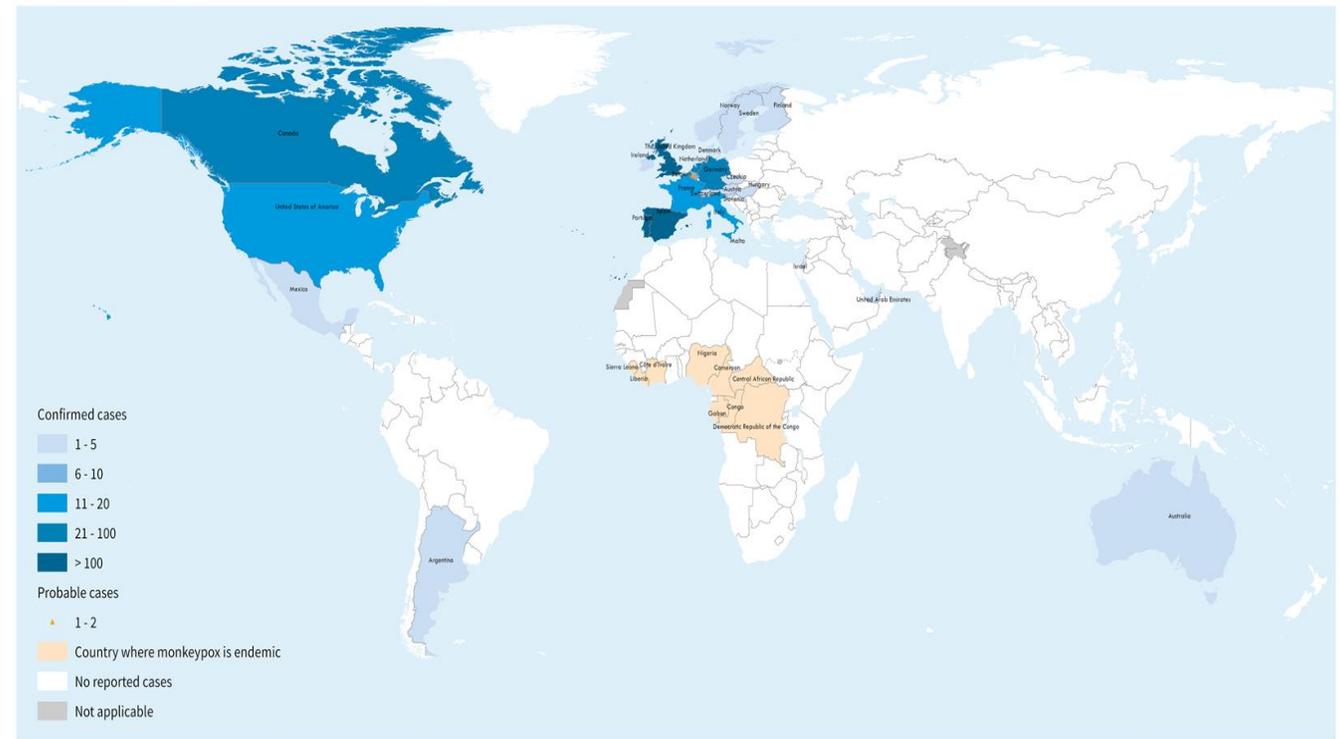
Cases of monkeypox in non-endemic countries

13 May to 1 June 2022

Region	Country	Confirmed	Probable
AMRO	Argentina	2	
	Canada	26	
	Mexico	1	
	United States of America	18	
EMRO	United Arab Emirates	4	
EURO	Austria	1	
	Belgium	10	2
	Czechia	5	
	Denmark	2	
	Finland	1	
	France	17	
	Germany	44	
	Hungary	1	
	Ireland	4	
	Israel	2	
	Italy	14	
	Malta	1	
	Netherlands	26	
	Norway	1	
	Portugal	119	
	Slovenia	2	
	Spain	142	
	Sweden	4	
	Switzerland	4	
	The United Kingdom	190	
WPRO	Australia	2	
Total	26 countries	643	2

Confirmed and probable cases of monkeypox in non-endemic countries

(since 13 May 2022, as of 1 June 2022 16:00 CEST)



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

Data Source: World Health Organization
Map Production: WHO Health Emergencies Programme
Map Date: 1 June 2022



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Monkeypox in non-endemic countries

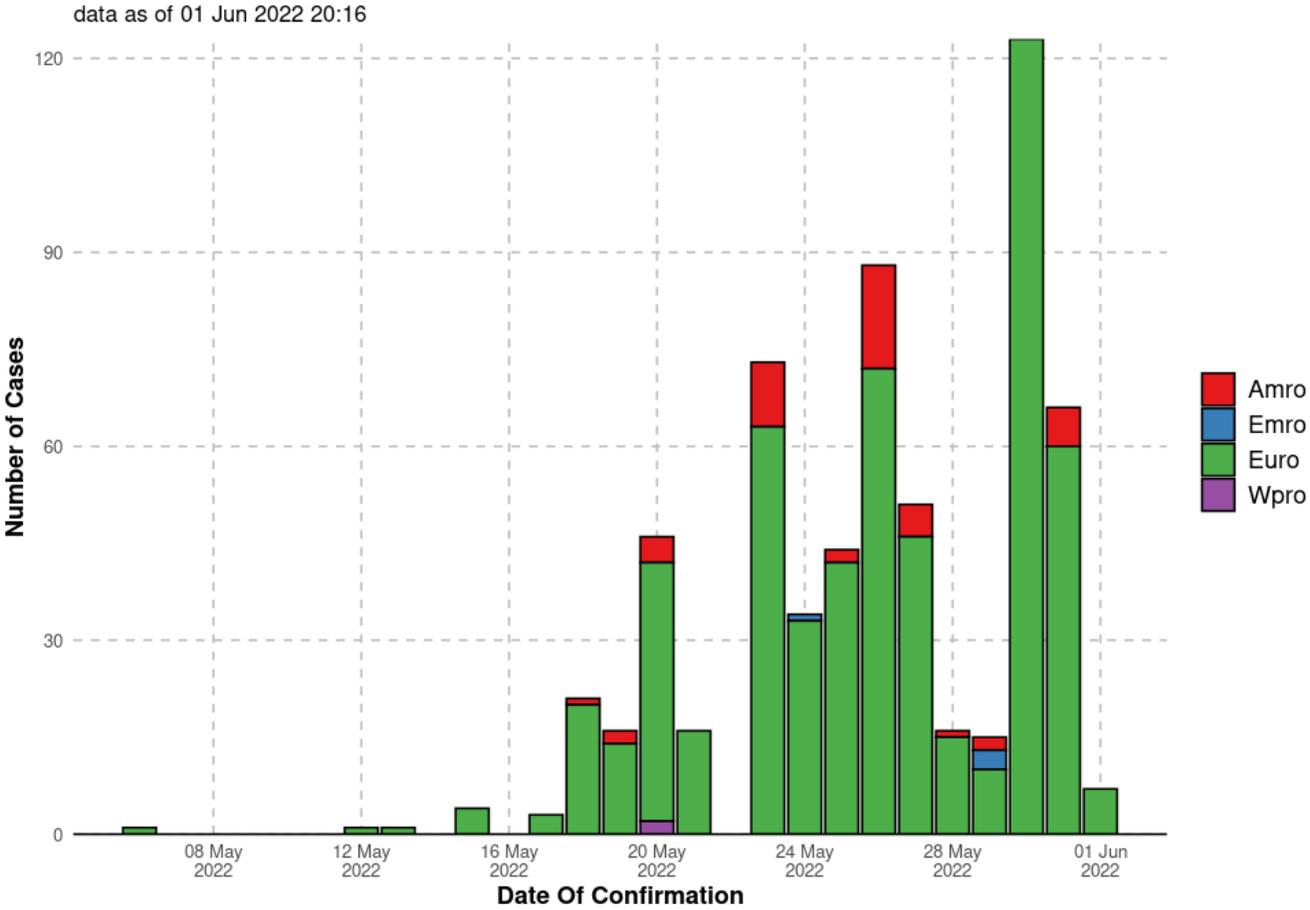
- **Since 13 May 2022**, monkeypox has been reported to WHO from **26 Member States that are not endemic for monkeypox, across four WHO regions (as of 1 June)**
- Public health outbreak investigations are ongoing: including **extensive case finding and contact tracing, laboratory investigation, clinical management and case isolation**
- The factors leading to this outbreak are not yet known. Initial cases have presented through primary care or sexual health services
- The outbreak of monkeypox in many non-endemic countries at once is highly unusual. Early epidemiology of initial cases notified to WHO by countries shows that cases have been largely, but not exclusively, been reported amongst men who have sex with men (MSM)
- **Outreach activities are being put in place for the communities identifies to be at risk; at the present time includes outreach to social networks of MSM and their close contacts, health workers and laboratory workers.**
- Wide geographic scope of many sporadic cases indicate the widespread human to human transmission is underway; virus may have been circulating unrecognized for several weeks/months.

