Multi-country outbreak of monkeypox

External Situation Report 8, published 19 October 2022
Data as received by WHO national authorities by 17:00 CEST, 17 October 2022

Risk assessment
Global risk – Moderate
WHO Regional risk

- European Region, Region of the Americas – High
- African Region, Eastern Mediterranean Region, Southeast Asia Region – Moderate
- Western Pacific Region – Low

Laboratory confirmed cases	Deaths	Countries/ areas/ territories
73 437	29	109

Highlights

- During the week of 10 October to 16 October 2022, the number of monkeypox cases reported in the Regions of Europe and the Americas continue to decline, driving the overall downward trend observed since August 2022.
- Since the last Situation Report published on 5 October 2022, 4537 new cases (6.6% increase in total cases) and four new deaths have been reported.
- WHO has circulated, through its Regional Offices, a protocol to support the in-depth case investigation form (CIF) for Member State use, to better understand case characteristics and transmission dynamics.
- Multi-disciplinary country support missions have been conducted by WHO in the past two weeks to lend support to optimizing surveillance and other areas of monkeypox response, including in Ghana, Nigeria, and (remotely) to the Gulf Centre for Disease Prevention and Control for a Gulf Coordinating Council (GCC) States regional risk assessment exercise.
- For strategic planning and global support, WHO is appealing for US$ 33.82 million to take immediate action to stop the monkeypox outbreak in collaboration with the Member States, partners, and other stakeholders.
- WHO is supporting the Federal Ministry of Health and the State Ministries of Health of Sudan to develop state-level monkeypox preparedness and response plans.

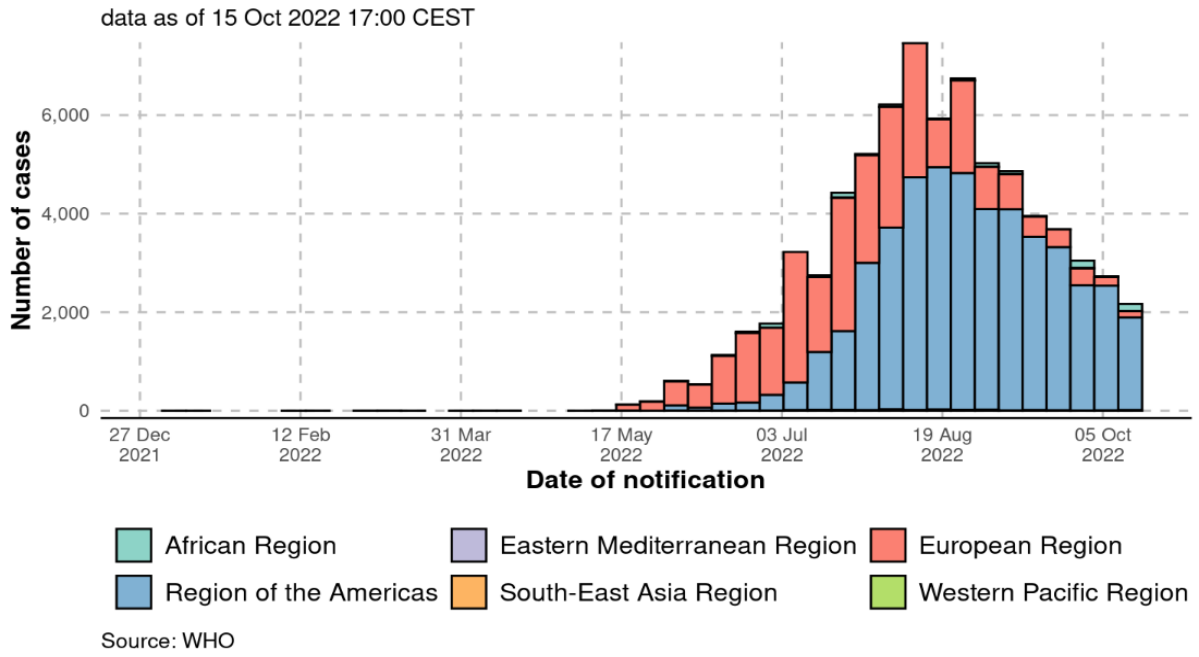
From 1 January through 16 October 2022, a cumulative total of 73 437 laboratory-confirmed cases of monkeypox and 29 deaths have been reported to WHO from 109 countries/territories/areas (hereafter 'countries'[i]) in all six WHO Regions (Table 1). Since the last edition published on 5 October 2022, 4537 new cases (6.6% increase in total cases), and four new deaths have been reported.

In the past seven days, 17 countries reported an increase in the weekly number of cases, with the highest increase (7.7%) reported in Peru. Three new countries Mozambique (n=1,) San Marino (n=1), and Vietnam (n=1) reported its first cases in the past seven days. Overall**,** 49 countries have not reported new cases for over 21 days, the maximum incubation period of the disease; 10 more countries since the last report.

