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Western Cape Government

Urgent

TO:	**Chief Directors**	**Metro Health Services (MHS)**
		Rural Health Services (RHS
		Strategy and Health Support
	District Managers:	**Metro Health Services (MHS) Substructures**
		Rural Districts
	Directors:	**Service Priorities Coordination**
		Medicine Management, Laboratory and Blood Services Support
		Emergency Medical Services
		Forensic Pathology Services
		Facilities Management: Environmental Health
		Communication
		Health Intelligence
		Clinical Services Improvement
		People Development
	Chief Executive Officers (CEOs):	**Central, Regional and District Hospitals**
	Managers:	**Private Hospitals and Private Clinics**
	Heads of Health / Executive Directors:	**Local Authorities/Municipalities/City of Cape Town**
		South African Military Health Services
		Border Management Authority
	Managers:	**National Health Laboratory Services**
		Private Laboratories
		General Practitioners
		Pharmacies

Circular H~~102~~/2024

PUBLIC HEALTH RESPONSE TO OUTBREAK OF MPOX: GUIDANCE ON PREPAREDNESS AND RESPONSE FOR SUSPECTED, PROBABLE, AND CONFIRMED CASES IN THE WESTERN CAPE, SOUTH AFRICA

The aim of the circular is to sensitize all healthcare workers (HCWs) and role-players of the current outbreak of mpox, and to ensure provincial readiness. This circular is an update of Circular H100/2022 issued on 11/07/2022.

A global outbreak of mpox has been ongoing since 2022 with cases reported in at least 117 countries as of end June 2024. As of 3 June 2024, there had been more than 90 000 confirmed cases and 185 deaths from all six WHO Regions. As of 30 April 2024, there has been 3,094 confirmed cases of mpox reported in the African region, resulting in 24 deaths.

"The multi-continent mpox outbreak has been characterised by sustained human-to-human transmission via direct skin-to-skin and sexual contact. Males account for over 96% of the cases with a median age of 34 years. Common symptoms include fever and rash, with half the cases reporting a genital rash. People living with advanced HIV disease are at high risk of severe disease. Since its peak in August 2022, the multi-country mpox case numbers have declined but transmission continues at low levels. In addition, mpox is also reported from a number of African countries, where zoonotic (i.e. animal to human) transmission occurs. Between 2023 and May 2024, nearly 20 000 cases of mpox have been reported from the Democratic Republic of Congo (DRC). Worryingly, studies report sexual transmission chains of the more virulent clade I mpox virus in eastern DRC."

1. BACKGROUND

1.1 As of July 18, 2024, a total of 22 laboratory-confirmed cases of mpox have been reported, including: 16 recoveries, three deaths, and three hospitalised active cases. Three provinces have reported cases, namely Gauteng Province (n=11), KwaZulu-Natal (n=10) and Western Cape (N=1). The reported cases were males between 17 and 43 years old, with some reporting co-morbidities (HIV-positive). The earliest recorded date of onset of symptoms of cases is in February 2024, and the majority of cases recorded date of onset of symptoms between May and June.

1.2 The risk of mpox to the South African population has been low, given the low transmissibility of the virus.

1.3 **It is important that:**

- The public be updated about the situation, and members of the public who experience symptoms of mpox must be urged to report to their nearest healthcare provider/facility for early detection and treatment, and
- **Healthcare workers be on alert and are provided with guidance for case detection, management and contact tracing.**

2. NATIONAL AND PROVINCIAL MPOX PREPAREDNESS AND RESPONSE

2.1 **The Mpox Incident Management Team was convened by the National Department of Health including all pillars of response (See Table 1 below).**

2.1.1 Provinces are to activate their provincial outbreak response teams, through conducting mpox readiness assessments, and developing preparedness plans and maintain a level of preparedness with clear roles and responsibilities for stakeholders.

2.1.2 Case management guidance documents have been updated and shared widely across networks of healthcare workers using various platforms.

2.1.3 Emergency application for tecovirimat via Section 21 SAPHRA approval has been undertaken.

2.1.4 Clinical management webinars were conducted on the 20th of June 2024. Efforts have been initiated to integrate mpox into an STI screening tool.

Table 1: National Mpox Public Health Response Interventions, from June 2024

	Pillar	Activities
1.	**Leadership, coordination, financing and Monitoring**	• Coordination of Incident Management Team Meetings • Activation of KZN and GP IMT at provincial level • Involvement of local partners in response • Assist with development of national and provincial response plans in affected provinces; or preparedness plans and maintaining a level of preparedness (conducting mpox readiness assessment)
2.	**Surveillance, epidemiological investigation and contact tracing**	• National weekly situation reports • Strengthening of contact tracing and active case finding
3.	**Laboratory: Laboratories, diagnostics and testing**	• Situations monitoring to ensure timeous preparedness to roll out testing to more areas. • Availability of guidelines, 2-pager • Receiving samples and providing results
4.	**Case Management, therapeutics, and care for survivors** **Operational support and logistics**	• Develop and circulate treatment protocol with clear guidance for use of tecovirimat • Fast-tracking of section 21 tecovirimat applications from provinces with cases. • Sourcing of tecovirimat
5.	**Vaccinations**	• Possibility use of mpox vaccine in South Africa amongst targeted population groups. • NAGI recommendation, administrative processes for sourcing/procurement, AEFI processes • Development of implementation plan/programme.
6.	**Infection prevention and control and water sanitation and hygiene**	• Develop an IPC prevention and response plan • Develop guidance for home isolation.
7.	**Risk Communication and community engagement**	• Develop a MPOX RCCE strategy • Identify specific RCCE need of KZN and GP • Engage relevant directorate at NDOH to support activities (HIV/TB/STI etc.) • Identify and engage NGOs working with risk groups. • Translation of IEC material in official languages • Conducting radio interviews and TV to address the associated stigma and fear.
8.	**Development Partner Coordination**	• Mapping of partners/NGOs at national, provincial, district level for collaboration.

2.2 **Port Health Services, public and private health practitioners/health facilities, should be on alert to detect and investigate person/patients that meets the signs and symptoms for suspected mpox.**

2.2.1 Any persons entering South Africa, must report any illness during travel or upon return from an endemic area to a healthcare professional, and provide information about all recent travel, immunisation history and contact with any known cases.

2.2.2 Residents and travellers to endemic countries should avoid contact with sick animals that could harbour monkeypox virus, e.g. rodents, marsupials, primates, and should refrain from eating or handling wild game. A good history is essential to rule out other differential diagnoses, including malaria.

2.2.3 Residents and travellers to affected countries, should report any illness to a healthcare professional, including information about all recent travel and attendance of mass gathering events, festivals, and parties, and contact with any known cases. The importance of hand hygiene by using soap and water or alcohol-based sanitiser should be emphasised.

2.3 **The NICD is equipped to test for mpox at the Centre for Emerging, Zoonotic and Parasitic Diseases (CEZPD).**

2.3.1 The Sequencing Core Facility will work to provide sequencing analysis rapidly, should a case be identified to determine relatedness to the current outbreak strain.

2.3.2 Private laboratories have capacity for testing, and contingency plans are in place if an increase demand for testing is required.

The measures listed below must be implemented by both public and private healthcare providers, health practitioners, sub-district, and district public health officials. Kindly note that provincial preparedness and response measures and standard operating procedures are guided NDOH-NICD and World Health Organization guidance, and interim guidance may be adapted in line with the epidemiological pattern of the outbreak in South Africa.

Table 2: Provincial measures for implementation to ensure early detection and response to suspected mpox cases

	Objective	Action
Surveillance, epidemiological investigation and contact tracing		
1.	**Intensify surveillance (detection, reporting and investigation) of suspected mpox cases**	✓ Port Health officials should continue with multi-layered screening measures which include visual observation, screening and completion and analysis of traveller's health questionnaire when entering the country through ports of entry (airports, border gates and seaports). ✓ **All healthcare workers/ professionals and facilities to be on alert to detect and investigate suspected mpox cases and their contacts** i.e., be aware of the suspected, probable, and confirmed mpox surveillance case definitions, and contact definition, as well as the reporting procedure. ✓ Ensure all districts and health facilities receive the case investigation form, contact tracing SOP, contact listing form, contact symptom monitoring tool and relevant guidelines/documents related to mpox. ✓ **Inform the NICD Hotline (0800-212-552) or Infectious Disease Specialist on call at Groote Schuur or Tygerberg Hospitals, for a risk assessment to be carried out and to guide laboratory investigations; AND notify the local and Provincial Communicable Disease Coordinator/Provincial NICD Epidemiologist, telephonically/email (if risk assessment identifies a suspected case):** o Ms Charlene A. Lawrence, 021-830-3727, 072-356-5146, Charlene.Lawrence@westerncape.gov.za o Ms Janine Bezuidenhoudt, 021-815-8741; 082-327-0394, Janine.Bezuidenhout@westerncape.gov.za ✓ **The attending clinician / doctor must complete the Mpox Case Investigation Form and the Mpox Contact Line Listing Form.** Submit the forms to the NICD and Provincial CDC Office, once the reported case is identified as a suspected case. ✓ Submit samples to NICD for specialised laboratory testing through a National Health Laboratory Service or a private laboratory. ✓ A draft screening tool has been developed for use at key population clinics for individuals that meet the suspected case definition for mpox. More information will be provided with regards to the use / implementation of the screening tool.

		✓ Please refer to Annexure 1 (provincial procedure) and Annexure 2 (flow diagramme/algorithm).
Case Management, Therapeutics and Infection Prevention and Control (IPC)		
2.	**Adequate clinical management of cases, Infection Prevention and Control (IPC) and mental health care in the health care setting**	✓ Guidelines for the clinical recognition, diagnosis and management of mpox in South Africa, June 2024 has been compiled, and recently issued. ✓ **The attached drafted guidelines address the mpox decision guide, laboratory investigation of mpox, management of mild/uncomplicated mpox cases, severe mpox cases, section 21 Tecovirimat access process, and general management considerations (e.g. skin lesions, pain, ocular manifestation and mental healthcare).** ✓ Clinical management is supportive and will vary from case-to-case but is typically self-resolving. Tecovirimat is an anti-viral agent that may be used for people with severe mpox disease. ✓ The WHO recommends that patients with suspected or confirmed mpox with mild, uncomplicated disease and at high risk for complications can isolate at home, for the duration of the infectious period, as long as a home assessment determines infection, prevention and control (IPC) conditions are fulfilled at home setting. (See NICD: Considerations for management of uncomplicated cases of mpox through home isolation) ✓ Individuals with suspected or confirmed mpox should avoid close contact with others until all lesions have healed, and scabs dried off. This should include staying at home and self-isolating unless requiring medical assessment or care, or other urgent health and wellbeing issues. **<u>Mental Health Care</u>** ✓ **Basic psychosocial support skills are essential for management of all patients and represent an integral part of care that should be provided for all.** See page 23 with regards to mental healthcare, and Appendix 1, in the attached Guidelines for clinical recognition, diagnosis and management of mpox. o Brief interventions such as motivational interviewing to assist in contact tracing, and health education by providing key messages on how to stop the spread of mpox. o Referral to counselling and psychosocial support services (if needed) can be arranged to help clients come to terms with the diagnosis. ✓ **A Case Management Algorithm as part of the Western Cape PACK guidelines were developed for use at healthcare facilities.** **<u>IPC in Healthcare setting:</u>** ✓ **Observe the appropriate infection control procedures (i.e., isolation with universal precautions.** ✓ As soon as a decision is made to proceed based on a presumptive diagnosis of mpox, measures should be applied to minimize exposure of healthcare workers, other patients, and close contacts. ✓ **Please see "Infection Prevention and Control (IPC) Standard Operating Procedure for Healthcare Management of mpox patient".** ✓ **Health workers should always follow standard precautions and perform a risk assessment to evaluate the need to use additional precautions. Standard precautions include:** o hand hygiene o respiratory hygiene and cough etiquette o patient placement o personal protective equipment o aseptic technique o safe injections and sharps injury prevention o environmental cleaning and disinfection o handling of laundry and linen o decontamination and reprocessing or reusable patient care items and equipment