Monkeypox



<https://www.who.int/health-topics/monkeypox>

Epidemic Curve by region and date of confirmation (public database)

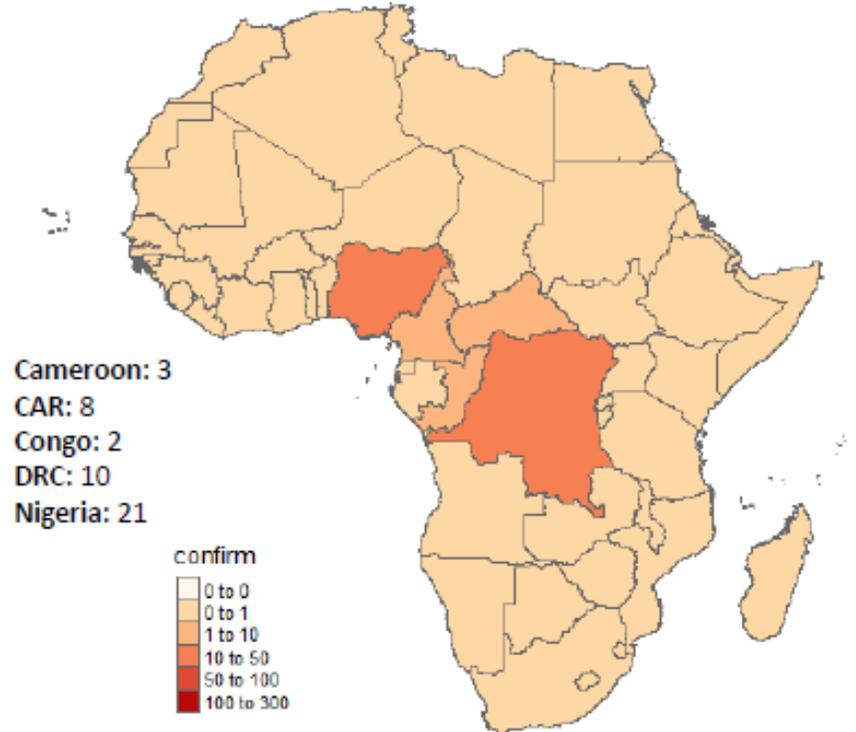


Source: global.health linelist - official reporting only.
where dates are not available, showing date of database entry

Summary of the Situation in AFRO – 2022 Jan 1 - present

Confirmed cases

- 44 cases confirmed in five countries



Endemic / AFRO countries

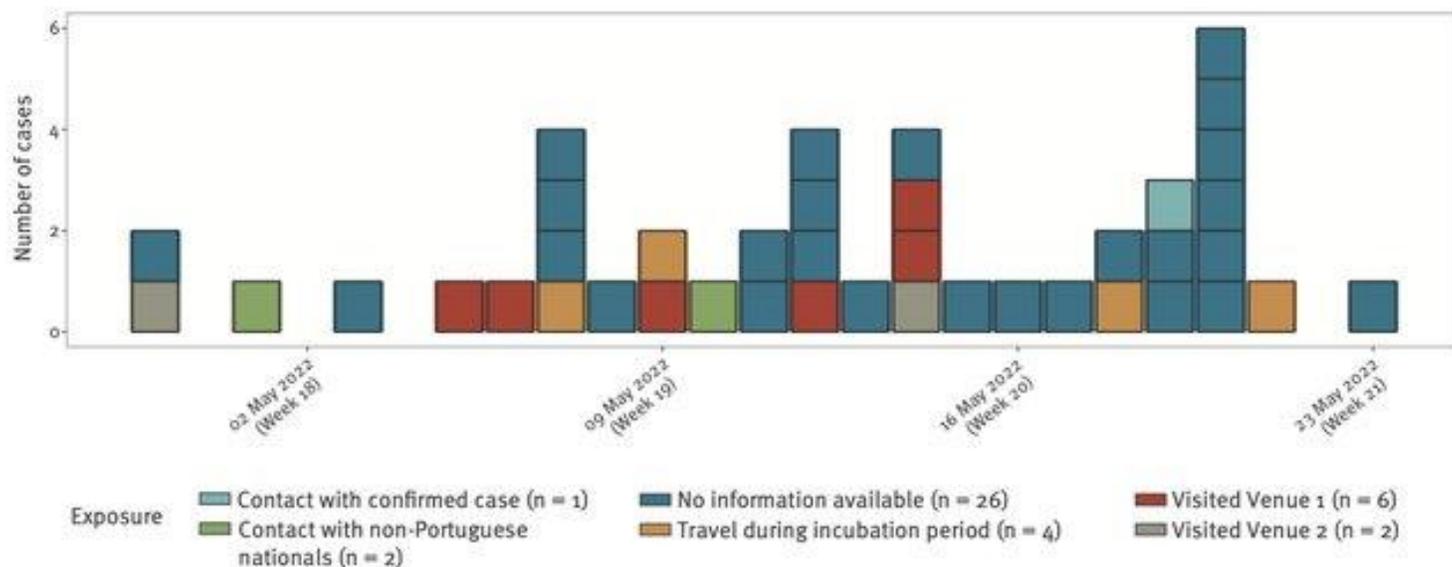
Country	Confirmed cases	Suspected cases	Deaths
Cameroon	3	25	2
Central African Republic	8	17	2
Republic of Congo	2	7	3
Democratic Republic of the Congo	10	1284	58
Liberia		4	0
Nigeria	21	66	1
Sierra Leone		2	0
Cumulative	44	1405	66

Source: Update on the human monkeypox situation in the African Region 30 May 2022

Results from Portugal



FIGURE
Confirmed monkeypox cases by date of symptom onset and exposure, Portugal, 29 April–23 May 2022 (n = 41)^a



^a Only cases with data available for both date of symptom onset and exposure.

^a 'Visited Venue 1/2' refers to confirmed cases who have been linked because of visiting the same venues. 'No information available' refers to no travel or contact data available. Travel to Spain, United Kingdom and Brazil was reported during the incubation period.