The number of weekly new cases reported globally declined by 20.6% in week 41 (10 through 16 October) (n=2167 cases) compared to week 40 (3 through 9 October) (n=2730 cases), with the largest proportional decrease observed in the European Region (-28%) and the Region of the Americas (-26%). Despite these decreases, the majority of cases reported in the past four weeks were from the Region of the Americas (88.5%) and the European Region (9.2%). From 3 through 16 October, a total of four deaths were reported from Brazil. Overall, the African Region has reported the highest number of deaths among confirmed cases (13/29; 44.8%).

As of 16 October, the ten countries that have reported the highest cumulative number of cases globally are the United States of America (n=27 128), Brazil (n=8621), Spain (n=7239), France (n=4064), The United Kingdom (n =3673), Germany (n=3651), Peru (n=2785), Colombia (n=2730), Mexico (n=2147), and Canada (n=1410). Together, these countries account for 86.4% of the cases reported globally.

Figure 1. Epidemiological curve of weekly aggregated confirmed cases of monkeypox by region, from 1 January to 16 October 2022 17:00 CEST*.



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

The Region of the Americas continues to account for the highest cumulative proportion of monkeypox cases reported globally and the highest proportion of weekly new cases. Six countries in the Region (United States, Brazil, Peru, Colombia, Mexico, and Canada) are among the top 10 countries with the highest number of confirmed cases (64%) globally and account for 95% of cases in the Region. Two of the six countries, Mexico and Colombia, were recently added to the list of the top 10, indicating increased transmission in the region of Americas. Eighty-seven percent of cases in the Americas with available information on the mode of transmission (n=8182) are locally transmitted cases.

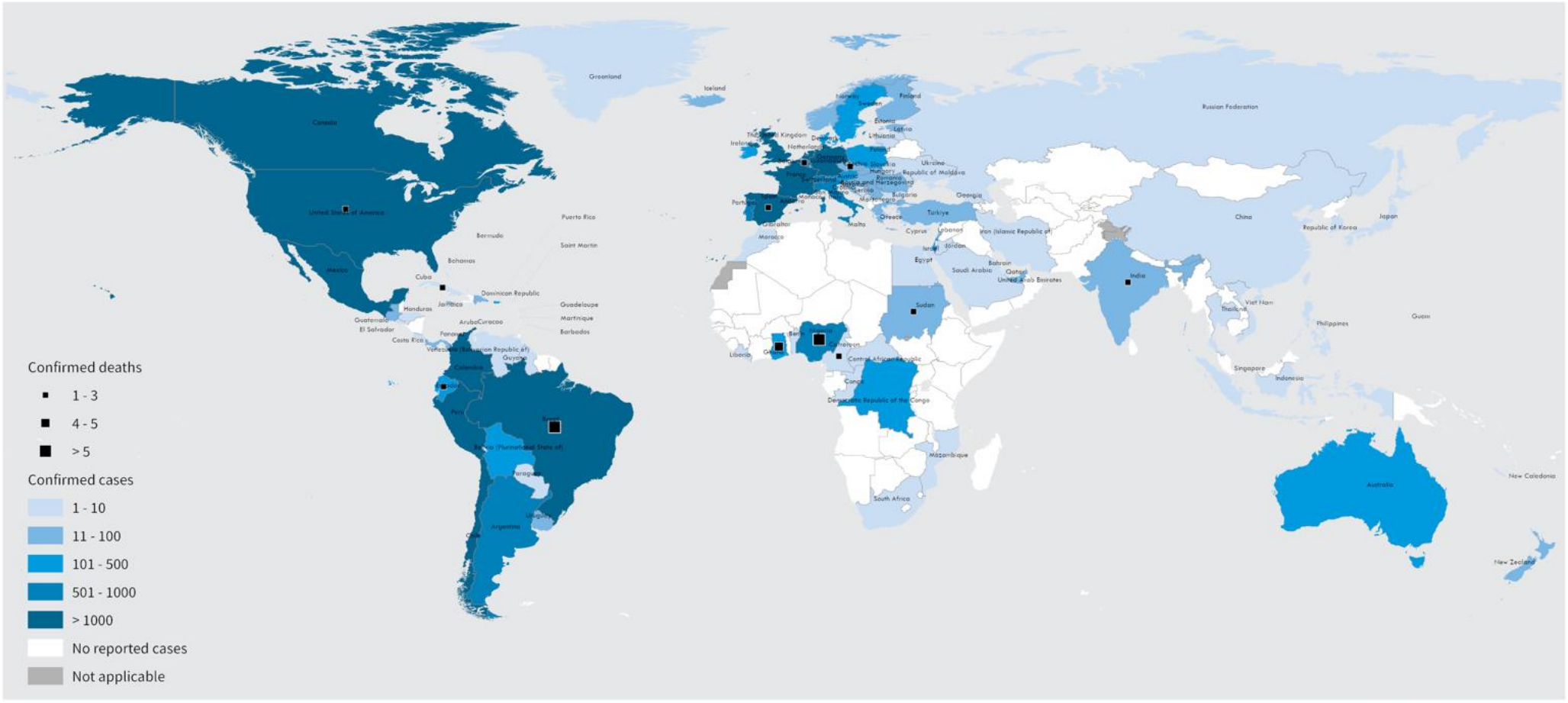
Table 1. Number of cumulative confirmed monkeypox cases and deaths reported to WHO, by WHO Region, from 1 January 2022 to 16 October 17:00 CEST