		○ waste management. ✓ **See the management of deceased patients in terms of IPC measures, and follow-up of exposed healthcare workers**.
Operational support and logistics		
3.	**National, Provincial and District Training on Case Management and Public Health Response**	✓ A mpox clinical management webinar was held in June 2024. The recording of the sessions can be found on the on the link below: • https://www.youtube.com/watch?v=SYHScnwuhJc • https://medtalkz.com/cgi-bin/medtalkz/showevents.pl?moreinfo:261 ✓ Healthcare workers and public health officials at health facilities, districts, sub-structure, and sub-district offices should be trained on case detection, investigation, and contact tracing. ✓ Further national and provincial training sessions/webinars may be conducted, and districts should ensure the circular, annexures and training presentations/slide decks are shared widely. ✓ A mpox training pack will be made available through the People Development Centre (PDC); and provincial webinars will be organized as the need arise. Copies of national webinar presentations conducted in provinces are attached for your convenience.
Risk Communication and Community Engagement		
4.	**Community awareness and ensuring effective community involvement**	✓ Provincial Communication and Health Promotion should prepare a communication plan and Information Education and Communication (IEC) material in line with NDOH-NICD Plans. ✓ Ensure mpox IEC material (posters, pamphlets, frequently asked questions, what you need to know etc.), are made available to the public and target groups. ✓ National Department of Health will issue statements on confirmed mpox cases in South Africa. The Provincial Communication Unit will compile a "holding statement"/media if/when required and respond to possible media enquiries and /or refer to the NDOH-NICD. ✓ Districts and sub-districts should ensure that available and appropriate IEC material are used during response activities e.g., information for the mpox case and their contacts. ✓ Partner collaboration e.g. working closely with community based and civil society organizations that have direct and trusted relationships with affected population groups is essential. ✓ Most, but not all cases of mpox in newly affected areas are detected among MSM. All efforts should be made not to stigmatize this or any affected population. ✓ Organized gatherings and events should be leveraged to conduct outreach and to provide practical public health messages. **Resources** ➢ Risk communication and community engagement (RCCE) for mpox outbreaks: https://www.who.int/publications/i/item/WHO MPX RCCE 2022. ➢ Reducing Stigma in MPOX Communication and Community Engagement: https://www.cdc.gov/poxvirus/monkeypox/pdf/Monkeypox_Stigma_508.pdf
✓	**Coordination and Epidemiological investigations**	
5.	**District Preparedness and Response Plans, activation of outbreak response teams, and rapid response for case finding**	✓ The Subnational MPOX readiness assessment tool will be made available to district to identify gaps; and use as guide for preparing preparedness and response plans. ✓ **District CDC Coordinators/equivalent should prepare a mpox preparedness and response plan** to include the listed aspects of preparedness and response in this table i.e., surveillance, training, risk communication, case management, contact tracing teams, contact identification and options of contact monitoring (taking district resources into consideration). ○ **Kindly submit the district plans with the list of contact tracing teams and district focal persons, to the Provincial CDC Office at your earliest convenience.** ✓ Each district should establish contact tracing teams with clear roles and responsibilities.

		✓ Each contact tracing team must have a focal person who shall liaise with the district CDC Coordinator/equivalent and supervise the team activities. ✓ Train contact tracing teams on the identification of contacts, completion of contact listing form and monitoring of contacts.
6.	**Contact Identification and forward contact tracing**	✓ As soon as a suspected case is identified, contact identification, and contact tracing should be initiated, while investigations is ongoing to determine if the case is probable or confirmed. If case is discarded, contact tracing may be aborted. ✓ Investigate suspected cases and rumours that have been reported. ✓ Record details of all contacts identified on the Contact Listing Form. ✓ Assign a designated officer/s to ensure daily symptom monitoring (options: self-monitoring or telephonic or face-to-face) is completed over a 21-day reporting period from last contact with a case. Monitor all contacts for onset of signs and symptoms as per the Mpox Monitoring Tool. Submit Contact Monitoring Tools to the district CDC coordinator/equivalent for submission to the provincial CDC. ✓ Quarantine or exclusion from work are not necessary during the contact tracing period, as long as no symptoms develop. Contacts without any symptoms must rigorously practice hand hygiene and respiratory etiquette, avoid contact with immunocompromised people, children, or pregnant women, and avoid any form of sexual contact. ✓ If a contact develops initial signs and symptoms (e.g., fever) other than rash, contact should be isolated and closely monitored for rash development. If rash develops, isolation is continued, and contact is assessed as a suspected case as per the guidelines.
7.	**Ensure regular provincial reporting on case investigation and contact tracing to the NICD-NDOH team**	✓ Data management of all line lists (collate, data cleaning etc.) within the province and district must be ensured on a standardised Ms Excel case and contact line list. ✓ The contact line lists must be submitted to the provincial CDC team by the health practitioner/district once a suspected/confirmed case has been identified. ✓ Follow-up of contacts by the district contact tracing team/s and the completion of the contact demographic section on the Contact Monitoring Form must be used to update the contact line list. Keep the Provincial CDC office abreast of all case and contact follow-up activities. ✓ The provincial NICD epidemiologist is responsible for collation of the case and contact line listing and submission to the NDOH-NICD team. Extra support will be sought from within the department or NICD, if required.
8.	**Provide provincial guidance on preparedness and response activities (case detection, investigation, and contact tracing) in line with NDOH-NICD-WHO guidance**	✓ Relevant Provincial CDC Stakeholders and Outbreak Response members (CDC, Environmental Health, Infection Control, Clinical management, Communication etc.) provide support to the district contact tracing teams when the need arise. ✓ Ensure all districts receive the contact tracing SOP, case investigation form, contact listing form, contact symptom monitoring tool and relevant guidelines/documents/training material related to mpox. ✓ Data management of line list (collate, data cleaning etc.) from all districts and health facilities. ✓ Regular submission of provincial line lists to the National team (NDOH-NICD). ✓ Preparation of provincial situation reports.
Counter measures: Vaccinations		
9.	**Access of mpox vaccine to high risk / targeted groups**	✓ Await National Department of Health Mpox Vaccination strategy and guidance for implementation when vaccines become available in the country.

2.4 **Find attached the following resource documents for your convenience:**

- Mpox Preparedness: An update for Physicians, Accident and Emergency Practitioners and Laboratorians, compiled 4 July 2022, updated May 2024
- Guidance for laboratory investigation of suspected cases of Mpox in South Africa, compiled 30 August 2022, Updated 15 March 2023
- Standard Operating Procedure for Contact Tracing in Response to Detection on mpox in South Africa, March 2023
- Infection Prevention and Control (IPC) Standard Operating Procedure for Healthcare Management of Mpox, March 2023
- Mpox: Considerations for the management of uncomplicated cases of mpox through home isolation, March 2023
- Guidelines for the clinical recognition, diagnosis, and management of mpox in South Africa, June 2024 (draft)
- Sexually Transmitted Infections (STIs)/MPOX/HIV Screening Tool (draft)
- Presentation: NICD Mpox Clinical Management, presented 9 July 2024
- Declaration of Mpox as a Notifiable Medical Condition, February 2023
- Case Investigation Form: Mpox
- Mpox Contacts Listing Form, March 2023
- Mpox Contacts Monitoring Tool, March 2023
- Mpox Frequently Asked Questions, compiled March 2022, updated May 2024
- Posters: What is mpox, Help Stop the spread of mpox; Prevent mpox by avoiding risky activities; mpox key facts, mpox testing.
- Provincial webinar presentations: MPOX clinical presentation and management and public health response
- PACK WC Mpox diagnosis and Management, Version 1, July 2024

Some of the above-mentioned documents and updates may be accessed via the NICD website
https://www.nicd.ac.za/diseases-a-z-index/mpox-2/

- **Annexure 1:** Provincial Procedures for the detection, reporting and investigation of suspected mpox cases and contacts, dated 18/07/2024
- **Annexure 2:** Procedure for the reporting and investigation of suspected, probable and confirmed mpox cases in the Western Cape (Algorithm, Version 2, updated 26/07/2024)

Kindly bring the content of this circular under the attention of all healthcare workers at all health facilities, public health officials from districts, subdistricts, and relevant stakeholders.

Any further updates on case management, surveillance, case investigation and contact tracing for mpox received from the NDOH-NICD will be communicated to all stakeholders.

We trust on your continued support in the control of communicable diseases in the province.

Yours sincerely

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DR J.O. ARENDSE

CHIEF DIRECTOR: EMERGENCY AND CLINICAL SERVICES SUPPORT

DATE: 8 Aug 2024

ANNEXURE 1: PROVINCIAL PROCEDURES FOR THE DETECTION, REPORTING AND INVESTIGATION OF SUSPECTED MPOX CASES AND CONTACTS, 26 JULY 2024

Please read this annexure in conjunction with the mpox documents on the NICD website; the draft Guideline for the Clinical recognition, diagnosis and management of mpox in South Africa, June 2024, and Annexure 2**:** Procedure for the Reporting and Investigation of suspected, probable, and confirmed mpox cases in the Western Cape (Algorithm, Version 2, updated 26/07/2024)

1. Background

In May 2022, a multi-country outbreak of mpox (previously called monkeypox) in humans were reported in several WHO regions that were not endemic for monkeypox virus. As of January 2023, there had been more than 90 000 confirmed cases and 185 deaths in 117 countries from all six WHO regions. Since the peak of the epidemic in August 2022, the multi-country mpox cases have declined but low level of transmission continued. In addition, mpox is also reported from a number of African countries, where zoonotic transmission is also possible (i.e. animal to human). Between 2023 and May 2024, nearly 20 000 cases of mpox have been reported from the Democratic Republic of Congo. From June 2022 to 18 July 2024, a total of 27 mpox cases were confirmed in South Africa (2022= 5 unlinked cases in males; 2023 = no cases reported; 2024 = 22 cases, some linked some unlinked cases, males, age range 17 – 43 years old).