TABLE 2

Demographic and clinical characteristics of confirmed monkeypox cases, Portugal, 1–23 May 2022 (n = 27)

Variables	Confirmed monkeypox cases n = 27
Sex	
Male	27
Female	0
Age (years)	
20–29	7
30–39	13
40–49	3
50–59	1
Unknown	3
Residence	
Lisbon and Tagus Valley	25
North	1
Algarve	1
Symptoms^a	
Exanthema	14
Inguinal lymphadenopathy	14
Fever	13
Asthenia	7
Headache	7
Genital ulcers	6
Genital vesicles	6
Anal ulcers	5
Myalgia	5
Anal Vesicles	4
Cervical lymphadenopathy	4
Axillary lymphadenopathy	2
HIV infection^a	
Yes	14
Exposures during the 21 days before onset of symptoms^a	
Travel abroad	4
Contact with animals	3
Contact with people with similar symptoms	1
Hospital admission	
Yes	3

^a Some cases did not report on certain symptoms or clinical features. Missing information for fever, asthenia, headache, cervical lymphadenopathy, axillary lymphadenopathy (n = 1 case). Missing information for HIV infection (n = 1 case). Missing information for myalgia (n = 2 cases); for exanthema and genital ulcers (n = 12 cases); for inguinal lymphadenopathy (n = 13 cases); for anal ulcers and anal vesicles (n = 14 cases); for contact with animals (n = 4 cases); for contact with people with similar symptoms (n = 17 cases).

Modelling the impact of containment

Keep Calm and Carry On: Projected Case Burden and Duration of the 2022 Monkeypox

Outbreak in Non-endemic Countries

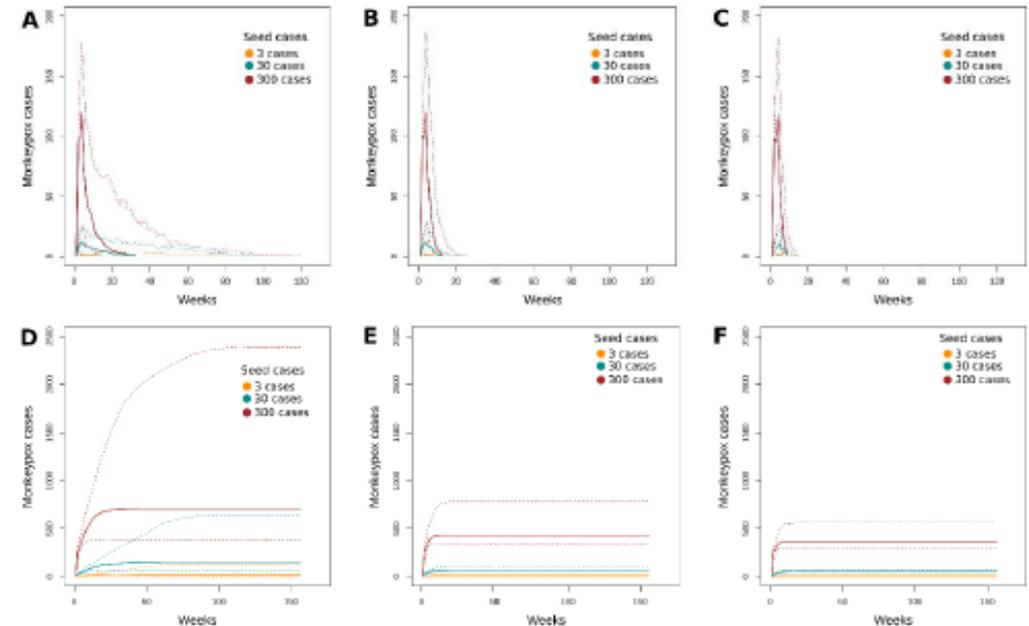
Donal Bisanzio DVM PhD,¹ Richard Reithinger PhD¹

¹ RTI International, Washington, DC, USA.

Table 1. Estimated median number of secondary cases and median duration of outbreak

Primary seed cases	Secondary cases (95% CI)		
	No interventions	Contact tracing	Contact tracing and ring vaccination
3 cases	18 (0–124)	5 (0–16)	4 (0–10)
30 cases	118 (43–609)	40 (14–66)	25 (6–41)
300 cases	402 (87–2092)	125 (45–479)	56 (4–259)
	Outbreak duration (in weeks) (95% CI)		
3 cases	23 (4–77)	9 (3–20)	7 (4–15)
30 cases	37 (20–99)	14 (8–26)	10 (6–15)
300 cases	37 (19–121)	14 (10–26)	9 (6–15)

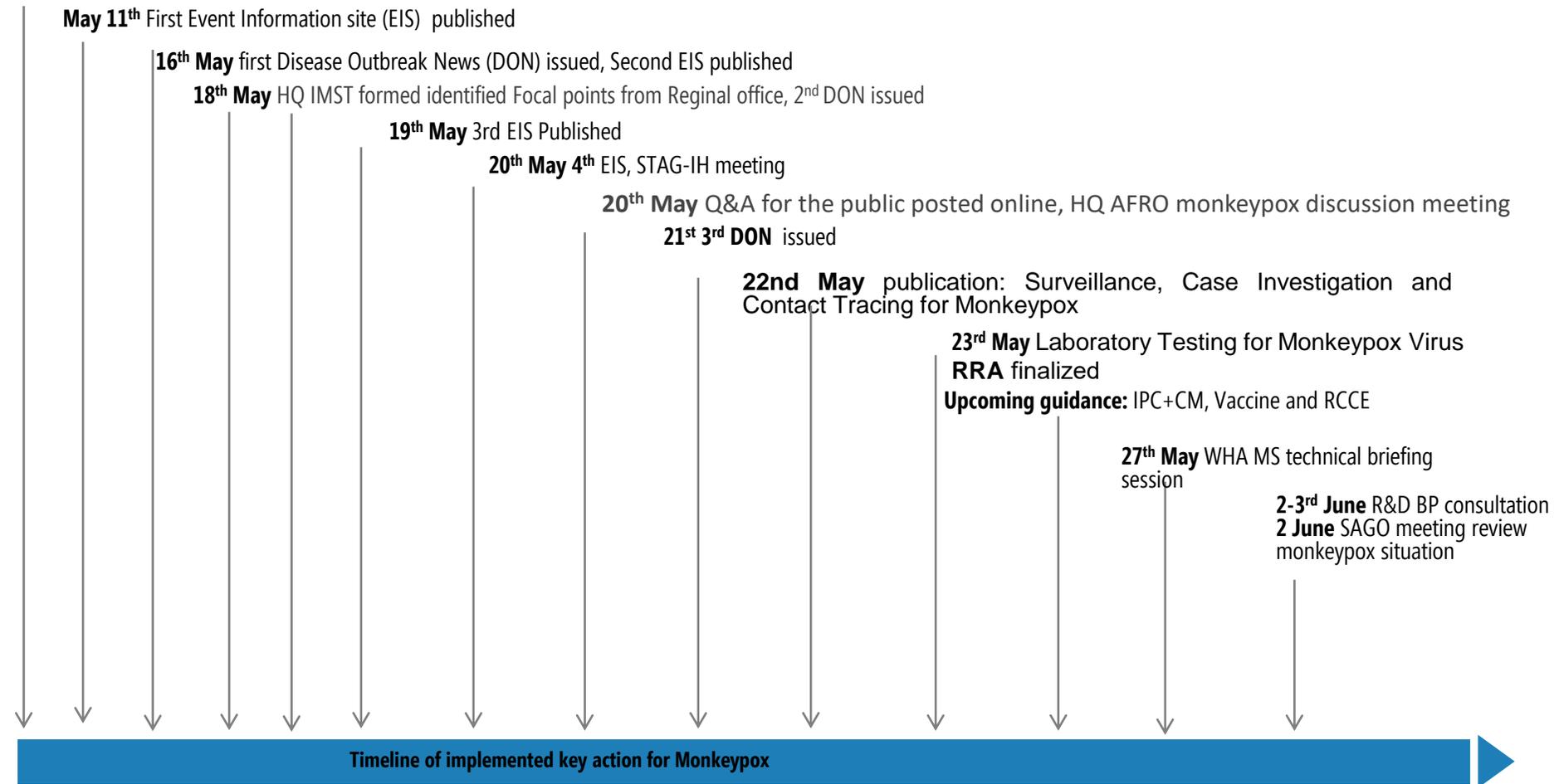
Figure 2. Epidemic curves and cumulative case count of simulated monkeypox outbreaks using the MPX-IBM. Panels A – C: Epidemic curves showing the number of primary and secondary monkeypox cases over time following seeding of 50 million in silico population with 3, 30, or 300 cases, comparing baseline scenario (Panel A) to intervention scenario 1 (Panel B) and intervention scenario 2 (Panel C). Panels D – F: Cumulative case count showing the number of primary and secondary monkeypox cases over time following seeding of 50 million in silico population with 3, 30, or 300 cases, comparing baseline scenario (Panel D) to intervention scenario 1 (Panel E) and intervention scenario 2 (Panel F).