WHO Region	Confirmed cases	Deaths
African Region	869	13
Region of the Americas	47 215	10
Eastern Mediterranean Region	72	1
European Region	25 056	4
South-East Asia Region	23	1
Western Pacific Region	202	0
Cumulative	73 437	29

Other key epidemiological findings:

- The outbreak continues to affect primarily young men, with 97.1% (40 940/42 163) of cases with available data being men, with a median age of 35 years (interquartile range: 29-42 years); 1.1% (n=477) of cases with age data available are aged 0-17 years, out of which 128 (0.3%) are aged 0-4 years. This proportion differs between regions, with the largest proportion of cases aged 0-17 years being reported from the Region of the Americas (334/477; 70%).
- Among cases with sexual orientation reported, 87.9% (18 549/21 099) identified as gay, bisexual and other men who have sex with men. Of all reported types of transmission, transmission through skin and mucosal contact during sexual activities was most commonly reported, with 12 451 of 17 310 (71.9%) of all reported transmission events.
- Of all settings in which cases reported their likely exposure setting, the most commonly reported was in a party setting with sexual contact, comprising 3388 of 7427 (45.6%) reported exposure settings.
- Among cases with known HIV status, 50.3% (11 634/23 148) are HIV-positive.
- Among the cases that reported at least one symptom, the most common symptom is any rash, and is reported in 81.4% of cases, followed by fever at 58.8%, and systemic and genital rash (49.9% and 46.3%, respectively).

Figure 2. Geographic distribution of confirmed cases of monkeypox reported to or identified by WHO from official public sources from 1 January 2022 to 16 October 17:00 CEST



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

Data Source: World Health Organization
Map Production: WHO Health Emergencies Programme
Map Date: 19 October 2022

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Updates and WHO Advice

WHO continues to closely monitor and respond to the outbreak and support international coordination and information sharing with Member States and partners. Clinical and public health incident response have been activated by Member States to coordinate comprehensive case finding, contact tracing, laboratory investigation, supported isolation, clinical management, implementation of infection prevention and control measures, risk communication and community engagement, and vaccination activities, as well as support ongoing epidemiological and countermeasures research.

Infection prevention and control

WHO advises health care settings to continue to follow standard and transmission-based precautions for health workers, including the use of a respirator, gloves, gown, and eye protection when caring for patients with suspected or confirmed monkeypox. Healthcare facilities should ensure health workers are properly trained in injection safety, including promoting the use of safety-engineered devices. For skin and other specimen collection, WHO guidance should be followed to avoid health worker infection through percutaneous exposure such as via needle-stick injury, of which there have been several case reports. Sharp needles should not be used for de-roofing skin lesions, where a lancet or other appropriate device is preferred. Particular attention should be paid to environmental cleaning and disinfection protocols and the safe handling of linen and laundry according to standard and transmission-based precautions. Guidance for infection prevention and control measures in health care and household settings is available in Clinical management and infection prevention and control for monkeypox: interim rapid response guidance.

In community settings such as congregate settings, settings where sex on premises occurs or personal service settings (such as tattooing sites), managers or organizers should ensure staff are aware of the risks of monkeypox, modes of transmission, and signs and symptoms, and put in place infection control measures such as hand hygiene, environmental cleaning and disinfection, and safe handling and cleaning and disinfection of shared items including linens. WHO Public health advice for sex workers is now available.

Clinical care and therapeutics

Clinical pathways for suspected, probable and confirmed cases should be established at all possible points of care including primary healthcare and sexual health/HIV care clinics. This ensures that screening according to locally adapted case definitions and the implementation of standardized protocols for Infection Prevention and Control (IPC), triage, testing, clinical evaluation and management are harmonized. Based on local transmission patterns and epidemiology, if clinically indicated, patients should be tested for HIV and other sexually transmitted co-infections.

Most patients with monkeypox have mild, uncomplicated disease presenting with localized skin lesions and systemic symptoms such as fever, headache, malaise, and/or lymphadenopathy. They should be treated symptomatically with antipyretics to control fever, oral and topical analgesics for pain management, localized care to keep skin lesions clean, and encouraged to maintain nutrition and hydration.