2. Transmission

- Monkeypox virus can be transmitted to a person upon contact with the virus from an animal, human, or materials contaminated with the virus.
- Person-to-person transmission of the virus is through close contact (i.e., prolonged face to face contact, kissing).
- Entry of the virus is through broken skin, respiratory tract, or the mucous membranes (eyes, nose, or mouth).
- In the current outbreak, cases of transmission through sexual contact have been noted.
- **A person is contagious from the onset of the rash/lesion through the scab stage. Once the scabs have fallen off, a person is no longer contagious.**

3. Signs and symptoms

- **The incubation period for mpox is on average 7 -14 days but can range from 5 -21 days**.
- **Initial symptoms include fever, headache, muscle aches, backache, chills, and exhaustion. Lymphadenopathy is also noted,** Skin lesions (or rash) develops between 1 – 3 days following onset. The lesions are often encountered on the face, on the extremities including the soles of the feet and palms of hands. Ulceration of the mouth and genitals may also be noted. The lesions progress through several stages before scabbing over and resolving. Notably all lesions of the rash will progress through the same stage at the same time.
- A person is contagious from the onset of the rash/lesions through the scab stage. Once all scabs have fallen off, a person is no longer contagious.
- Case fatality rate is very low, and most cases will not need hospitalisation or specific treatment. More severe cases have been historically reported in individuals with untreated HIV disease, children, and pregnant women.

4. Differential diagnosis

- Other rash illness, some commonly found, include chickenpox, hand-foot-and-mouth, measles, bacterial skin infections, syphilis, molluscum contagiosum and drug-related rashes. Lymphadenopathy in the prodromal phase of illness distinguishes mpox from chickenpox.

5. Response to a suspected mpox case

- **Establish that the patient meets the signs and symptoms for suspected mpox.** Please refer to the suspected, probable, and confirmed case definitions listed in the documentation. The Guidelines for the recognition, diagnosis and management of mpox in South Africa, June 2024 (including cases management presentation) and the Mpox Case Management Algorithm as part of the provincial PACK – these documents provide details with regards to detection, case management and investigations.
- Observe appropriate infection control procedures (i.e., isolation with universal precautions). **As soon as the decision is made to proceed based on a presumptive diagnosis of mpox, measures should be applied to minimize exposure of healthcare workers (HCWs), other patients and other close contacts**.
- Clinical management is supportive and will vary from case to case, but typically cases and symptoms are self-resolving. Tecovirimat is an antiviral agent that may be used for people with severe mpox disease.
- Provide psychosocial support through brief interventions such as motivational interviewing to assist in contact tracing, and health education by providing key messages on how to stop the spread of mpox. Referral to counselling and psychosocial support services (if needed) can be arranged to help clients come to terms with the diagnosis.
- Individuals with possible, probable, or confirmed mpox should avoid close contact with others until all lesions have healed, and scabs dried off. This should include staying at home and self-isolating unless requiring medical assessment or care, or other urgent health and wellbeing issues.
- **Contact the NICD Hotline (0800-212-552) or the Infectious Disease (ID) Specialists at Tygerberg or Groote Schuur Hospital, for a risk assessment to be carried out and to guide laboratory investigations; and notify the Provincial CDC Coordinator,** Ms Charlene A. Lawrence, 021-830-3727, or 072-356-5146, Charlene.Lawrence@westerncape.gov.za **or Provincial NICD Epidemiologist**, Ms Janine Bezuidenhoudt,021-815- 8790; 082-327-0394; Janine.Bezuidenhout@westerncape.gov.za , and

provincialcdc@westerncape.gov.za - **telephonically/email** so that the additional case finding, and extensive contact tracing can be conducted.

- **Ensure the case is notified telephonically and through the NMC App and complete the Mpox Case Investigation Form (Annexure B) and the Contact Line list (Annexure A) to the Provincial CDC unit.**
- **Submit samples to private laboratory for testing, or local public health laboratory for specialised laboratory testing at the NICD.**
- **Identification and monitoring of contacts should commence as soon as a suspected case is identified** (see NDOH-NICD Standard Operating Procedure for Contact Tracing in Response to Detection on mpox in South Africa, for detail) i.e.:
    - Use the contact case definition to identify contacts.
    - Contacts should be recorded on a Mpox Contacts Listing Form (Annexure A) by the Infection Prevention and Control Practitioner (IPC) or attending doctor/clinician at the time of presentation at the health practitioner/facility and when samples have been collected. If this was not done the District CDC Coordinator /equivalent is responsible for recording contacts on the contact list.
    - Contact monitoring (options: self-monitoring, telephonic and face-to-face) follow-up) should be done by completing the daily symptom monitoring tool. District/sub-district decisions on use of the contact monitoring options must be made and should take into consideration resources and contact risk levels etc.
- **Data management should occur regularly by the appropriate level i.e.,** case and contact line list; and contact monitoring forms must be completed and submitted to the Provincial NICD Epidemiologist and via the CDC Unit team email: provincialcdc@westerncape.gov.za

6. Sample collection and testing for mpox

- **See the laboratory investigation guidance for suspected mpox cases.** The following specimens may be submitted for investigations: Skin lesion material, throat swab, rectal or genital swabs (if lesions present), semen, plasma, and serum.
- **The specimens should be packaged in accordance with the guidelines for the transport of dangerous biological goods (i.e., Category A shipments with triple packaging using absorbent material) and transported directly and urgently to:**
  Centre for Emerging Zoonotic and Parasitic Diseases, Special Viral Pathogens Laboratory, National Institute for Communicable Diseases (NICD), National Health Laboratory Service (NHLS), 1 Modderfontein Rd, Sandringham, 2131
- Ensure that completed case investigation form accompanies the specimens.
- Samples should be kept cold during transport (cold packs are sufficient).
- The local National Health Laboratory Services and private laboratories may be contacted for any queries with regards to mpox testing.

7. Infection Prevention and Control, Personal Protective Equipment (PPE) and Healthcare worker risk

- Observe appropriate infection control procedures (i.e., isolation with universal precautions). As soon as the decision is made to proceed based on a presumptive diagnosis of mpox, measures should be applied to minimize exposure of healthcare workers, other patients, and other close contacts.
- Please refer to the Infection Prevention and Control (IPC) Standard Operating Procedure for Healthcare Management of mpox patient, for further detailed measures.
- **Management of deceased patients**
    - Handling of the deceased should be kept to a minimum.
    - Perform hand hygiene and wear PPE (gloves, gown, respirator, [e.g. N95, FFP2] and eye protection) during handling of waste.
    - Ensure that any leakage of body fluids is contained.
    - The body should be wrapped in a cloth or shroud and transferred to the mortuary as soon as possible.
    - Family and friends may view the body after it has been prepared for burial, in accordance with local customs. They should not touch or kiss the body and should clean their hands with soap and water or alcohol-based hand sanitizer after the viewing.
- **Management of exposed healthcare workers (HCWs)**
    - HCWs should notify infection control, occupational health, and public health surveillance authorities of possible exposures to receive a medical evaluation and instructions to follow-up.
    - HCWs who have had an occupational exposure (i.e. not wearing appropriate PPE) do not need to be excluded from work if they are asymptomatic but should undergo active surveillance for symptoms for 21 days post exposure; and be instructed not to work with vulnerable patients.
    - HCWs with exposure to a person with confirmed mpox should undergo medical evaluation and consideration for possible interventions (vaccination or PEP) if available.

8. Public Health Response: Case Detection, Investigation, and Contact Tracing (See Annexure 2)

8.1Case and Contact Definitions

NB: Kindly note that surveillance case definitions may be adjusted as additional information about the outbreak becomes available.

CASE AND CONTACT DEFINITIONS

SUSPECTED CASE

Any person presenting with an unexplained acute rash, swollen lymph nodes or mucosal lesions

OR

A person who is a contact of a probable or confirmed mpox case in 21 days before signs or symptoms onset and presents with one or more of the following:

- Headache
- Acute onset of fever (>38.5°C)
- Lymphadenopathy (swollen lymph nodes)
- Myalgia (muscle pain/body aches)
- Backache
- Fatigue / profound weakness

AND

For which the following differential diagnoses are excluded: chickenpox, measles, bacterial skin infections, syphilis, molluscum contagiosum, allergic reactions and other locally relevant common cause of papular or vesicular rash.

NB! It is not necessary to obtain negative laboratory results for differential diagnoses listed above to classify as suspected case.

PROBABLE CASE

A person meeting the suspected case definition AND one or more of the following:

- An epidemiological link* to a probable or laboratory-confirmed case of mpox in the 21 days prior to symptom onset
- Reported travel history to a mpox endemic country/areas reporting sustained transmission in 21 days before symptom onset
- Had multiple and/or casual sexual partners in the 21 days before symptom onset
- A positive result of an orthopoxvirus serological assay, in the absence of smallpox vaccination or other known exposure to orthopoxviruses.

*****Prolonged face-to-face exposure without appropriate PPE; direct physical contact with skin or skin lesions including sexual contact; contact with contaminated materials e.g. clothing, bedding.*

CONFIRMED CASE

A person with laboratory-confirmed for monkeypox virus by detection of unique sequences of viral DNA either by real-time polymerase chain reaction (PCR) and /or sequencing.

CONTACT

A person who had come into contact with a suspected, probable or laboratory-confirmed mpox case since onset of symptoms AND has had one or more of the following exposures:

- Direct physical contact with skin/skin lesions
  - touching, hugging, kissing, intimate oral or sexual contact
- Direct contact with contaminated materials
  - clothing, bedding, including materials dislodged from bedding or surfaces during handling of laundry/cleaning contaminated rooms.
- Prolonged face-to-face exposure in close proximity **without appropriate personal protective equipment (PPE)**
  - persons living in the same household as a case,
  - people working closely/in the same environment as a case (e.g., colleagues, classmates)
  - healthcare workers or other person providing direct care
- Respiratory or eye mucosal exposure to lesion material from an infected person.

8.2 Contact Tracing

8.2.1 When to initiate contact tracing for mpox

- Identification of contacts should commence as soon as a suspected case is identified (i.e., during cases investigation) and contacts should be recorded in a contact listing form
- Contact listing form should be competed as the time of sample collection and completion of the case investigation form by the person interviewing the suspected case (e.g., facility infection prevention and control (IPC) focal point, attending clinician)
- If the contact listing form cannot be completed at this time, the district communicable disease control coordinator (CDCC) or equivalent (for districts without CDCC) will be responsible for ensuring that the form is completed when notified of the suspected case.
- Contact monitoring (follow-up) should be done by completing the daily symptom monitoring tool. Monitoring should start immediately; however, if laboratory results come back negative, contacts should be dropped from further follow-up.
- Monitoring of contacts may switch from immediate following-up once a suspected case is identified, to follow-up after laboratory confirmation depending on the number of contacts to be followed up should number of cases increase.