Broken lines: 95% confidence interval.

Timeline of WHO key actions

7 May 2022, WHO was informed of a confirmed case of monkeypox with no secondary cases, followed by unrelated family cluster and cases among MSM. .



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WHO monkeypox research: What are the knowledge gaps and priority research questions?

2 - 3 June 2022

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Monkeypox is an emerging infectious disease caused by a virus transmitted to humans from infected animals, most commonly rodents. It can be spread to other people but person-to-person transmission alone cannot easily sustain an outbreak. The clinical presentation is similar to that seen in the past with smallpox but less severe. Smallpox was eradicated worldwide in 1980; however, monkeypox still occurs sporadically in parts of Central and West Africa, near tropical rainforests. Typical care, most patients intended for heal

*Please note: This relevant health is To learn more an extended trainin

The conte tailored for endemic, not reflect outbreak

Self-paced Language: En Basic (Basque) monkeypox

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Clinical management and infection prevention control guidance for monkeypox: interim guidance

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Monkeypox

20 May 2022 | Q&A

What is monkeypox? (+)

Where is monkeypox typically found? (+)

What are the symptoms of monkeypox? (+)

Can people die from monkeypox? (+)

How does monkeypox spread from animals to humans? (+)

How does monkeypox spread from person to person? (+)

Who is at risk of catching monkeypox? (+)

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Monkeypox: what you need to know (infographic) >

Surveillance, case investigation and contact tracing for Monkeypox

Interim guidance
22 May 2022

World Health Organization

- Key points**
- There is currently a multi-country outbreak of monkeypox in several regions of the world, the full extent and impact of which remains unclear. The overall goal of surveillance, case investigation and contact tracing in this context is to break chains of human to human transmission and stop the outbreak.
 - The key objectives of surveillance and case investigation for monkeypox in the current context are to rapidly identify cases and clusters in order to provide optimal clinical care; to isolate cases to prevent further transmission; to identify and manage contacts; to protect frontline health workers; and to tailor effective control and prevention measures.
 - The situation is rapidly evolving and WHO expects there will be more cases of monkeypox identified as surveillance expands in non-endemic countries. Immediate actions focus on: informing those who may be most at risk for monkeypox virus (MPXV) infection with accurate information; stopping further spread; and protecting frontline workers.
 - Clinicians should report suspected cases immediately to public health authorities.
 - Probable and confirmed cases of monkeypox should be reported immediately to WHO through IHR national focal points (NFPs) under the International Health Regulations (IHR 2005).
 - If monkeypox is suspected, case investigation should consist of clinical examination of the patient with appropriate PPE, questioning the patient about possible sources of infection, and safe collection and dispatch of specimens for MPXV laboratory examination.
 - In the current context, as soon as a suspected case is identified, contact identification and contact tracing should be initiated.
 - Contacts should be monitored at least daily for the onset of any signs/symptoms for a period of 21 days from last contact with a patient or their contaminated materials during the infectious period.
 - Quarantine or exclusion from work are not necessary during the contact tracing period as long as no symptoms develop.

Introduction

This guidance serves to provide interim recommendations for the surveillance, case investigation and contact tracing for human monkeypox in the context of the current multi-country outbreak in several regions of the world (May 2022). This is the first time that cases and apparent sources and chains of transmission have been reported in non-endemic countries without epidemiological links to endemic areas of West Africa; the full extent and impact of the outbreak remains unclear. The overall goal of surveillance, case investigation and contact tracing in this context is to break chains of human to human transmission and stop the outbreak. This guidance will be updated as more specific information about the epidemiology of this outbreak becomes available.

Case Definitions

Laboratory testing for the monkeypox virus

Interim guidance
23 May 2022

World Health Organization

- Key points**
- The goal of the global response to the multi-country outbreak of monkeypox is to stop the outbreak.
 - Any individual that meets the suspected case definition for monkeypox should be offered testing.
 - The recommended specimen type for diagnostic confirmation of monkeypox in suspected cases is skin lesion material, including swabs of lesion exudate, roofs from more than one lesion, or lesion crusts.
 - Laboratory confirmation of specimens from a suspected case is done using nucleic acid amplification testing (NAAT), such as real-time or conventional polymerase chain reaction (PCR). NAAT can be generic to orthopoxvirus (OPXV) or specific to monkeypoxvirus (MPXV, preferable).
 - All manipulations in laboratory settings of specimens originating from suspected, probable or confirmed cases of monkeypox should be conducted according to a risk-based approach.
 - In addition to NAAT, sequencing is useful to determine virus clade and to understand epidemiology. Member States are strongly encouraged to share MPXV genetic sequence data in available and publicly accessible databases.
 - Member States are requested to immediately notify WHO under the International Health Regulations (IHR) 2005 of positive laboratory results, including a generic OPXV laboratory test that awaits confirmation.
 - WHO can assist Member States to access testing through referral. If the need arises, Member States can contact the relevant WHO Regional Office.

Introduction

Monkeypoxvirus (MPXV) is a double-stranded DNA virus, a member of the orthopoxvirus genus within the Poxviridae family. Poxviruses cause disease in humans and many other animals; infection typically results in the formation of lesions, skin nodules or disseminated rash. Other orthopoxvirus (OPXV) species pathogenic to humans include cowpox virus, and variola virus (causing smallpox, which has been eradicated). Vaccinia virus is also an OPXV that has been used to vaccinate people and was a key tool for the eradication of smallpox, achieved in 1980. MPXV is named due to its initial detection in monkeys. MPXV can primarily be found in rodents, however the reservoir is undetermined. There are two known clades of MPXV, one endemic in Western Africa and one in the Congo Basin region.

The typical presentation of monkeypox is well described and consists of a short febrile prodromal period followed by progressive development of a classic rash with indurated and umbilicated (centrally depressed) lesions, starting on the head or face and progressing to the limbs and trunk. Lesions progress all at the same stage from macules, to papules, to vesicles, to pustules and eventually to crusts which dry up and fall off after two to four weeks. There are often enanthem (sores or ulcers) in the mouth and lesions can affect the eyes and/or genital area. Swollen lymph nodes are typical of monkeypox. However, lesions may be haemorrhagic or coalesce into large bullae. In this multi-country outbreak, there have been suggestions that the progression of the lesions may be atypical, beginning in the genital area. Many persons experiencing this condition may have been tested for other infectious diseases at the time of detection.