Patients may occasionally develop complications related to monkeypox requiring hospitalization, with the most common reasons including isolation and treatment for pain, including severe anorectal pain requiring analgesia, or complications such as bacterial superinfection. Skin lesions should be kept clean and patients should be monitored for complications that include the progression of skin and soft tissue infections such as cellulitis, abscesses, pyomyositis, or necrotizing soft tissue infections which may require antimicrobial therapy and localized wound care. Other complications include proctitis, urethritis, respiratory distress, severe pneumonia, keratitis or corneal infections which may lead to vision loss, vomiting or diarrhea which may lead to severe dehydration, electrolyte abnormalities or malnutrition, sepsis or shock, cervical lymphadenopathy leading to retropharyngeal abscesses or respiratory compromise, sepsis, and in rare cases myocarditis, encephalitis and other neurological abnormalities. These cases should be treated with optimal supportive care and be evaluated by appropriate specialists as indicated. (See WHO Guidelines)

Patients who are immunocompromised, such as those with advanced or untreated HIV may be at risk for severe or complicated monkeypox infection such as developing a more widespread rash. Some individuals presenting with monkeypox have received their first HIV diagnosis during their monkeypox infection.

The use of antivirals for monkeypox should be under collaborative clinical efficacy studies using standardized design methods and data collection tools for clinical and outcome data to rapidly increase evidence generation on efficacy and safety. If this is not possible, their use can still be considered under expanded access protocols (MEURI – Monitored Emergency Use of Unregistered and Investigational Interventions) using harmonized data collection for safety and clinical outcomes (such as the WHO Clinical Data Platform for Monkeypox) that would represent the desirable minimum in the context of an outbreak such as the current one.

Vaccines

Based on the advice and the risk-benefit assessment of independent experts who have reviewed the best available evidence of the three vaccines currently considered for responding to the monkeypox outbreak, WHO considers that mass vaccination is not required nor recommended for monkeypox at this time, regardless of vaccine supply. Vaccination should be considered an additional measure to complement primary public health interventions (Vaccine and immunization for monkeypox: interim guidance)

WHO recommends the use of primary preventive (pre-exposure) vaccination (PPV) for individuals at risk of exposure. The group at the highest risk of exposure in the current multi-country outbreak is gay, bisexual or other men who have sex with men (MSM) with multiple sexual partners. Others at risk may include individuals with multiple casual sexual partners; sex workers; health workers at risk of repeated exposure, laboratory personnel working with orthopoxviruses; clinical laboratory and health care personnel performing diagnostic testing for monkeypox; and outbreak response team members.

Post-exposure preventive vaccination (PEPV) is recommended for close contacts of cases, ideally within four days of first exposure (and up to 14 days in the absence of symptoms).

For healthy adults, non-replicating vaccine (MVA-BN), minimally replicating vaccine (LC16) or replicating vaccinia-based vaccine (ACAM2000) are appropriate for use. For immunocompromised individuals, people living with HIV, and pregnant and breastfeeding women, non-replicating vaccine (MVA-BN) should be used. For infants and children, non-replicating vaccine (MVA-BN) or minimally replicating vaccine (LC16) should be used.

In case of limited vaccine supply, close contacts of monkeypox cases at risk of developing severe disease, such as children, pregnant women and immunocompromised persons, including those on immunosuppressive therapy

or living with poorly controlled HIV, should be prioritized for receipt of vaccine following analysis of risks and benefits on a case-by-case basis.

WHO will soon release a consolidated vaccination strategy that will articulate the role of vaccination in outbreak control, laying out the goal and specific objectives of the vaccination programme, as well as key actions required in the context of the monkeypox strategic preparedness and response plan.

Risk Communication and Community Engagement

WHO continues to engage high-risk populations and conduct risk communication activities in order to help individuals and communities protect themselves and others from monkeypox and to seek vaccination, testing and care as needed. With many countries continuing to see a rise in cases, emphasizing the importance of behavioral interventions and uptake of vaccination should continue to be a high priority. Misinformation that monkeypox is no longer a risk continues to spread in online dialogues.

On 6 October 2022, a meeting of the informal WHO community reference group on monkeypox was held. Communities flagged concerns around the lack of access to testing and vaccination, lack of social protection for people being required to isolate, and on the overlap between HIV and monkeypox in terms of risks and resourcing. Planning is underway to conduct socio-behavioral research to further understand the knowledge, attitudes and practices of at-risk populations, and the perception and impact of interventions.

Public health advice on understanding, preventing and addressing stigma and discrimination related to monkeypox is now available in all UN languages. Public health advice for sex workers is also now available in all UN languages.

Gatherings

Common exposure settings for monkeypox include certain gatherings such as parties, pride events, parades, festivals, concerts, and other ways in which people gather that may include activities involving skin-to-skin contact which pose a higher risk for the spread of monkeypox. Some gatherings may be focused on men who have sex with men and associated public and private satellite events, conducive for increased opportunities for exposure through intimate sexual encounters and subsequent amplification of the outbreaks.