8.2.2 Monitoring of contacts

- Contacts should be monitored by any of the three options below using the symptoms monitoring tool. Options to use can be guided by availability of resources within districts/provinces.

- Self-monitoring (passive monitoring)
    - Contacts should be provided with the necessary information such as signs and symptoms, transmission, permitted activities etc. and what to do should symptoms develop
    - Contacts could be provided with thermometers (this will depend om availability of resources and options for monitoring decided upon by the district/contact tracing teams) for daily temperature check, at least twice daily.
    - If symptoms develop, contact should notify the officer designated to observe/monitor the contact or visit a healthcare facility so that necessary public health measures can be instituted.
- Telephonic monitoring (active monitoring)
    - Designated officer is responsible for at least once a day to see if the person under observation has self-reported signs and symptoms.
    - If signs and symptoms have been reported, the designated officer should follow the necessary public health measures.
- Face-to-face monitoring (direct monitoring)
    - A designated officer to physically visit the person being monitored to examine for signs/symptoms of illness
- Monitoring to be done at least daily for the onset of signs / symptoms for a period of 21 days from last contact/exposure with a probable or confirmed case.
- Quarantine or exclusion from work are not necessary during the contact tracing period, as long as no symptoms develop. Contacts without any symptoms must rigorously practice hand hygiene and respiratory etiquette, avoid contact with immunocompromised people, children, or pregnant women, and avoid any form of sexual contact.
- If a contact develops initial signs and symptoms (e.g., fever) other than rash, contact should be isolated and closely monitored for rash development. If rash develops, isolation is continued, and contact is assessed as a suspected case as per the guidelines.

8.2.3 Data Management

- Data should be managed at respective levels. All contact line lists and symptom monitoring forms with completed demographic information should be forwarded once a confirmed case/s has been identified.
- The contact line lists must be submitted to the provincial CDC team by the health practitioner/district once a suspected/confirmed case has been identified.
- Submit the contact line list and contact monitoring tool information to the Provincial NICD Epidemiologist, via email on Janine.Bezuidenhout@westerncape.gov.za (include the Provincial CDC team) on a regular basis in order to compile and send the NDOH-NICD team (outbreak@nicd.ac.za).

9. Contact Details of Provincial and "District CDC Coordinators" or equivalent

The listed district CDC coordinators / equivalent is responsible to coordinate and facilitate the response i.e., case finding, investigation, contact identification, forward contact tracing and monitoring. The district preparedness and response plans that includes the listing of contact tracing coordination and tracing within the district.

Province / District	CDC Coordinator/Equivalent	Contact details (tel, cell, email)
Western Cape, Communicable Disease Control, CDC	Ms Charlene Lawrence	021-830-3727 / 815-8660, 072-356-5146 Charlene.Lawrence@westerncape.gov.za
	Ms Janine Bezuidenhoudt	021-815-8790, 082-327-0394 Janine.Bezuidenhout@westerncape.gov.za
	Ms Washiefa Isaacs	072-310-6881 Washiefa.Isaacs@westerncape.gov.za
	Ms Levani Naidoo	021-815-8676, 060-508-0896 Levani.Naidoo@westerncape.gov.za
	Ms Farzanah Frieslaar	021-815-8740, 079-368-3693 Farzanah.Frieslaar@westerncape.gov.za
	Mr. Francois Booysen	021-815-8661, 061-600-3385 Francois.Booysen@westerncape.gov.za
	Ms Felencia Daniels	021-815-8660, 082-585-7295 Felencia.Daniels@westerncape.gov.za
Metro Health Services Cape Town (City of Cape Town) Metro Health Services	Dr. Natacha Berkowitz	021-400-6864, 083-406-6755 Natacha.Berkowitz@capetown.gov.za
	Prof. Hassan Mahomed	021-815-8697, 082-334-5763 Hassan.Mahomed@westerncape.gov.za
	Ms Anneline Janse Van Rensburg	021-815-8696, 082-897-2310 Anneline.Jansevanrensburg@westerncape.gov.za
Rural Health Services	Dr. David Pienaar	021-483-9901, 083-275-9333 David.Pienaar@westerncape.gov.za
	Ms Eugenia Sidumo	044-695-0047, 082-735-5463 Eugenia.Sidumo@westerncape.gov.za
Cape Winelands	Ms Surina Neethling	023-348-8120, 072-227-6058 Surina.Neethling@westerncape.gov.za
Central Karoo	Ms Annalette Jooste	023-414-3590, 083-445-8106

		Annalette.Jooste@westerncape.gov.za
Garden Route	Mr. Eugene Engle	044-803-2752, 083-441-8555 Eugene.Engle@westerncape.gov.za
Overberg	Ms Beatrice Groenewald	028-214-5852, 082-969-9297 Beatrice.Groenewald@westerncape.gov.za
West Coast	Ms Hildegard Van Rhyn	022-487-9354, 082-871-9709 Hildegard.VanRhyn@westerncape.gov.za

10. Roles and Responsibilities

The table below indicates the roles and responsibilities of officials at the different levels within the health system. Kindy read the table in conjunction with the algorithm/procedure flow diagram.

Table 1: Roles and responsibilities of officials with regards to mpox preparedness and response

	Level	Who	Roles and Responsibilities
1.	**Health Facility**	**Attending doctor, Infectious Disease Specialist, Infection Control and Prevention Practitioners, facility managers**	• Ensure all healthcare workers within their facility / institution is provided the mpox information (CIF, contact listing and monitoring forms, SOPs, screening tools, IEC material) • Ensure detection, reporting to NICD hotline for risk assessment and provincial CDC once the patient has been identified as a suspected case; ensure specimen collection, clinical management of cases at health facility level, and IPC measures are implemented as required. • Management of the monitoring of healthcare worker exposed cases.
2.	**District / substructure / sub-district office levels**	**District CDC Coordinators or equivalents (individuals responsible for CDC, surveillance, environmental health, IPC, health programmes, Facility-based and Comprehensive Health Programmes, Specialised Support Services, public health specialists, Epidemiologist etc.)**	• Activation of the district outbreak response team and establishment of contact tracing teams with clear roles and responsibilities • Each contact tracing team must have a focal person who shall liaise with the district CDCC or equivalent and supervise the team activities. The team activities to include the following: o Investigate suspected cases and rumours reported. o Record details of all contacts identified on the contact listing form (Annexure A) o Monitor all contacts for onset of signs and symptoms as per the monitoring tool (Annexure C) o If contact develops signs and symptoms inform the district CDC coordinator/equivalent so that the necessary public health measures are instituted, and relevant stakeholders are informed. o Submit contact monitoring tools to the district CDC coordinator or equivalent for submission to the provincial CDC. • Training of contact tracing teams on the identification of contacts, completion of contact listing form and monitoring of contacts. • Assign a designated officer/s to ensure daily symptom monitoring is/are completed. • Data management of all line lists (collate, data cleaning etc.) within the district. • Submit the district line lists to the provincial CDC team. • Completion of the contact demographic section on the contact monitoring form, to update the contact line list.
3.	**Provincial Level**	**Provincial DOH: Communicable Disease, EMS, Quality Assurance, Environmental Health, Communications, Health Promotion, Forensic Pathology Services etc. in collaboration with Port Health, NHLS and Private laboratories (provincial stakeholders)**	• The Chief of Operations, Chief-Director: ECSS, Director: SPC to provide guidance, leadership for planning/preparedness and response activities that may include financing and supply chain matters. • Relevant Provincial Outbreak Response Team members (CDC, Environmental Health, infection control, Communication, case management etc.) provide support to the district contact tracing teams when the need arise. • Coordinate the provincial preparedness and response activities with varies sectors and disciplines. o Complete the WHO-Afro Region Mpox Preparedness Checklist to identify gaps; and prepare a provincial response plan. o Manage the response according to the Incidence Management System Structure with specific pillars e.g. Surveillance and laboratory; Case Management; Risk Communication and community engagement;

			Access to counter measures and research – aligned to the core components of the WHO Health emergency prevention, preparedness, response, and resilience (HEPR) framework. • Ensure all districts receive the contact tracing SOP, contact listing form, contact symptom monitoring tool and relevant guidelines / documents related to mpox. • Training on cases management for clinical staff and contact tracing teams on the identification of contacts, completion of contact listing form and monitoring of contacts. • Data management of line list (collate, data cleaning etc.) from all districts. • Daily submission of provincial line lists to the National team (NDOH-NICD).
4.	**National level**	**NDOH: Communicable Disease Control directorate, Surveillance, Quality Assurance, Port Health, and Environmental Health** **NICD: Outbreak Response Unit, Centre for Emerging Zoonotic and Parasitic Diseases, Special Viral Pathogens Laboratory**	• Strengthen national and sub-national preparedness and response capacities through implementation of evidence-based interventions aligned to the five core components of the WHO HEPR framework. • Develop clinical management, IPC, Risk Communication and country level response guidelines and plans. • Develop contact listing form, contact monitoring tool, and contact tracing SOP. • Provide approved contact listing form, symptom monitoring tool, SOP, and other relevant documents to all provinces for distribution. • Provide support to all provinces and give regular updates and feedback to provinces.

11. Contact details for public health officials responsible for Communicable Disease Control and Outbreak Response

Table 2. Public health officials responsible for Communicable Disease Control, Environmental Health, Pharmacy Services and CDC coordinators / equivalent, In the Western Cape, 5 July 2024 (not an extensive list that contains all stakeholders)

	Province	Name	Designation	Tel/Cell	Email
1.	**Emergency and Clinical Services Support (ECSS)**	Dr Juanita Arendse	Chief Director	021-815-8612 (tel) 083-680-8719 (cell)	Juanita.Arendse@westerncape.gov.za
2.	**Service Priorities Coordination (SPC)**	Dr Hillary Goeiman	Director: SPC	021-815-8741 (tel) 083-333-1320 (cell)	Hilary.Goeiman@westerncape.gov.za
3.	**SPC: Communicable Disease Control**	Ms Charlene Lawrence	Provincial CDC Coordinator	021- 830-3727 (tel) 072-356-5146 (cell)	Charlene.Lawrence@westerncape.gov.za
4.		Ms Janine Bezuidenhoudt	Provincial NICD Epidemiologist	021-815-8663 (tel) 082-327-0394 (cell)	Janine.Bezuidenhoudt@westerncape.gov.za janineb@nicd.ac.za
5.		Ms Washiefa Isaacs	CDC: Provincial NICD NMC Surveillance Manager	072-310-6881(cell)	Washiefa.Isaacs@westerncape.gov.za washiefai@nicd.ac.za
6.		Ms Levani Naidoo	ASD: Outbreak Response	021-815-8676 (tel) 060-508-0896 (cell)	Levani.Naidoo@westerncape.gov.za
7.		Ms Farzanah Frieslaar	ASD: EPI Disease Surveillance	021-815-8740 (tel) 079-368-3693 (cell)	Farzanah.Frieslaar@westerncape.gov.za
8.		Mr. Francois Booysen	CDC: Administrative Officer	021-815-8661(tel) 061-600-3385 (cell)	Francois.Booysen@westerncape.gov.za
9.		Ms Felencia Daniels	CDC: Administrative Clerk	021-815-8660 (tel) 082-585-7295 (cell)	Felencia.Daniels@westerncape.gov.za
10.		Ms Sonia Botha	Provincial EPI Coordinator	021-815-8810 (tel) 083-576-7893 (cell)	Sonia.Botha@westerncape.gov.za
11.	**Pharmaceutical Services**	Ms Kim Lowenherz	Director: Pharmacy Services	021-483-8702 (tel) 083-269-4308 (cell)	Kim.Lowenherz@westerncape.gov.za
12.		Ms Helen Hayes	Manager: Pharmaceutical Services	021-483-4567 (tel) 072-909-2838 (cell)	Helen.hayes@westerncape.gov.za
13.		Ms Yasmina Johnson	Pharmaceutical Services: Policy Specialist	021-483-6198	Yasmina.Johnson@westerncape.gov.za