This guidance serves to provide interim recommendations to laboratories and stakeholders involved in the diagnosis of monkeypox. These recommendations have been prepared by WHO in consultation with and reviewed by subject matter laboratory experts, with experience handling and detecting MPXV and OPXV, and those with expertise in the development of diagnostic assays for OPXV. For countries that have regulatory standards that apply to clinical laboratory testing performed on human specimens, those regulatory standards should appropriately be followed. WHO is closely monitoring developments related to this outbreak and will revise and publish updated recommendations as necessary. Unless revisions are made, this document will expire in one year (May 2023).

Indications for testing



Protect yourself and others by:

- Isolating at home and talking to a health worker if you have symptoms
- Avoid skin-to-skin or face-to-face contact, including sexual contact with anyone who has symptoms
- Clean hands, objects, and surfaces that have been touched regularly
- Wear a mask if you are in close contact with someone with symptoms
- Stigmatising people because of a disease is never ok.

Anyone can get or pass on monkeypox, regardless of their sexuality.

Public health advice for gay, bisexual and other men who have sex with men on the recent outbreak of monkeypox

An outbreak of a disease called monkeypox is currently taking place in many countries that do not typically have cases. This can be concerning, especially for people whose loved ones or community have been affected. Some cases have been identified through sexual health clinics in communities of gay, bisexual and other men who have sex with men.

It is important to note that the risk of monkeypox is not limited to men who have sex with men. Anyone who has close contact with someone who is infectious is at risk. However, given that the virus is being identified in these communities, learning about monkeypox, how it spreads and how to protect yourself will help ensure that as few people as possible are affected and that the outbreak can be stopped.

How to use this document:

This document contains information on how monkeypox spreads, what to do if you think you have symptoms and how to protect yourself and others. It can be used by community leaders, influencers, health workers and people attending social events and parties to inform and engage communities of men who have sex with men.

Information on this outbreak is changing rapidly as we learn more. Check [who.int](https://www.who.int) for the most up to date information.

What you need to know:

An outbreak of a disease called monkeypox is happening in some countries where the virus is not typically found. Some of these cases are being found in communities of gay, bisexual and other men who have sex with men. Transgender people and gender-diverse people may also be more vulnerable in the context of the current outbreak.

Symptoms include:

- Rash with blisters on face, hands, feet, eyes, mouth and/or genitals
- Fever
- Swollen lymph nodes
- Headaches
- Muscle aches
- Low energy

You can catch monkeypox if you have close physical contact with someone who is showing symptoms. This includes touching and being face-to-face.

Monkeypox can spread through close skin-to-skin contact during sex, including kissing, touching, oral and penetrative sex with someone who has symptoms. Avoid having close contact with anyone who has symptoms.

Protect yourself and others by:

- Isolating at home and talking to a health worker if you have symptoms
- Avoid skin-to-skin or face-to-face contact, including sexual contact with anyone who has symptoms
- Clean hands, objects, and surfaces that have been touched regularly
- Wear a mask if you are in close contact with someone with symptoms



Stigmatising people because of a disease is **NEVER** ok. Anyone can get or pass on monkeypox, regardless of their sexuality.

What is monkeypox?

Monkeypox is a disease caused by the monkeypox virus. It is commonly found in Central and West Africa and is occasionally identified in other countries. An outbreak is currently taking place in numerous countries that do not typically have cases. It is called monkeypox because it was first detected in monkeys.

What are the symptoms of monkeypox?

Symptoms of monkeypox typically include a fever, intense headache, muscle aches, back pain, low energy, swollen lymph nodes and a skin rash or lesions. The rash usually begins within one to three days of the start of a fever. Lesions can be flat or slightly raised, filled with clear or yellowish fluid, and can then crust, dry up and fall off. The number of lesions on one person can range from a few to several thousand. The rash tends to be concentrated on the face, palms of the hands and soles of the feet. It can also be found on the mouth, genitals, and eyes. The monkeypox rash can sometimes be mistaken for syphilis or herpes.

Symptoms typically last between two to four weeks and go away on their own without treatment. In some individuals, they can lead to medical complications and rarely death. People with underlying immune deficiencies may be at risk of more serious symptoms.

How does monkeypox spread?

People with monkeypox are infectious while they have symptoms (normally for between two and four weeks). You can catch monkeypox through close physical contact with someone who has symptoms. The rash, bodily fluids (such as fluid, pus or blood from skin lesions) and scabs are particularly infectious. Clothing, bedding, towels or objects like eating utensils/dishes that have been contaminated with the virus from contact with an infected person can also infect others.

Ulcers, lesions or sores in the mouth can also be infectious, meaning the virus can spread through

saliva. People who closely interact with someone who is infectious, including health workers, household members and sexual partners are therefore at greater risk for infection.

What should I do if I think I have monkeypox?

If you think you have symptoms or have been a close contact of someone with monkeypox, contact your health worker for advice, testing and medical care. If possible, self-isolate and avoid close contact with others. Take the steps listed above to protect people close to you from becoming infected.

Can monkeypox spread through sex?

Monkeypox can spread through close skin-to-skin contact during sex, including kissing, touching, oral and penetrative sex with someone who has symptoms. Monkeypox rashes are sometimes found on genitals and in the mouth, which is likely to contribute to transmission during sexual contact. Mouth-to-skin contact could cause transmission where skin or mouth lesions are present. Avoid having close contact with anyone who has symptoms.

It is currently not known whether monkeypox can be spread through semen or vaginal fluids. People who have symptoms should avoid sexual contact with others and until we know more, they should continue using condoms after they recover.

It can also spread through other types of close contact, not just sex.

How can I protect myself against monkeypox?

Reduce your risk by avoiding close contact, including sexual contact, with people who have suspected or confirmed monkeypox.

If you do need to have close contact with someone who has symptoms, encourage them to self-isolate or cover any skin lesion if they can (e.g., with a light bandage or clothing over the rash). When you are physically close to each other,

both of you should wear a medical mask. Avoid skin-to-skin contact whenever possible and use disposable gloves if you have any direct contact with lesions.

Regularly clean your hands with soap and water or an alcohol-based hand rub, especially after contact with the person who is infected, their clothes, bed sheets, towels and other items or surfaces they have touched, or with which they may have come into contact, their rash or respiratory secretions (e.g., utensils, dishes). Wash clothes, towels and bed sheets and eating utensils with warm water and detergent. Wear a mask when handling any clothes or bedding. Clean and disinfect any contaminated surfaces and dispose of contaminated waste (e.g., dressings) appropriately.

Some cases in this outbreak have been identified among communities of men who have sex with men. Why is this?

Monkeypox is spread from person to person through close contact. The risk of monkeypox is not limited to men who have sex with men. Anyone who has close contact with someone who is infectious is at risk.

One reason we are currently hearing reports of cases of monkeypox from sexual health clinics in communities of men who have sex with men in this outbreak may be because of positive health seeking behaviour in this demographic.

Monkeypox rashes can resemble some sexually transmitted diseases, including herpes and syphilis, which may explain why these cases are being picked up at sexual health clinics. It is likely that as we learn more, we may identify cases in the broader community.

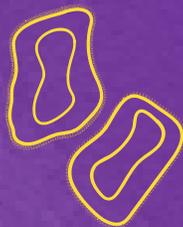
Where can I learn more about monkeypox?

Find answers to some of the most common questions on monkeypox [here](#) or read up on WHO's [factsheet](#) on the disease. Check your local official sources for the situation near you.