It is important to note that postponing or cancelling gatherings in areas where monkeypox cases have been detected is not required as a default measure; rather a risk-based approach can inform the decision-making for planning, modifying, or postponing gatherings in this regard, which should take into account of all hazards including monkeypox and should be tailored to the context of the event under consideration, and repeated at regular intervals.

WHO recommends health authorities and event organizers engage with representatives of affected communities, non-government organizations, elected officials and civil society, and behavioral scientists to advise on approaches and strategies to avoid the stigmatization of any individual or population groups and to support the implementation of appropriate interventions in relation to the gathering.

Monkeypox Situation Update: African Region

The African Region has been experiencing a surge in monkeypox cases since April 2022. From 1 January through 16 October 2022, a total of 869 laboratory-confirmed cases of monkeypox and 13 deaths have been reported to WHO from 10 countries of the African Region. The Region contributes to 1.2% of the globally reported cases (869 of 72 947) and 50% (13 of 29) of the global deaths.

During epidemiological week 41 (10 to 16 October 2022), a total of 61 new confirmed cases have been reported in three African countries: Nigeria (49), Ghana (1), and one new country, Mozambique (1). The three countries that have reported the highest cumulative number of cases in the region are Nigeria (61%), the Democratic Republic of the Congo (23%), and Ghana (12%). Together these countries account for 96% of all confirmed cases in the region. More than half (61%) of confirmed cases in the WHO African Region are males, with a median age of 27 years and an interquartile range of 13-36 years. A total of 13 deaths have been reported from the region, from Nigeria (7), Ghana (4), and Cameroon (2).

WHO is supporting the countries in developing National Monkeypox Strategic Preparedness and Response Plans. WHO has deployed high-level support missions to countries reporting the highest number of monkeypox cases and prioritized for the response in Ghana and Nigeria, and deployment is planned for Central Africa Republic and DRC.

Outbreak response mission to Ghana

The technical support mission took place from 3 to 7 October and aimed to augment response, advocacy, and technical engagement for priority actions drawn from the International Health Regulations Monkeypox Emergency Committee's temporary recommendations. Specific objectives for the mission included:

- Coordination of One Health response activities
- Epidemiological investigations to characterize transmission patterns
- Socio-ecological studies to understand transmission dynamics
- Surveillance at facility and community level (Integrated Disease Surveillance and Response), clinical diagnosis, and molecular characterization.
- Regulatory readiness for vaccine and therapeutics clinical trials
- Provide RCCE support to address risk perception, care-seeking behavior, and rumor management.

Findings and recommendations from the mission are highlighted below:

- **Coordination of One Health response activities:** It has been observed that Ghana has a strong governance structure in place, as well as the availability of incident management support team pillars for the monkeypox response. Also, the Ministry of Health and Ghana Health Services and the active engagement of partners have strongly supported the response effort. The country has been encouraged to institutionalize a Monkeypox "One Health" coordination mechanism at all levels; to establish Regional Public Health Emergency Operation Center (PHEOCs) for sub-national coordination; and to finalize the costed Strategic Preparedness and Response Plan, considering WHO and partner recommendations.

- **Laboratory:** Multiple laboratories in Ghana have monkeypox virus testing capacity. Reagents are available for detection at all locations, from many different manufacturers. Two or more laboratories have equipment and staffing for sequencing but are lacking reagents. The country has been encouraged to

review testing data, to identify reagent(s) of choice and undertake procurement for consistent testing, reporting and development of algorithms and standard operating procedures; to improve communication and data sharing between testing laboratories to ensure standardization; to develop laboratory guidance and specimen referral pathways to designated testing laboratories; to initiate genetic characterization study of monkeypox virus in Ghana and sampling strategy for prospective molecular surveillance; and to convene a laboratory Technical Working Group to standardize reporting.

- **Surveillance:** The surveillance mechanism has been strengthened through a system for proactive information and data gathering using the Epidemic Intelligence from Open Sources (EIOS) system. The mission outcome showed that Ghana has a functional IDSR system at the national, regional and district levels. There are trained multi-disciplinary rapid response teams to investigate and respond to the monkeypox outbreak. Also, Ghana has a community-based surveillance system, and a system exists for triage and verification of suspected cases. However, the country is encouraged to accelerate the transition to an electronic surveillance and data management system; institute a case follow-up and monitoring system for all monkeypox cases; ensure that private facilities are reporting monkeypox cases as part of the national surveillance system; and adapt and scale up the use of WHO standard surveillance tools at all levels.

- **Case Management:** Ghana has trained staff, knowledgeable in management of infectious diseases. Isolation and treatment centres are available in all 16 regions. The country was encouraged to set up clinical data management system for monitoring and timely reporting of monkeypox cases and their prevailing comorbidities; to leverage existing infectious disease centres for COVID-19 to cover other severe clinical syndromes; and to strengthen the capacity at PHC facilities to identify and manage MPX.