14.	**Facilities Infrastructure Management**	Mr. Stanley Nomdo	Assistant Director: Environmental Health	021-918-1564 (tel) 072-133-5644 (cell)	Stanley.Nomdo@westerncape.gov.za
15.	**Assurance: Infection Prevention and Control**	Dr. Ziyanda Vundle	Public Health Specialist	082-862-4331 (cell)	Ziyanda.Vundle@westerncape.gov.za
16.	**Communication**	Ms Marika Champion	Director	074-011-2244 (tel) 021-483-3235 (cell)	Marika.champion@westerncape.gov.za
17.	**Disaster Medicine and Special Events**	Dr. Wayne Smith	Head of Disaster Medicine and Special Events	021-815-8819 (tel) 082-991-0760 (cell)	Wayne.Smith@westerncape.gov.za
18.	**Emergency Medical Services (EMS)**	Mr. Craig Wylie	Director: Emergency Medical Services	021-508-4517(tel) 078-800-5644(cell)	Craig.Wylie@westerncape.gov.za
19.	**Tygerberg Hospital**	Prof. Jantjie Taljaard	Infectious Disease Specialist	021-938-9645 (tel) 083-419-1452 (cell)	jjt@sun.ac.za
20.		Dr Arifa Parker	Lead IPC Clinician / ID Specialist, GSH	021-938-9520/4378 (tel) 083-218-0088 (cell)	aparker@sun.ac.za
21.		Prof. Helena Rabie	Paediatric Infectious Disease Specialists	021-938-9197 (tel) 084-515-6746 (cell)	hrabie@sun.ac.za
22.		Mr Mogamat Isaacs	TBH: Pharmacist	021-938-5225 (tel)	Mogamat.Isaacs2@westerncape.gov.za
23.	**Groote Schuur Hospital**	Prof. Marc Mendelson	Infectious Disease Specialists	021-404-5105 (tel) 082-684-5742 (cell)	Marc.mendelson@uct.ac.za
24.		Dr. Tari Papavarnavas	Lead IPC Clinician / ID Specialist, GSH	021-404-4456 (tel)	taripapas@gmail.com
25.		Ms Vanishree Naicker	GSH: Pharmacist	021-404-3216 (tel)	Vanishree.naicker@westerncape.gov.za
26.	**Red Cross Hospital**	Prof. Brian Eley	RCWMCH: Head of Paediatric Infectious Diseases	021-658-5321 (tel) 083-947-7637 (cell)	Brian.eley@uct.ac.za
27.		Mr Eddison Williams	RCWMCH: Pharmacist	021-658-5031 (tel)	Eddison.Williams@westerncape.gov.za
28.	**Forensic Pathology Services**	Ms Vonita Thompson	Director: Forensic Pathology Services	082-443-3009 (cell)	Vonita.thompson@westerncape.gov.za
29.	**National Health Laboratory Services (NHLS) Groote Schuur Virology**	Dr. Stephen Korsman	Medical Virologist	021-404-6414 (tel) 082-376-6710 (cell)	Stephen.Korsman@nhls.ac.za
30.		Dr. Diana Hardie	Medical Virologist	021-404-5201 (tel)	Diana.Hardie@nhls.ac.za
31.	**NHLS, Tygerberg Hospital Virology**	Prof. Wolfgang Preiser	Professor and Head: Division of Medical Virology	021-938-9353 (tel) 082-556-0682 (cell)	preiser@sun.ac.za
32.		Ms Tania Stander Dr. Devon Muir Dr. Gert Van Zyl	Laboratory Manager, Consultant Senior Specialist, Medical Virology	021-938-9355 (tel) 021-938-9057 (tel) 021-938-9691(tel)	Ts2@sun.ac.za devon.muir@nhls.ac.za , dmuir@sun.ac.za guvz@sun.ac.za
33.	**Border Management Authority (BMA)**	Ms Thandeka Nsele	Deputy Director (Acting Executive Manager Monitoring and Compliance)	031-301-0381 (tel) 084-411-0508 (cell)	Thandeka.Nsele@bma.gov.za
34.		Ms Shanre Ferguson-Scott	Deputy Commandant: Monitoring and Compliance	064-848-0412 (cell)	Shanre.Fergusonscott@bma.gov.za
	Airports Company of South Africa (ACSA), Cape Town International Airport	Ms Maud Manentsa	Assistant Manager: Fire and Rescue	021-937-4068 (tel) 082-448-1952 (cell)	Maudina.manentsa@airports.co.za
	Rural Health Services (Districts)	**Name**	**Designation**	**Tel/Cell**	**Email address**
1.	**Rural Health Services Chief Directorate**	Dr. David Pienaar	Public Health Specialist	021-483-9901 (tel) 083-275-9333 (cell)	David.Pienaar@westerncape.gov.za
2.		Ms Eugenia Sidumo	Deputy Director: Professional Support Services	044-695-0047 (tel) 082-735-5463 (cell)	Eugenia.Sidumo@westerncape.gov.za

3.	**Cape Winelands**	Ms Surina Neethling	Deputy Director: Specialised Support Services	023-348-8120 (tel) 072-227-6058 (cell)	Surina.Neethling@westerncape.gov.za
4.		Ms Roenell Balie	Manager: Facility Based Services	023-348-8122 (tel) 082-397-4467 (cell)	Roenell.balie@westerncape.gov.za
5.		Mr Randall Humphreys	Cape Winelands District Municipality Environmental Health	023-348-2336 (tel) 082-824-2010 (cell)	humphreys@capewinelands.gov.za
6.		Mr Charles Williams	Pharmaceutical Services Manager	023-348 8115 (tel) 076-540-6656 (cell)	Charles.williams@westerncape.gov.za
7.	**Central Karoo**	Dr. Abraham Muller	Medical Manager: Central Karoo	023-414-8200 (tel) 078-214-3300 (cell)	Abraham.Muller2@westerncape.gov.za
8.		Ms Annalette Jooste	Deputy Director: Specialised Support Services	023-414-3590 (tel) 083-445-8106 (cell)	annalette.jooste@westerncape.gov.za
9.		Ms Janine Nel	Deputy Director: Comprehensive Health	023-414-3590 (tel) 083-708-1679 (cell)	Janine.Nel@westernccape.gov.za
10.		Mr Gerrit van Zyl	Central Karoo District Municipality Environmental Health	023-449-1000 (tel) 083-654-9688 (cell)	gerrit@skdm.co.za
11.		Mr Nathan Jacobs	Environmental Health	044-813-2926 (tel) 081-030-4557 (cell)	Nathan.Jacobs@westerncape.gov.za
12.		Ms A. Theron	Pharmaceutical Services Manager	023-414-8200 (tel) 082-334-3450 (cell)	Annatjie.Theron@westerncape.gov.za
13.	**Garden Route**	Mr Eugene Engle	Deputy Director: Specialised Support Services	044-803-2752 (tel) 083-441-8555 (cell)	Eugene.Engle@westerncape.gov.za
14.		Mr Nathan Jacobs	Environmental Health	044-813-2926 (tel) 081-030-4557 (cell)	Nathan.Jacobs@westerncape.gov.za
15.		Ms Gerda Terblanche	Assistant Manager: Nursing	044-803-2755/2700 (tel) 084-581-6648 (cell)	Gerda.Terblanche@westerncape.gov.za
16.		Mr. Johan Compion	Garden Route District Municipality	044-803-1501(tel) 082-803-5161 (cell)	jcompion@edendm.co.za
17.		Mr Jochemus Hattingh	Pharmaceutical Services Manager	044-803-2700 / 2756 (tel) 073-303-1574 (cell)	Jochemus.hattingh@westerncape.gov.za
18.	**Overberg**	Ms Beatrice Groenewald	Child Health Coordinator	028-214-5852 (tel) 082-969-9297 (cell)	Beatrice.groenewald@westerncape.gov.za
19.		Ms Aletta Ludik	Assistant Manager: Facility Based Services	028-214-5851 (tel)	Aletta.Ludik@westerncape.gov.za
20.		Ms Petro Robertson	Deputy Director: Comprehensive Health	023-348-8142 (tel) 072-067-1309 (cell)	petro.robertson@westerncape.gov.za
21.		Ms Mashudu Mukoma	Overberg District Municipality, Environmental Health	028-425-1157 (tel) 064-890-4995 (cell)	Mmukoma@odm.org.za
22.		Ms Hanlie Brits	Pharmaceutical Services, Overberg	028-214-5828 (tel) 082-899-2472 (cell)	Hanlie.brits@westerncape.gov.za
23.	**West Coast**	Ms Hildegard Van Rhyn	Clinical Program Coordinator	022-487-9354 (tel) 082-871-9709 (cell)	Hildegard.VanRhyn@westerncape.gov.za
24.		Ms Anne Kogana	Deputy Director: Comprehensive Health	022-487-9263 (tel) 066-046-6541 (cell)	Anne.Koganal@westerncape.gov.za
25.		Mr Andre Scott	Municipal Health Services Senior Manager	022- 433-8400 (tel) 082-557-7698 (cell)	health@wcdm.co.za
26.		Mr Christiaan Lintnaar	Pharmaceutical Services Manager	022-487-9209 (tel)	Cristiaan.Lintnaar@westerncape.gov.za
	District: Cape Town Metropolitan District	**Name**	**Designation**	**Tel/Cell**	**Email address**
1.	**Metro Health Services (MHS) Chief Directorate**	Prof. Hassan Mahomed	Public Health Specialist (MHS)	021-815-8697 (tel) 082-334-5763 (cell)	Hassan.Mahomed@westerncape.gov.za
2.		Ms Anneline Janse Van Rensburg	Deputy Director: Comprehensive Health	021-815-8696 (tel) 082-897-2310 (cell)	Anneline.jansevanrensburg@westerncape.gov.za
3.	**MHS- Northern Tygerberg Substructure**	Ms Michelle Williams	Deputy Director: Professional Support Services	021-815-8882 (tel) 083-235-1155 (cell)	michelle.williams@westerncape.gov.za