If you are having sex with multiple partners, seek regular screening for sexually transmitted infections and take PrEP where it is available. Seeking health advice regularly and quickly, if you have symptoms, will help you get treatment if needed and avoid you infecting anyone else.

Remember - condoms may not prevent monkeypox but can prevent other sexually transmitted infections.

UPDATE: 26 MAY 2022



Monkeypox outbreak

UPDATE AND ADVICE FOR HEALTH WORKERS

Recognizing monkeypox

Signs and symptoms:

- Monkeypox is usually a self-limited disease and **typically lasts 2 to 4 weeks**
- It may be severe in children, pregnant women or persons with immune suppression due to other health conditions
- The **incubation period is usually 6 to 13 days** and can range from 5 to 21 days
- Typical symptoms include **fever, headache, muscle aches, backache, lack of energy, swollen lymph nodes** and a **skin rash or lesions**
- **Swelling of the lymph nodes** is a distinctive feature of monkeypox compared to other diseases that may initially appear similar (chickenpox, measles)
- The skin eruption begins within 1 to 3 days after fever onset. The rash often begins on the face, then spreads to other parts of the body
- The rash evolves from macules (lesions with a flat base) to papules (slightly raised firm lesions), vesicles (lesions filled with clear fluid), pustules (lesions filled with yellowish fluid), and crusts which dry up and fall off
- The case fatality ratio has been reported to around 3% in the African setting, with most deaths occurring in younger age groups



Transmission and risk of infection

Monkeypox virus is transmitted from one person to another by close contact

- **A person with monkeypox remains infectious while they have symptoms, normally for between 2 and 4 weeks**
- Monkeypox virus is transmitted from one person to another by **close contact with lesions, body fluids and contaminated materials** such as bedding, clothing or eating utensils
- **Ulcers, lesions or sores in the mouth can also be infectious, meaning the virus can spread through saliva**
- People who closely interact with someone who is infectious, including health workers, household members and sexual partners are at greater risk of infection
- Transmission can also occur via the placenta from mother to fetus (which can lead to congenital monkeypox) or during close contact during and after birth



Monkeypox protective measures

Protect yourself and others

- Avoid close contact with people who have suspected or confirmed monkeypox

When caring for a person with monkeypox:

- Encourage the person to **cover any lesions with a light bandage or clothing** if possible
- **Wear a medical mask** and ask the patient to wear one also
- **Avoid skin-to-skin contact and use disposable gloves**
- **Clean hands regularly with soap and water or alcohol-based hand rub**, especially after contact with the patient or contaminated materials such as bedding, clothing or eating utensils
- **Wash clothes, towels, bedsheets and eating utensils** with warm water and detergent
- Wear a mask when handling any clothes or bedding
- **Clean and disinfect any contaminated surfaces** and dispose of contaminated waste



Managing the spread of monkeypox

Early detection, isolation and treatment of persons with monkeypox could control the spread of the disease

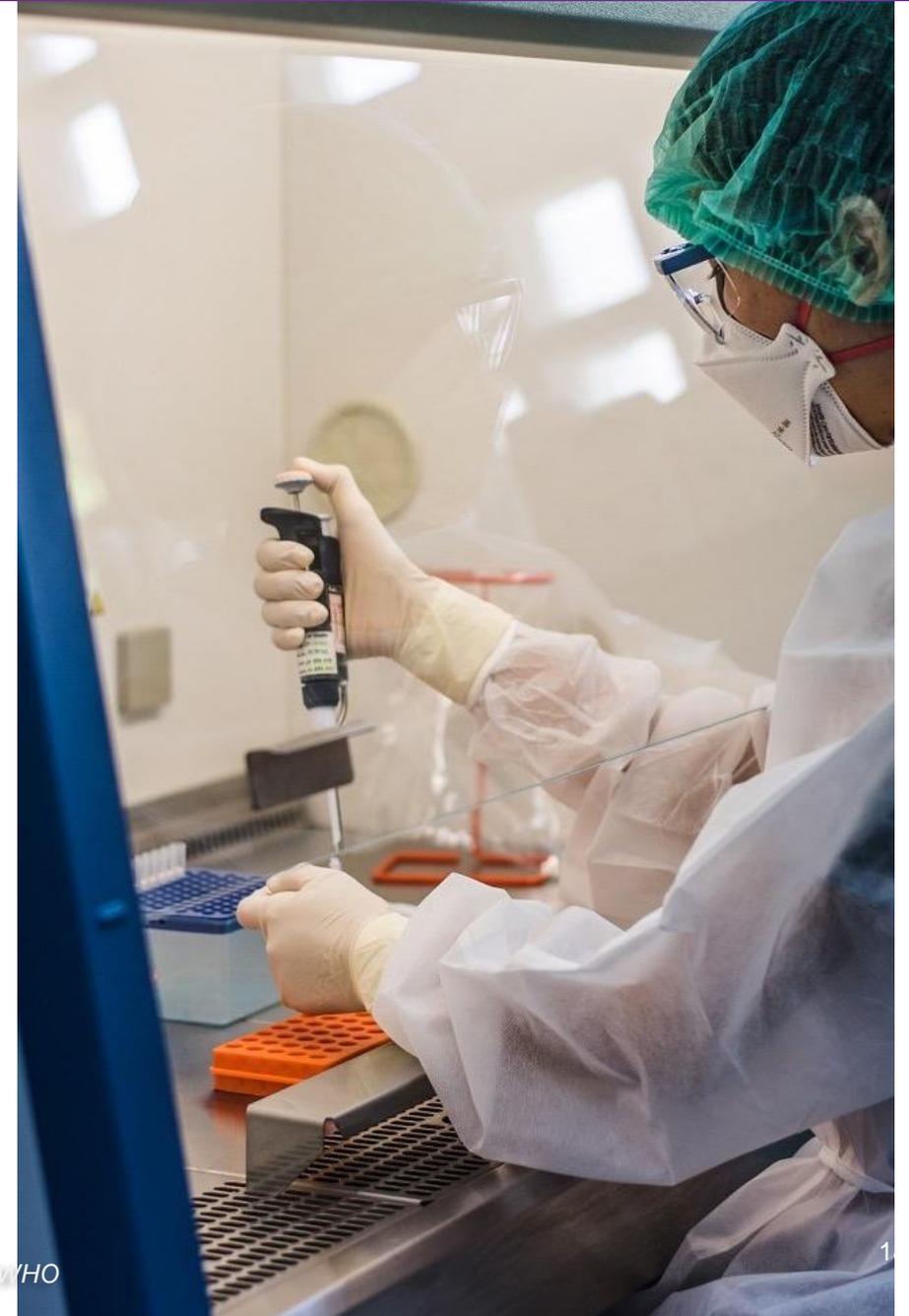
- Any person with suspected or confirmed monkeypox should be isolated until their lesions have crusted and the scabs have fallen off
- As soon as a suspected case is identified, contact tracing should be initiated
- Contacts should be monitored daily for the onset of symptoms for a period of 21 days
- Asymptomatic contacts should not donate blood, cells, tissue, organs, breast milk, or semen while they are under symptom surveillance
- Asymptomatic contacts can continue daily activities such as work and school (i.e., no quarantine is necessary)
- Health workers who have unprotected exposures (i.e., not wearing appropriate PPE) to patients with monkeypox or contaminated materials do not need to be excluded from work if asymptomatic, but should undergo active surveillance for symptoms, at least twice daily for 21 days following the exposure



Diagnosing a monkeypox infection

If monkeypox is suspected, health workers should collect a lesion sample and transport it safely to a laboratory with appropriate capability