- **Risk Communication and Community Engagement:** The mission identified that there are existing broad partnerships in Ghana for Risk Communication and Community Engagement (RCCE) and also capacity building for it. The country has multiple platforms for RCCE, and also mechanisms for managing rumours and stigma. It was encouraged that the country use available opportunities to scale up RCCE for monkeypox (e.g, tailoring to high-risk groups); that the Technical Working Group on RCCE review its strategy to take into consideration monkeypox; and that officials ensure continuous messaging on MPX to the population.

Monkeypox Situation Update: Sudan

Sudan reported its first monkeypox case from Khartoum State on 22 May 2022. Additional suspected cases were subsequently reported because of limited testing capacity at the National Public Health Laboratory (NPHL). Fifteen samples were shipped for analysis at a reference facility (Robert Koch Institute, Germany) in June 2022, of which 14 samples tested positive and typed as clade I virus by polymerase chain reaction in October 2022. PCR test kits were received by NPHL in mid-June to enable testing of all the samples of suspected cases.

As of 15 October 2022, a total of 18 laboratory-confirmed cases have been reported from six states and ten localities of Sudan: West Darfur (8), Gedaref (3), North Darfur (3), Khartoum (2), Kassala (1), and Central Darfur (1). One death has been reported, from West Darfur State (CFR 5.8%). The majority of cases are males (78%) and less than 5 years old (61%).

As of 15 October 2022, a total of 364 suspected cases have been reported from 12 states and 32 localities of Sudan, of which five states host refugees and internally displaced persons (IDPs) camps. A total of 215 (59%) samples have been collected for laboratory testing, of which 161 (74.8%) have tested negative.

The epidemiology and exposure pattern of cases in Sudan is different from the observed global epidemiology. Children less than 5 years old are predominantly affected, and transmission through skin and mucosal contact during sexual activities has not been reported. Epidemiological-linked cases in West and North Darfur reported exposure to animals (wild pigs and squirrels respectively; although these are widespread and no link has been made to animal infections), and cases in Gedaref and Kassala are among refugees.

A total of three joint One Health monkeypox outbreak response missions to Kassala, Gedaref and North Darfur states have been carried out by the Federal Ministry of Health to strengthen the monkeypox response in the country. The Federal Ministry of Health and the State Ministries of Health have since been able to develop state-level monkeypox preparedness and response plans with the technical support of WHO.

Risk assessment of the Gulf countries

As of 13 October, a total of 30 monkeypox cases have been reported from four of the six countries of the Gulf Cooperation Council (GCC) comprising Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates. These GCC countries are among those countries with the strongest health systems in the Region.

These countries are at risk of exposure to monkeypox owing to the high volume of travelers from affected countries, upcoming international mass gathering events, as well as the risk of potential continued transmission in the countries already reporting cases. An example of an event of concern for global and regional health security is the upcoming FIFA World Cup 2022, taking place between 20 November and 18 December 2022 in Qatar.

Given the need to review the Gulf population's exposure risk and the Gulf region's capacities to detect and respond to monkeypox, the Gulf Center for Disease Prevention and Control (GCDC) collaborated with WHO to address the question: "What risk does the transmission of the monkeypox virus pose to populations living in the Gulf?". A workshop was held in Riyadh, Saudi Arabia, on 9 and 10 October 2022. A technical report summarizing the exercise and its findings will be published with proposed priority actions and recommendations.

Strategic Planning and Global Support

- WHO Emergency Appeal: Monkeypox - July 2022 – June 2023, 13 October 2022 https://www.who.int/publications/m/item/who-emergency-appeal--monkeypox---july-2022---june-2023
- Monkeypox Strategic Preparedness, Readiness, and Response Plan (SPRP)- 5 October 2022, https://www.who.int/publications/m/item/monkeypox-strategic-preparedness--readiness--and-response-plan-(sprp)

International Health Regulations Emergency committee and Temporary Recommendations of the Director-General

- WHO Second meeting of the International Health Regulations (2005) (IHR) Emergency Committee regarding the multi-country outbreak of monkeypox, 23 July 2022. https://www.who.int/news/item/23-07-2022-second-meeting-of-the-international-health-regulations-(2005)-(ihr)-emergency-committee-regarding-the-multi-country-outbreak-of-monkeypox
- WHO Director-General's statement at the press conference following IHR Emergency Committee regarding the multi-country outbreak of monkeypox, 23 July 2022. https://www.who.int/director-general/speeches/detail/who-director-general-s-statement-on-the-press-conference-following-IHR-emergency-committee-regarding-the-multi--country-outbreak-of-monkeypox--23-july-2022