4.		Ms Delaray Fourie	Deputy Director: Comprehensive Health Programmes	021-815-8879 (tel)	Delaray.fourie@westerncape.gov.za
5.		Ms Rayneze Saayman	Clinical Programme Coordinator: Facility Based Programmes	021-815-8888 (tel) 073-782-6854 (cell)	Rayneze.Saayman@westerncape.gov.za
6.		Ms Tasneem Parker	Pharmaceutical Services Manger	021-815-8876	Tasneem.Parker2@westerncape.gov.za
7.	**MHS- Klipfontein Mitchells Plain Substructure**	Ms Pearl Van Niekerk	Quality Assurance Manager	021-370-5000 (tel) 078-409-0030 (cell)	Pearl.Vanniekerk@westerncape.gov.za
8.		Mr. Mahboob Roomany	Pharmaceutical Services Manager	021-370-5000 (tel) 082-847-0334 (cell)	Mahboob.roomanay@westerncape.gov.za
9.	**MHS- Khayelitsha Eastern Substructure**	Ms Razia Vallie	Deputy Director: Professional Support Services	021-360-4633(tel) 076-375-1945 (cell)	Razia.Vallie@westerncape.gov.za
10.		Mr. Johan Van Niekerk	Pharmaceutical Services Manager	021-360-4641 (tel) 078-631-5125 (cell)	Johan.vanniekerk@westerncape.gov.za
11.	**MHS- Southern Western Substructure**	Ms Colleen van Diemen	Facility Based Manager	021-202-0900 (tel) 073-516-2809 (cell)	Colleen.VanDiemen@westerncape.gov.za
12.		Ms Heli Moeng	Pharmaceutical Services Manager	021-202-0989 (tel) 076-112-6294 (cell)	Heli.Moeng@westerncape.gov.za
13.	**City of Cape Town (CoCT)**	Dr. Natacha Berkowitz	Specialised Health: Epidemiologist-CDC Coordinator	021-400-6864 (tel) 083-406-6755 (cell)	Natacha.Berkowitz@capetown.gov.za
14.		Ms Bettie Leedo	Programme Manager: Environmental Health	072-658-3865 (cell)	Bettie.Leedo@capetown.gov.za
15.		Mr Mohamed Barday	Head: Pharmaceutical Services	021-444-5885 (tel) 082-702-2200 (cell)	Mohamed.Barday@capetown.gov.za
16.	**CoCT: Eastern**	Ms Sue-Ellen van Niekerk	Head: PPHC	021-444-4667 (tel)	SueEllen.Van Niekerk@capetown.gov.za
17.		Ms Lena Stofile	Head: Environmental Health, Area: East	021-444-2331 (tel)	Lena.Stofile@capetown.gov.za
18.	**CoCT: Khayelitsha**	Ms Babalwa Qukula	Head: PPHC	021-360-1153 (tel) 084-499-3949 (cell)	Babalwa.Qukula@capetown.gov.za
19.		Ms Yonela Mentese	Head Environmental Health, Area East:Khayelitsha	021-400-1920 (tel) 078-109-9467 (cell	Yonela.Mentese@capetown.gov.za
20.	**CoCT: Northern**	Ms Everin Van Rooyen	Head: PPHC	021-400-3917 (tel) 071-896-1674 (cell)	Everin.VanRooyen@capetown.gov.za
21.		Ms Jaquelene Peterson	Head Environmental Health: Northern Sub District	021-444-1729 (tel) 072-112-2574 (cell	Jacquelene.Peterson@capetown.gov.za
22.	**CoCT: Tygerberg**	Ms Marilyn Dennis	Head: PPHC	021-444-0899 (tel) 079-517-3318 (cell)	Marilyn.Dennis@capetown.gov.za
23.		Mr Andy Lucas	Head Environmental Health; Area Central Tygerberg	021-444-0879 (tel) 082-421-5805 (cell)	Andy.Lucas@capetown.gov.za
24.	**CoCT: Klipfontein**	Ms Stephanie Sirmongpong	Head: PPHC	021-444-0894 (tel) 084-792-7247 (cell)	Stephanie.Sirmongpong@capetown.gov.za
25.		Elroy Plaatjies	Head Environmental Health; Area Central	021-444-2332 (tel) 086-576-0834 (cell)	Elroy.plaatjies@capetown.gov.za
26.	**CoCT: Mitchells Plain**	Ms Marcelle Segels	Acting Head: PPHC	083-764-8267 (cell)	Marcelle.Segels@capetown.gov.za
27.		Ms Zanele Figlan	Head Environmental Health	021-400-4076 (tel) 083-700-2141(cell)	Ntombizanele.Figlan@capetown.gov.za
28.	**CoCT: Southern**	Ms Kelebogile Sannah Shuping	Head: PPHC	021-444-3261 (tel) 064-559-3526 (cell)	Kelebogile.Shuping@capetown.gov.za
29.		Mr. Anzil Sampson	Head: Environmental Health	021-444-3259 (tel) 082-533-8183 (cell)	Anzil.Sampson@capetown.gov.za
30.	**CoCT: Western**	Ms Melissa Stanley	Head: PPHC	021-444-1741 072-329-6361(cell)	Melissa.stanley@capetown.gov.za
31.		Mr Gavin Heugh	Head Environmental Health; Area: North	021-444-1739 (tel) 084-220-0141(cell)	Gavin.Heugh@capetown.gov.za

Table 3: Infection Prevention and Control (IPC) Practitioners / equivalent at Public and Private Hospitals in the Western Cape

	District	Name	Hospital and Designation	Tel/Cell	Email

1.	**Cape Town**	Ms Heidi Van Reenen	Groote Schuur Hospital: IPC Practitioner	021-404-44556	Heidi.VanReenen@westerncape.gov.za
2.		Ms Kholiwe Binase	Groote Schuur Hospital: IPC Practitioner	021-404-5246	Kholiwe.Binase@westerncape.gov.za
3.		Ms Maahirah Abrahams	Groote Schuur Hospital: IPC Practitioner	021-404-6182	Maahirah.Abrahams@westerncape.gov.za
4.		Ms Eunice van der Westhuizen	Tygerberg Hospital: IPC Practitioner	021-938-4582	Eunice.vanderWesthuizen@westerncape.gov.za
5.		Ms Sarah Booysen	Tygerberg Hospital: IPC Practitioner	021-938-5053	Sarah.Booysen@westerncape.gov.za
6.		Ms Magda Mocke	Tygerberg Hospital: IPC Practitioner	021-938-4911 021-938-5576	Magda.Mocke@westerncape.gov.za
7.		Ms Donita Erasmus	Tygerberg Hospital: IPC	021-938-5056	Donita.Erasmus@westerncape.gov.za
8.		Ms D Saal	Tygerberg Hospital: IPC	021-938-5057	Desire.Saal@westerncape.gov.za
9.		Ms Tamar Mc Farlane	Tygerberg Hospital: IPC	021-938 5053	Tamar.Mcfarlane@westerncape.gov.za
10.		Ms Shamiela January	Red Cross War Memorial Hospital: IPC Practitioner	021-658-5977	Shamiela.January@westerncape.gov.za
11.		Ms Marilyn Philander	New Somerset Hospital: QA Manager	021-402-6232	Marilyn.Philander@westerncape.gov.za
12.		Ms Michelle Charles-Jefthas	Karl Bremmer Hospital: IPC Practitioner	021-918-1984	Michelle.Charles-Jefthas@westerncape.gov.za
13.		Ms Magdalena Aucamp	Mowbray Maternity Hospital: IPC Practitioner	021-659-5549	Magdalena.Aucamp@westerncape.gov.za
14.		Ms Nomakhula Konza	Alexandra Hospital: IPC	021-503-5123	Nomakhula.Konza@westerncape.gov.za
15.		Ms Jessica Minnaar	Lentegeur Hospital: IPC	021-370-1463	Jessica.Minnaar@westerncape.gov.za
16.		Mr. Adrian Agulhas	Valkenberg Hospital	021-440-3231	Adrian.Agulhas@westerncape.gov.za
17.		Ms Valerie Nel	Stikland Hospital: IPC Practitioner	021-940-4400	Valerie.Nel@westerncape.gov.za
18.		Ms Jayaluxmi Anand	Eerste River Hospital: IPC Practitioner	021-902-8082/1	Jayaluxmi.anand@westerncape.gov.za
19.		Ms Leisl Pasquallie	Helderberg Hospital: IPC Practitioner / Clinical Programme Coordinator	021-850-4747	Leisl.Pasquallie@westerncape.gov.za
20.		Mr Sam Manga	Khayelitsha Hospital: IPC Practitioner	021-360-4320	Sam.manga@westerncape.gov.za
21.		Ms Francina Brown	Mitchells Plain District Hospital: Nurse Manager	021-377-2283/7578	Francina.brown@westerncape.gov.za
22.		Ms Bianca Tyutu	False Bay Hospital: Manager	021-832-5206	Bianca.Tyutu@westerncape.gov.za
23.		Ms Aletta Le Grange	Victoria Hospital: IPC Practitioner	021-799-1133	Alletta.leGrange@westerncape.gov.za
24.		Ms Marlene Van der Berg - Titus	Wesfleur Hospital: IPC Practitioner	021-572-8054/8148	Marlene.Vanderberg-Titus@westerncape.gov.za
25.		Ms Laticia Esbagh	Brooklyn Chest Hospital: IPC Practitioner	021-508-8330	Laticia.esbagh@westerncape.gov.za
26.		Capt. C Cloete	2 Military Hospital: IPC Practitioner	021-799-6184	2mhcovid@gmail.com cornel572@gmail.com
27.		Ms Hannelie Herselman	Mediclinic Cape Town: IPC & Patient Safety Manager	021-464-5603 072-463-8584	Hannelie.herselman@Mediclinic.co.za
28.		Ms Salome Nel	Mediclinic Constantiaberg: IPC Manager /Patient Safety Manager	021-799-2911 / 2139	Salome.nel@mediclinic.co.za
30.		Ms Michelle Vermeulen	Mediclinic Durbanville: IPC Manager	021-980-2499	Michelle.Vermeulen@mediclinic.co.za
31.		Ms Vidette Fourie	Mediclinic Milnerton: IPC Practitioner & Control Manager	021-529-9064 066-294-9118	Vidette.Fourie@mediclinic.co.za
32.		Ms Liezl Henning	Mediclinic Panorama: IPC Manager	021-938-3674	Liezl.Henning@mediclinic.co.za
33.		Ms Evelyn Thanthsa	Mediclinic Panorama: Infection Prevention and Control Manager	021-938-2671	Evelyn.Thanthsa@mediclinic.co.za
34.		Ms Claudine Page	Mediclinic Cape Gate: IPC Manager	021-983-5969	Claudine.Page@mediclinic.co.za