- Optimal diagnostic samples for monkeypox are from skin lesions, the roof or fluid from vesicles and pustules and dry crusts
- Lesion samples must be stored in a dry, sterile tube and kept cold
- Polymerase chain reaction (PCR) is the preferred laboratory test



Clinical care and therapeutics

Clinical care should focus on alleviating symptoms, manage complications and prevent long-term consequences of monkeypox



Clinical care

- Skin care:
 - Wash skin lesions with soap and water or povidone-iodine solution
 - Treat secondary bacterial infections with topical or oral antibiotics as needed
- Eye care:
 - Prevent corneal scarring and visual impairment with vitamin A supplementation where needed, protective eye pads and ophthalmic antibiotics or antivirals as needed
- Mouth care:
 - Wash mouth with warm clean salted water
 - Use oral analgesic medication to minimize mucosal pain from mouth sores and encourage food and fluid intake

Therapeutics

- **Tecovirimat** is an antiviral approved for the treatment of monkeypox by the European Medicines Agency (EMA) in January 2022. However, It is not yet widely available

Vaccines against monkeypox

In the past, vaccination against smallpox was demonstrated to be about 85% effective in preventing monkeypox

- At the present time, the original smallpox vaccines are no longer available to the general public
- Research has yielded several safer vaccines for smallpox
- In 2019, one new vaccine was approved for the prevention of smallpox and monkeypox
- Availability of this two-dose vaccine remains limited
- Member States may want to consider vaccination of close contacts as post-exposure prophylaxis or pre-exposure vaccination of laboratory personnel and health workers



Photo: CDC

Monkeypox and HIV

- Small Studies:
 - 3 / 9 deaths in Nigeria were in persons with untreated HIV
- Unpublished data:
 - HIV prevalence in Nigeria is 2%; among monkeypox patients the prevalence is 25%.
- No data yet to suggest that PLHIV may more easily acquire MPX due to immune deficiency and/or modes of transmission, but
- Some evidence that immunosuppression may have more severe and prolonged illness

Clinical Course and Outcome of Human Monkeypox in Nigeria ^{FREE}

Dimie Ogoina ✉, Michael Iroezindu, Hendris Izibewule James, Regina Oladokun, Adesola Yinka-Ogunleye, Paul Wakama, Bolaji Otike-odibi, Liman Muhammed Usman, Emmanuel Obazee, Olusola Aruna ... Show more

Clinical Infectious Diseases, Volume 71, Issue 8, 15 October 2020, Pages e210–e214, <https://doi.org/10.1093/cid/ciaa143>

Published: 13 February 2020 Article history ▾

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Abstract

In a retrospective review of hospital records of 40 human monkeypox cases from Nigeria, the majority developed fever and self-limiting vesiculopustular skin eruptions. Five deaths were reported. Compared to human immunodeficiency virus (HIV)–negative cases, HIV type 1–coinfected cases had more prolonged illness, larger lesions, and higher rates of both secondary bacterial skin infections and genital ulcers.

medRxiv THE PREPRINT SERVER FOR HEALTH SCIENCES

CSH Cold Spring Harbor Laboratory BMJ Yale

Clinical characterization of human monkeypox infections in the Democratic Republic of the Congo

Phillip R. Pittman, James W. Martin, Placide Mbala Kingebeni, Jean-Jacques Muyembe Tamfum, Qingwen Wan, Mary G. Reynolds, Xiaofei Quinn, Sarah Norris, Michael B. Townsend, Panayampalli S. Satheshkumar, Bryony Soltis, Anna Honko, Fernando B. Güereña, Lawrence Korman, John W. Huggins

doi: <https://doi.org/10.1101/2022.05.26.22273379>

This article is a preprint and has not been peer-reviewed [what does this mean?]. It reports new medical research that has yet to be evaluated and so should not be used to guide clinical practice.

Title: Determinants of Mortality Among Monkeypox Cases

Authors: Mahmood M. Dalhat¹, Fatima Garba², Adesola Ogunleye³, Afolabi M. Akinpelu³, Sola Aruna⁴, Chikwe Ihekweazu³

Monkeypox and HIV



BHIVA rapid statement on monkeypox virus

Tuesday 31 May 2022 (update to original 17 May 2022 statement)

As of 31 May 2022, 190 cases of monkey pox virus (MPV) have been reported in the UK. Men who had sex with men (MSM) are disproportionately impacted and most cases report no travel to an endemic area. UKHSA are working closely with stakeholders across the NHS, including BASHH, BHIVA and Terrence Higgins Trust to ensure appropriate information is disseminated as broadly as possible and services are supported to provide appropriate screening and management.

The UK Health Security Agency (UKHSA) press release is here:

<https://www.gov.uk/government/news/monkeypox-cases-confirmed-in-england-latest-updates>

Latest information on case definitions, vaccination and principles of infection control are here:

<https://www.gov.uk/government/collections/monkeypox-guidance>



Monkeypox in Europe EACS Statement

Friday, 20 May 2022

UK, Spain and Portugal are reporting cases of monkeypox amongst, but not exclusively, men who have sex with men (MSM). Isolated confirmed cases, or cases under investigation are being reported from Sweden, Italy, Belgium, USA and Canada. Many of these cases are unlinked to travel to endemic areas in West/Central Africa, and it is increasingly likely that there is local transmission amongst communities in these areas.

https://www.sanidad.gob.es/ciudadanos/enfLesiones/enfTransmisibles/sida/documentos/Monkeypox_in_Europe.pdf

Monkeypox and HIV

Coinfection of syphilis and monkeypox in HIV positive man in Prague, Czech Republic

Author links open overlay panel [Beatrice Bížová^a](#)

[Dan Veselý^b](#) [Milan Trojánek^c](#) [Filip Rob^a](#)

<https://doi.org/10.1016/j.tmaid.2022.102368> Get rights and content



Monkeypox Infodemic

Monkeypox outbreak in non-endemic countries social listening deep-dive

16 – 29 May 2022

Trigger warning: this analysis reports on issues which may be upsetting to people such as themes of mental health.
Disclaimer: this analysis reports on publicly shared online conversations that reflect the opinions of those individuals.

KEY FINDINGS

SOCIAL LISTENING DEEP-DIVE

ASSOCIATION OF MONKEYPOX WITH THE LGBTQ+ COMMUNITY LEADING TO POLARIZING VIEWS ON STIGMA AND CONFUSION ABOUT TRANSMISSION

Stigma against the LGBTQ+ community emerged after news stories reported on outbreaks allegedly resulting from LGBTQ+ events. Some claimed that acknowledging that the monkeypox virus has spread mostly during MSM contact does not mean stigmatising the community. On the contrary, others claimed that health experts are allegedly voluntarily neglecting the spread among MSM to avoid the stigmatisation of the community.

Narratives speculating that monkeypox may be transmitted mostly during sexual contact emerged, resulting in widespread perception that it may be difficult to get infected in different transmission settings.

STIGMATIZATION AGAINST BLACK PEOPLE AND MIGRANTS FROM AFRICA

Online conversation regarding the prior and ongoing monkeypox outbreak in West-African countries resulted in speculation that African migrants recently arrived in Europe may be the cause of the recent spread among high-income countries. These allegations were further reinforced by media narratives mostly using pictures and videos of infected Black people to depict the virus, which were contrasted over the last few days of the reporting period.

Perceptions that monkeypox is emerging as a concern only when spreading across high-income countries were received with criticism, considering that it has been an ongoing health emergency in West Africa. Discussion of the importance of ensuring an equitable distribution of monkeypox vaccines across countries was key.