WHO Interim Guidance and Public Health Advice

- WHO Surveillance, case investigation and contact tracing for Monkeypox: Interim guidance, 25 August 2022. https://www.who.int/publications/i/item/WHO-MPX-Surveillance-2022.3
- WHO Vaccines and immunization for monkeypox: Interim guidance, 24 August 2022. https://apps.who.int/iris/bitstream/handle/10665/361894/WHO-MPX-Immunization-2022.2-eng.pdf
- WHO Global clinical data platform for monkey case report form (CRF), 21 July 2022, https://www.who.int/publications/i/item/WHO-MPX-Clinical_CRF-2022.3
- 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
- Clinical management and infection prevention and control for monkeypox: Interim rapid response guidance, 10 June 2022. https://www.who.int/publications/i/item/WHO-MPX-Clinical-and-IPC-2022.1
- Emergency use of unproven clinical interventions outside clinical trials: ethical considerations: https://www.who.int/publications-detail-redirect/9789240041745
- WHO Technical brief (interim) and priority actions: enhancing readiness for monkeypox in WHO South-East Asia Region, 7 July 2022. https://cdn.who.int/media/docs/default-source/searo/whe/monkeypox/searo-mpx-tbrief22.pdf

Data management

- Monkeypox Case and contact investigation form (CIF) and minimum dataset Case reporting form (CRF). 19 August 2022. https://www.who.int/publications/m/item/monkeypox-minimum-dataset-case-reporting-form-(crf)
- The WHO Global Clinical Platform for monkeypox, 14 June 2022. https://www.who.int/tools/global-clinical-platform/monkeypox
- WHO Go.Data: Managing complex data in outbreaks. https://www.who.int/tools/godata

Risk communication and community engagement

- Public health advice for sex workers on monkeypox 30 September 2022. https://www.who.int/publications/m/item/public-health-advice-for-sex-workers-on-monkeypox
- Risk communication and community engagement public health advice on understanding, preventing and addressing stigma and discrimination related to monkey pox 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
- Monkeypox Q&A, 31 August 2022. https://www.who.int/news-room/questions-and-answers/item/monkeypox
- Monkeypox: public health advice for gay, bisexual and other men who have sex with men, 18 July 2022. https://www.who.int/publications/m/item/monkeypox-public-health-advice-for-men-who-have-sex-with-men

- 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
- Interim advice for public health authorities on summer events during the monkeypox outbreak in Europe, 2022. 14 June 2022. https://www.who.int/europe/publications/m/item/interim-advice-for-public-health-authorities--on-summer-events-during-the-monkeypox--outbreak-in-europe--2022
- Interim advice on Risk Communication and Community Engagement during the monkeypox outbreak in Europe, 2022. Joint report by WHO Regional office for Europe/ECDC, 2 June 2022. https://www.euro.who.int/__data/assets/pdf_file/0009/539046/ECDC-WHO-interim-advice-RCCE-Monkeypox-2-06-2022-eng.pdf
- WHO Monkeypox outbreak: update and advice for health workers, 26 May 2022. https://www.who.int/docs/default-source/coronaviruse/risk-comms-updates/update_monkeypox-.pdf?sfvrsn=99baeb03_1
- Risk communication and community engagement. Public health advice on the recent outbreak of monkeypox in the WHO European Region, 24 May 2022. https://www.euro.who.int/__data/assets/pdf_file/0004/538537/public-health-advice-monkeypox-eng.pdf

EPI - WIN Webinars and Updates

The recordings of the previous EPI-WIN Webinars related to current monkeypox outbreak:

- WHO monkeypox technical briefing for the transport and tourism sector, 5 October 2022, https://www.who.int/news-room/events/detail/2022/10/05/default-calendar/technical-briefing-on-monkeypox-for-transport-and-tourism-sector
- Managing stigma and discrimination in health-care settings in public health emergencies such as monkeypox (Sept. 22, 2022)
- How is monkeypox spreading? What do we know so far (July 27, 2022)
- Monkeypox outbreak and mass gatherings (June 24, 2022)

EPI-WIN updates

- Update 79: Monkeypox outbreak update: Situation - transmission - countermeasures
- Update 78: Monkeypox and mass gatherings
- Update 77: Monkeypox outbreak, update and advice for health workers

Laboratory and diagnostics

- Monkeypox: experts give virus variants new names, 12 August 2022. https://www.who.int/news/item/12-08-2022-monkeypox--experts-give-virus-variants-new-names
- WHO Laboratory testing for the monkeypox virus: Interim guidance, 23 May 2022. https://apps.who.int/iris/handle/10665/354488
- WHO Guidance on regulations for the transport of infectious substances 2021-2023, 25 February 2021. https://www.who.int/publications/i/item/9789240019720
- Genomic epidemiology of monkeypox virus. https://nextstrain.org/monkeypox?c=country

Disease Outbreak News and situation reports

- Monkeypox outbreak 2022: https://www.who.int/emergencies/situations/monkeypox-oubreak-2022
- Multi-country outbreak of monkeypox, External situation report #7- 5 October 2022: https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--7---5-october-2022
- Multi-country outbreak of monkeypox, External situation report #6- 21 September 2022: https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--6---21-september-2022
- Multi-country outbreak of monkeypox, External situation report #5- 7 September 2022: https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--5---7-september-2022
- Multi-country outbreak of monkeypox, External situation report #4- 24 August https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--4---24-august-2022
- Multi-country outbreak of monkeypox, External situation report #3 - 10 August 2022: https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--3---10-august-2022