35.	**Cape Town**	Ms Teresa Van Heerden	Mediclinic Louis Leipoldt: IPC Manager	021-957-6165	Teresa.VanHeerden@mediclinic.co.za
36.		Ms Mzohona Nkala	Mediclinic Vergelegen / Strand: IPC Manager	021-850-6393	Mzohona.Nkala@mediclinic.co.za
37.		Ms Sheila Tredoux	Melomed Bellville: Quality Assurance Officer	021-950-8929	mbquality@melomed.co.za
38.		Ms Meriaan Whitlow	Melomed Bellville: IPC Practitioner	021-948-8131	mbipc@melomed.co.za
39.		Ms Nadeema Muller	Melomed Gatesville: IPC Practitioner	021-637-8100	mgipc@melomed.co.za
40.		Ms Dawn Baxter	Melomed Gatesville: Quality Officer	021-637-3118	mgquality@melomed.co.za
41.		Ms Roselin Linden	Melomed Mitchell's Plain: IPC Practitioner	021-392-3126	mpipc@melomed.co.za
42.		Ms Joyce Mogale	Melomed Tokai Hospital: IPC Practitioner	021-764-7500	mtipc@melomed.co.za
43.		Ms Madelaine Strydom	Netcare N1 City Hospital: IPC Practitioner	021-590-4094	Madelaine.strydom@netcare.co.za
44.		Ms Jacqueline Prince	Netcare: Chris Barnard Memorial Hospital: IPC Practitioner	021-441-0000 082-843-7606	Jacqueline.Prince@netcare.co.za
45.		Ms Danielle Claasen	Netcare: Chris Barnard Memorial Hospital: IPC Practitioner	021-441-0347	Danielle.Claasen@netcare.co.za
46.		Ms Laeticia Vass	Netcare: Kuilsriver Hospital: IPC	021-900-6687 072-585-9628	Letitia.Vass@netcare.co.za
47.		Ms R. Fakier	Netcare: UCT Academic: IPC Practitioner	021-442-1829 083 361 6867	Rushana.Fakier@netcare.co.za
48.		Ms P Khobo	Netcare: Blaauwberg Hospital: IPC Practitioner	021-554-9037 078-919-8834	Precious.Khobo@netcare.co.za
49.		Ms Margaret Tyandela	Lifehealth Care: Claremont and Kingsbury Hospital: (Acting) Infection Prevention Specialist	021-670-4032	Margaret.Tyandela@lifehealthcare.co.za
50.		Ms Patricia Curle	Life health Care: Vincent Palotti Hospital: IPC Specialist	021-506-5111/5503	Patricia.Curle@lifehealthcare.co.za
51.		Ms Enid Scott	Life health Care: Vincent Palotti Hospital: IPC Practitioner	021-506-5492	Enid.Scott@lifehealthcare.co.za
52.		Ms B Tumi	Rondebosch Medical Centre, Quality Assurance Coordinator	021-680- 5920 (Ext 1233)	ipc@rondeboschmc.com
53.		Ms Vicky Niemand	Busamed, Paardevlei Private Hospital: Risk Manager	021-840-6600	VickyN@Busamed.co.za
54.	**Cape Winelands**	Ms Laurette Pekeur	Worcester Hospital: IPC Practitioner	023-348-1146	Laurete.Pekeur@westerncape.gov.za
55.		Ms Yolanda Van Zyl	Paarl Hospital: IPC Practitioner	021-860-2532	Yolanda.vanZyl@westerncape.gov.za
56.		Ms Danelia Jacobs	Brewelskloof Hospital: Clinical Program Coordinator IPC & OHS	023-348-1313/37	Danelia.Jacobs@westerncape.gov.za
57.		Mr. Geoffrey Vermeulen	Ceres Hospital: Nursing Service Manager	023 316 9600	Geoffrey.Vermeulen@westerncape.gov.za
58.		Ms Cheray Jordaan	Ceres Hospital: IPC Practitioner / QA	023-316 9600/61	Cheray.Jordaan@westerncape.gov.za
59.		Ms Elizabeth Van Zyl	Montagu Hospital: Nursing Service Manager	023-614-8103	Elizabeth.VanZyl2@westerncape.gov.za
60.		Ms Sandra Kortje	Robertson Hospital: Nursing Service Manager	023-626-8519	Sandra.Kortje@westerncape.gov.za
61.		Ms Rene De Silva	Stellenbosch Hospital: Nursing Service Manager / IPC Practitioner	021-808-6135	Rene.Desilva@westerncape.gov.za
62.		Ms Johanna Webster	Mediclinic Worcester: IPC Practitioner	023-348-1608	Johanna.webster@mediclinic.co.za
63.		Ms Elizma De Klerk	Mediclinic Paarl: IPC Practitioner	021-807-8296	Elizma.DeKlerk@mediclinic.co.za

64.		Ms Karlien Pienaar	Mediclinic Stellenbosch: IPC Practitioner	021-861-2200	Karlien.pienaar@mediclinic.co.za
65.	**Central Karoo**	Mr. Tshokolo Ntombana	Beaufort West Hospital: Nursing Service Manager / IPC Practitioner	023-414-8212 023-414-8200	Tshokolo.ntombana@westerncape.gov.za
66.		Ms Nomnene Bhistoli	Nursing Service Manager: Laingsburg Hospital	023-814-2353	Nomnene.Bhistoli@westerncape.gov.za
67.		Ms Sonja Frieslaar	Nursing Service Manager, Prince Albert Hospital	023-541-1300	Sonja.Frieslaar@westerncape.gov.za
68.	**Garden Route**	Ms Ann Calitz	George Hospital : IPC Practitioner	044- 802-4397	Ann.Calitz@westerncape.gov.za
69.		Ms Jabulisile Mahlangu	Mossel Bay Hospital: Nursing Service Manager / IPC Practitioner	044-604-6104	Jabulisile.Mahlangu@westerncape.gov.za
70.		Ms Yolande De Wit-Stevens	Mossel Bay Hospital: IPC Practitioner	044-604-6142	Yolande.DeWit-Stevens@westerncape.gov.za
71.		Ms Florence Thomas	Oudtshoorn Hospital: IPC Practitioner	044-203-7463	Florence.Thomas@westerncape.gov.za
72.		Ms Anita Laubscher	Alan Blyth Hospital: Nursing Service Manager/ IPC Practitioner	028-551-1010	Anita.Laubscher@westerncape.gov.za
73.		Ms Toppa Strydom	Kannaland sub district: IPC Practitioner	028-551-1010	Uppertoppa.Strydom@westerncape.gov.za
74.		Mr. Pieter Moolman	Riversdal Hospital: Nursing Service Manager / IPC Practitioner	028-713-8643/8643	Pieter.Moolman@westerncape.gov.za
75.		Ms Glenda Seegar	Knysna Hospital: IPC Practitioner	044-302-8400	Glenda.Seeger@westerncape.gov.za
76.		Ms Hendriena Wilschut	Uniondale Hospital: (Acting) Nursing Service Manager / Infection Control Practitioner	044-814-1402	Hendriena.Wilschut@westerncape.gov.za
77.		Ms Wendy Burnett	Mediclinic George / Geneva: IPC Practitioner	044-803-2187	Wendy.Burnett@mediclinic.co.za
78.		Ms Andrie Wiese	Mediclinic Klein Karoo: Infection Control Practitioner	044-272-0111	Andrie.Wiese@mediclinic.co.za
79.		Mr Frank Crous	Mediclinic Plettenberg Bay: Nursing Service Manager/Infection Control Practitioner	044-501-5100/5312	Frank.Crouse@mediclinic.co.za
80.		Ms Bianca Rondganger (Wynand)	Knysna Private Hospital: QSSS/ Infection Prevention Specialist	044-302-5214	Bianca.wynand@lifehealthcare.co.za
81.		Ms Marianca Stols	Bayview Hospital: IPC Specialist	044-691-3718	Marianca.Stols@lifehealthcare.co.za
82.	**Overberg**	Ms Melonise Raats	Mediclinic Hermanus: IPC Practitioner	028-313-0168	Melonise.Raats@mediclinic.co.za
83.		Ms Rosemary Davel	Caledon Hospital: Nursing Service Manager	028-212-1070	Rosemary.Darvel@westerncape.gov.za
84.		Anthea Klaasen	Hermanus Hospital: Nursing Service Manager	028-313-5221	Anthea.Klaasen@westerncape.gov.za
85.		Ms Nicole Adams	Otto Du Plessis Hospital: Nursing Service Manager	028-425-1239	Nicole.Adams@westerncape.gov.za
86.		Ms Florence Vermeulen	Swellendam Hospital: Nursing Service Manager	028-514-8419	Florence.Vermeulen@westerncape.gov.za
87.	**West Coast**	Ms Johanna De Nobrega	Nurse Manager: Vredenburg Hospital: IPC Practitioner	022-709-5099	Johanna.DeNobrega@westerncape.gov.za
88.		Mr. Niel Goeieman	Nurse Manager: Clanwilliam Hospital: IPC Practitioner	027-482-2166	Niel.Goeiman@westerncape.gov.za
89.		Mr Ndoisile Mphato	Nurse Manager: Citrusdal Hospital: Infection Control Practitioner	022-921-2153	Ndoisile.Mphato@westerncape.gov.za
90.		Ms Trudie Fredericks	Assistant Manager Nursing: Lapa Munik Hospital (Porterville): IPC Practitioner	022-931-2140	Trudie.fredericks@westerncape.gov.za
91.		Ms Trudie Fredericks	Nurse Manager: Radie Kotze Hospital (Piketberg): IPC Practitioner	022-913-1175	Trudie.fredericks@westerncape.gov.za

92.		Ms L Julius	Nurse Manager: Swartland Hospital: Infection Control Practitioner	022-487-9204	Loren.Julius2@westerncape.gov.za
93.		Mr Llewellon Wagenaar	Nurse Manager: Vredendal Hospital: Infection Control Practitioner	027-213-2039	Llewellon.Wagenaar@westerncape.gov.za
94.		Ms Gerda Karstens	West Coast Private Hospital, Life Health Care Group: IPC Practitioner	022-719-1030 Ext:210	Gerda.Karstens@lifehealthcare.co.za

Table 4: National Health Laboratories Services, NHLS Referral Laboratories in the Western Cape

	Name	NHLS Laboratories and Designation	Telephone / Cell	Email
1.	Ms M. Mohamed	NHLS: Area Manager	021-417-9376/77	Nasima.Mohamed@nhls.ac.za
2.	Mr. I. De Villiers	Green Point Laboratory Manager, Support Services	021-417-9366	Izak.Devilliers@nhls.ac.za
3.	Prof. W. Preiser	NHLS Microbiology, Tygerberg Hospital	021-938-9353; 082-556-0682	preiser@sun.ac.za
4.	Dr. G. Van Zyl	NHLS Virology, Tygerberg Hospital	021-938-9691	guvz@sun.ac.za
5.	Dr. D. Muir	NHLS Virology, Tygerberg Hospital	021-938-9057	Devon.Muir@nhls.ac.za dmuir@sun.ac.za
6.	Dr. S. Korsman	NHLS Virology, Groote Schuur Hospital	021-404-6414; 082-376-6710	Stephen.Korsman@nhls.ac.za
7.	Prof. D. Hardie	NHLS Virology, Groote Schuur Hospital	021-404-5201	Diana.Hardie@nhls.ac.za
8.	Dr. Z. Valley-Omar	NHLS Virology, Groote Schuur Hospital	073-257-0500	z.valley-omar@uct.ac.za
9.	Dr. M. Hsiao	NHLS Virology, Groote Schuur Hospital	021-404-5200; 083-445-1592	Marvin.Hsiao@uct.ac.za