MULTIPLE CONSPIRACY THEORIES AND MISINFORMATION NARRATIVES AROUND THE ORIGIN OF THE OUTBREAK

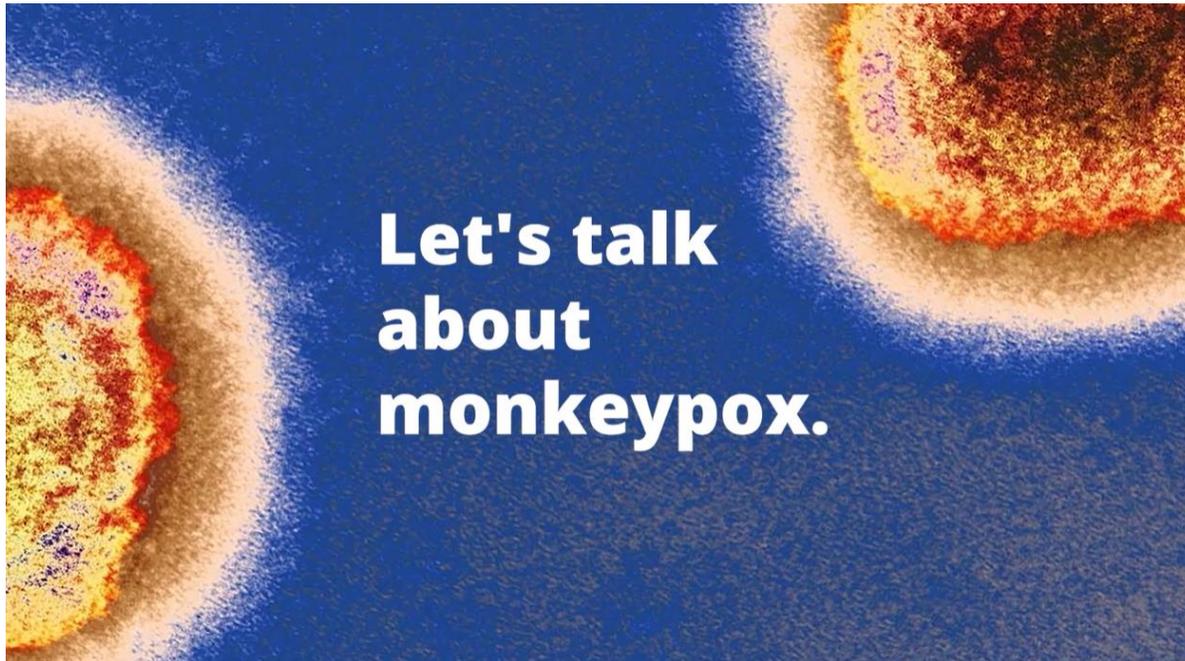
Misinformation was highly present in the context of the origin of the virus. This included allegations that monkeypox was leaked from a laboratory, or that it is an alleged biological weapon created to replace COVID-19, or that has been intentionally spread amongst events mainly attended by MSM.

Misinformation that mRNA vaccines developed using chimpanzee adenovirus technology may lead to the development of monkeypox as a form of adverse event was also a widely spread narrative.



World Health
Organization

Monkeypox Risk Communication



<https://app.frame.io/reviews/c9590f16-6d9c-4145-aec0-9686a03cb481/b34be5c5-e4b5-4396-bc11-441320ec2e2b?version=d996d191-d440-4743-b8fd-41aa5cff60a6>



<https://app.frame.io/reviews/63042b12-f006-45b6-bb73-0128ca24344e/fc200540-8f5b-47c6-aeba-ba0ca037e8fd?version=0960680f-82ee-4f0a-956c-2cc69843bea0>

WHO Key Priorities

1. The goal is to stop the outbreak. WHO encourages countries to

- Raise awareness
- Detect cases: enhance clinical recognition to ensure early detection of cases and isolation of patients
- Stop transmission : intensify surveillance, case-finding, cluster investigation and contact-tracing
- Protect health workers and prevent transmission in health care settings (PPE, Infection prevention and control)

To do:

- *adapt and strengthen surveillance, laboratory and testing capacities*
- *Use the **Case Reporting Form (CRF)** once published to better understand the clinical picture across regions*
- *If using **therapeutics** : collect standardized data or use clinical trial protocols to understand effectiveness*
- *Use, adapt and strengthen **care pathways** with appropriate **IPC measures** to prevent onwards transmission and access to **symptomatic care** elements such as good primary care, pain control and skin care.*

WHO Key Priorities continued...

2. Ensure effective communication to raise awareness and **avoid stigmatisation**. Continue to communicate what we know, what is being done to respond and continue to update and publish products as data becomes available.

3. Risk based strategies: Use public health interventions (testing, contact-tracing and isolation) and deploy countermeasures (therapeutics, vaccines, diagnostics and sequencing) based on **need, risk and benefit**. Apply measures **commensurate to the risk** (for instance regarding safe gatherings)

4. Global Collaboration

- Continue sharing information, diagnostic resources and data.
- Use standard protocols to enable comparison of data between countries
- Develop global mechanisms to ensure access to countermeasures (vaccine, therapeutics, diagnostics) based on public health need
- *Accelerate research for monkeypox*

5. Strengthen One Health approach

WHO Critical unknowns affecting the response

- **Transmission patterns and factors that facilitate spillover and human-to-human spread**
 - Human-to-human transmission
 - Zoonotic transmission, reverse zoonotic transmission and animal source/reservoir(s)
 - Infectious period, symptomatic/asymptomatic spread
 - Amplification events
- Extent of unrecognized infection in endemic and non-endemic countries
- Molecular epidemiology, genetic sequences needed
- Clinical characteristics, severity of disease and risk factors for severe disease
- Immunity from vaccination; immunity from infection
- **Interventions and impact of interventions**
 - To prevent severe disease/death
 - To protect at risk groups and prevent onward spread

WHO call for action

- Health authorities at all levels, clinicians, health and social sector partners, and academic, research and commercial partners to **respond quickly** to stop the multi-country outbreak of monkeypox.
- Rapid action must be taken before the virus can be allowed to establish itself as a human pathogen with efficient person-to-person transmission in both **endemic and non-endemic contexts**.
- **Lessons learned** from the eradication of smallpox and from the management of other emerging zoonotic diseases must be urgently considered in the light of these rapidly evolving events.
- **Advance research** to better inform prevention, detection and response actions for monkeypox globally

<https://www.who.int/health-topics/monkeypox>

Additional resources



Multi-country monkeypox outbreak in non-endemic countries

<https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON385>



Key facts about Monkeypox

<https://www.who.int/news-room/fact-sheets/detail/monkeypox>



OpenWHO: Monkeypox introduction

<https://openwho.org/courses/monkeypox-introduction>

Variole du singe : Introduction | OpenWHO



WHO website: Monkeypox

https://www.who.int/health-topics/monkeypox/#tab=tab_1



OpenWHO: Monkeypox epidemiology, preparedness and response

<https://openwho.org/courses/monkeypox-intermediate>

Épidémiologie de la variole du singe, préparation et réponse | OpenWHO



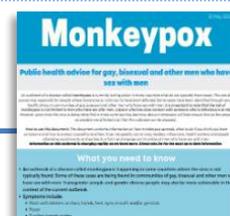
Monkeypox Q&A

<https://www.who.int/philippines/news/q-a-detail/monkeypox>



Monkeypox outbreak toolbox

<https://www.who.int/emergencies/outbreak-toolkit/disease-outbreak-toolboxes/monkeypox-outbreak-toolbox>



Monkeypox: public health advice for gay, bisexual and other men who have sex with men

<https://www.who.int/publications/m/item/monkeypox-public-health-advice-for-men-who-have-sex-with-men>