- WHO Multi-country outbreak of monkeypox, External situation report #2 – 25 July 2022: https://www.who.int/publications/m/item/multi-country-outbreak-of-monkeypox--external-situation-report--2---25-july-2022
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Training and Education

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Other Resources

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- Clinical management and infection prevention and control for monkeypox: Interim rapid response guidance, 10 June 2022. https://www.who.int/publications/i/item/WHO-MPX-Clinical-and-IPC-2022.1
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Annex 1: Data, table and figure notes

Caution must be taken when interpreting all data presented. Differences are to be expected between information products published by WHO, national public health authorities, and other sources using different inclusion criteria and different data cut-off times. While steps are taken to ensure accuracy and reliability, all data are subject to continuous verification and change. Case detection, definitions, testing strategies, reporting practice, and lag times differ between countries/territories/areas. These factors, amongst others, influence the counts presented, with variable underestimation of true case and death counts, and variable delays to reflecting these data at the global level.

[i]'Countries' may refer to countries, territories, areas or other jurisdictions of similar status. The designations employed, and the presentation of these materials do not imply the expression of any opinion whatsoever on the part of WHO concerning the legal status of any country, territory, or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Annex 2: Confirmed cases of monkeypox by WHO region and country from 1 January 2022 to 16 October 2022, 17:00 CEST.

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

WHO Region	Country	Total Confirmed Cases	Total Deaths
African Region	Benin*	3	0
	Cameroon *	8	2
	Central African Republic	10	0
	Congo *	5	0
	Democratic Republic of the Congo	200	0
	Ghana	104	4
	Liberia *	3	0
	Mozambique	1	0
	Nigeria	530	7
	South Africa *	5	0
Eastern Mediterranean Region	Bahrain *	1	0
	Egypt	1	0
	Iran (Islamic Republic of) *	1	0
	Jordan *	1	0
	Lebanon	18	0
	Morocco *	3	0
	Qatar *	5	0
	Saudi Arabia *	8	0
	Sudan	18	1
	United Arab Emirates *	16	0
European Region	Andorra *	4	0
	Austria	321	0
	Belgium	779	1
	Bosnia and Herzegovina	9	0
	Bulgaria *	6	0
	Croatia *	29	0
	Cyprus *	5	0

	Czechia	70	1
	Denmark	189	0
	Estonia *	11	0
	Finland	41	0
	France	4064	0
	Georgia *	2	0
	Germany	3651	0
	Gibraltar *	6	0
	Greece	82	0
	Greenland *	2	0
	Hungary	78	0
	Iceland	16	0
	Ireland	198	0
	Israel	254	0
	Italy	881	0
	Latvia	6	0
	Lithuania *	5	0
	Luxembourg *	55	0
	Malta *	33	0
	Monaco *	3	0
	Montenegro *	2	0
	Netherlands	1223	0
	Norway *	92	0
	Poland	196	0
	Portugal	940	0
	Republic of Moldova *	2	0
	Romania	41	0
	Russian Federation *	2	0
	San Marino	1	0
	Serbia *	40	0
	Slovakia *	14	0
	Slovenia *	47	0
	Spain	7239	2
	Sweden	206	0
	Switzerland	521	0
	The United Kingdom	3673	0
	Türkiye	12	0
	Ukraine	5	0
Region of the Americas	Argentina	524	0
	Aruba *	3	0
	Bahamas *	2	0
	Barbados *	1	0
	Bermuda *	1	0
	Bolivia (Plurinational State of)	231	0
	Brazil	8621	6
	Canada	1410	0
	Chile	1064	0

	Colombia	2730	0
	Costa Rica	7	0
	Cuba	4	1
	Curaçao *	3	0
	Dominican Republic	52	0
	Ecuador	185	1
	El Salvador	10	0
	Guadeloupe *	1	0
	Guatemala	55	0
	Guyana *	2	0
	Honduras *	6	0
	Jamaica *	14	0
	Martinique *	1	0
	Mexico	2147	0
	Panama	16	0
	Paraguay	2	0
	Peru	2785	0
	Puerto Rico	191	0
	Saint Martin *	1	0
	United States of America	27 128	2
	Uruguay	10	0
	Venezuela (Bolivarian Republic of)	8	0
South-East Asia Region	India *	12	1
	Indonesia *	1	0
	Thailand	10	0
Western Pacific Region	Australia	138	0
	China	6	0
	Guam *	1	0
	Japan	7	0
	New Caledonia *	1	0
	New Zealand	23	0
	Philippines *	4	0
	Republic of Korea *	2	0
	Singapore *	19	0
	Viet Nam	1	0
Cumulative	109 countries/territories/areas	73 437	29