Table 5: National Health Laboratories Services, NHLS Laboratories in the Western Cape

	NHLS Laboratories	Laboratory Manager / Person in charge	Telephone / Cell	Email
1.	Paarl	Ms N. Singh	021-860-2746; 082-617-2813	Natasha.Singh@nhls.ac.za
2.	Vredendal	Ms J. Marcus	027-213-3924; 083-625-6310	Jacky.Marcus@nhls.ac.za
3.	Vredenburg	Ms M. Mouton	022-713-4468	Marianne.Mouton@nhls.ac.za
4.	Karl Bremer	Ms O. Max	022-719-1634; 073-762-5465	Odette.Max@nhls.ac.za
5.	Mitchells Plain	Ms M. Hill	021-371-7921; 082-605-9756	Marguerita.Hill@nhl.ac.za
6.	Worcester	Ms P. Dlakavu	023-348-1407/1401	Portia.Dlakavu@nhls.ac.za
7.	Helderberg	Ms M. Adams	021-852-3623; 076-489-1572	Moveen.adams@nhls.ac.za
8.	George	Ms A. Bench	044-874-2022	Anna.Bench@nhls.ac.za
9.	Mossel Bay	Ms D. Van Heerden	044-690-3745	Daneld.Vanheerden@nhls.ac.za
10.	Oudtshoorn	Mr. P. De Klerk	044-279-1104; 067-428-0601	Peter.Deklerk@nhls.ac.za
11.	Knysna	Ms S. Muller	044-382-0991	Samantha.Muller@nhls.ac.za
12.	Beaufort West	Mr. C. Brink	023-415-1447	Cornelius.Brink@nhls.ac.za
13.	Khayelitsha	Mr. L. Ramashoai,	021-360-4522/4521; 073-249-1949	Leneuwe.Ramashoai@nhls.ac.za
14.	Hermanus	Ms S. Van Wyk	028-312-1005; 082-328-1592	Sonja.Vanwyk@nhls.ac.za

Table 6: Contact details of officials at Private Laboratories in Western Cape

	Private Laboratory	Name and Designation	Telephone	Email
1.	PathCare	Ms I. Howes; Head Office, (Enquiries)	021-596-3400/2130	howesi@pathcare.org
2.	PathCare	Dr. Jean Maritz; Clinical Virologist	021-596-3400	Jean.Maritz@pathcare.org
3.	Ampath	Dr. Clinton Van der Westhuizen; Pathologist	021 -596-5227	vanderwesthuizencl@ampath.co.za
4.	Lancet	Dr. J. Wojno; Pathologist	021-673-1700	Justyna.wojno@lancet.co.za

ANNEXURE 2: PROCEDURE FOR THE REPORTING & INVESTIGATION OF SUSPECTED, PROBABLE, AND CONFIRMED MPOX CASES IN THE WESTERN CAPE (Version 2, updated 26/07/2024)

Western Cape Government
Health

SURVEILLANCE CASE DEFINITIONS

NB: Surveillance case definitions may be adjusted as additional information about the outbreak becomes available)

SUSPECTED CASE

Any person presenting with an unexplained acute rash, swollen lymph nodes or mucosal lesions

OR

A person who is a contact of a probable or confirmed mpox case in 21 days before signs and symptoms onset and presents with one or more of the following:

- Headache
- Acute onset of fever (>38.5°C)
- Lymphadenopathy (swollen lymph nodes)
- Myalgia (muscle pain/body aches)
- Backache
- Fatigue / profound weakness

AND

For which the following differential diagnoses are excluded (or unlikely for clinical or epidemiological reasons): chickenpox, measles, bacterial skin infections, syphilis, molluscum contagiosum, allergic reactions and other locally relevant common cause of popular or vesicular rash

NB! It is not necessary to obtain negative laboratory results for differential diagnoses listed above to classify as suspected case.

SEE PROBABLE AND CONFIRMED CASE DEFINITIONS IN SOP

CONTACT

A person who had come into contact with a suspected, probable or laboratory confirmed mpox case since onset of symptoms AND had one or more of the following exposures:

- Direct physical contact with skin/skin lesions
- Direct contact with contaminated materials such as clothing, bedding etc.
- Prolonged face-to-face exposure in close proximity without appropriate personal protective equipment (PPE)
- Respiratory or eye exposure to lesion material from an infected person.

1

HEALTH FACILITY/PRACTICE

Attending doctor/clinician; Infectious Disease Specialist, IPC Practitioner

- Establish that the patient meets the signs and symptoms for suspected mpox (refer to case definitions).
- Observe appropriate infection control procedures on a presumptive diagnosis of mpox (minimize HCW, other patients, and close contact exposure).
- Clinical management is supportive and will vary from case to case, but typically symptoms are self-resolving.
- Tecovirimat is an antiviral agent that may be used for people with severe mpox disease.
- **Inform the NICD Hotline (0800-212-552) for a risk assessment and to guide laboratory investigations; and notify the Provincial CDC Coordinator** (Ms Charlene A. Lawrence, 021-830-3727, 072-356-5146, Charlene.Lawrence@westerncape.gov.za) **/ or Provincial NICD Epidemiologist** (Ms Janine Bezuidenhoudt,021-815-8790; 082-327-0394; Janine.Bezuidenhout@westerncape.gov.za; telephonically / email (if case is identified as a suspected case through the risk assessment).
- **Notify the case electronically through the NMC App, complete the Mpox Case Investigation Form and Mpox Contact Listing Form at time of case investigation and sample collection.**
- Submit samples (as advised) to a private laboratory or NHLS-NICD for specialized laboratory testing. Copy of the completed CIF must accompany the samples.
- **Provincial CDC will inform the District CDC Coordinator/equivalent of cases & contacts for follow-up.**

2

DISTRICT, SUB-DISTRICT/SUB-STRUCTURE

Facilitate the response i.e., case finding, investigation, contact identification, forward contact tracing and monitoring.

- **Identification of contacts should commence as soon as a suspected case is identified, and contacts should be recorded on the Contact Listing Form.**
- If the contact listing form cannot be completed at the time presentation, by the reporting/attending doctor/ IPC focal person, the District CDC Coordinator/equivalent will be responsible for ensuring the form is completed.
- Monitoring of contacts may switch from immediate follow-up once a suspected case is identified to follow-up after laboratory confirmation (depends on number of contacts to be followed up/if it should increase).
- **Contacts can by monitored by any of the 3 options (self-monitoring, telephonic, face-to-face monitoring) using the symptoms monitoring tool.** Monitoring to be done at least daily for the onset of signs / symptoms for a period of 21 days from last contact/exposure with a probable or confirmed case. If a contact develops initial signs and symptoms (e.g., fever) other than rash, the contact should be isolated and closely monitored for rash development. If rash develops, isolation is continued, and contact is assessed as a suspected case.
- **All case lists, contact lists &symptom monitoring forms with completed demographic information should be forwarded from one level to the next.** Follow-up of contacts by the district contact tracing team/s and the completion of the contact demographic section on the Contact Monitoring Form are used to update the Contact Line List.
- Submit all contact tracing list and monitoring tools to the Provincial NICD epidemiologist, who is responsible for collation of line lists and submission to the NDOH-NICD team.

3

PROVINCE

CDC Office facilitates case finding, investigation, contact tracing; and supports the districts as needed.

- Data management of line lists (collation, and data cleaning) received from health facilities, district contact tracing teams, CDC focal persons.
- Regular submission of provincial line lists to the National team (NDOH-NICD), outbreak@nicd.ac.za
- Relevant Provincial CDC Stakeholders and Outbreak Response members (CDC, Infectious Diseases-Clinical Case Management, Environmental Health, Infection Control, Communication, etc.) provide support to the district contact tracing teams when the need arise.

1

National Department of Health – National Institute for Communicable Diseases
NICD Doctor on Call (clinical queries - Healthcare workers only): 0800 212 552
NICD Outbreak Team
outbreak@nicd.ac.za

2

Western Cape DoH
CDC Programme
CDC Coordinator, Provincial NICD Epidemiologist, NMC Surveillance Manager,

021-830-3727 / 815-8660/8790 at Office
072-356-5146
082-327-0394
064-742-4005
provincialcdc@westerncape.gov.za
Charlene.Lawrence@westerncape.gov.za;
Janine.Bezuidenhout@westerncape.gov.za
Washiefa.Isaacs@westerncape.gov.za

Infectious Disease Specialist or Medical Virologist on call
Tygerberg Hospital; 021- 938-4911;
Groote Schuur Hospital, 021-404-9111

Private laboratories may be contacted directly.

3

Rural District Health (RDH) & Metro District Health (MDH)
District CDC Coordinators / Equivalent (see contact list)

Cape Town Metro District
Dr. Natacha Berkowitz, 021-400-6864, 083-406-6755
Natacha.Berkowitz@capetown.gov.za

Prof. Hassan Mahomed, 021-815-8697, 082-334-5763
Hassan.Mahomed@westerncape.gov.za

Rural Districts
Cape Winelands: Ms Surina Neethling, 023-348-8120, 072-227-6058,
Surina.Neethling@westerncape.gov.za

Central Karoo: Ms Annalette Jooste, 023-414-3590, 083-445-8106,
AnnaletteJooste@westerncape.gov.za

Garden Route: Mr. Eugene Engle, 044-803-2752, 083-441-8555,
Eugene.Engle@westerncape.gov.za

Overberg: Ms Beatrice Groenewald, 028-214-5852, 082-969-9297,
Beatrice.Groenewald@westerncape.gov.za

West Coast: Ms Hildegard Van Rhyn, 022-487-9354, 082-871-9709,
Hildegard.VanRhyn@westerncape.gov.za

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

MPOX PREPAREDNESS

An update for Physicians, Accident & Emergency Practitioners and Laboratorians

Division of Public Health Surveillance and Response and
Centre for Emerging Zoonotic and Parasitic Diseases
(NICD) 24-hour hotline number: 0800 212 552

COMPILED: 4 JULY 2022, UPDATED 27 MAY 2024

As of January 3, 2023, there had been more than 90 000 confirmed cases and 185 deaths in 117 countries from all six WHO Regions. Since the peak of the epidemic in August 2022, the multi-country mpox cases have declined but low level of transmission continues. In addition, mpox is also reported from a number of African countries, where zoonotic transmission is also possible (i.e. animal to human). Between 2023 and May 2024, nearly 20 000 cases of mpox have been reported from the Democratic Republic of Congo. From June 2022 to May 2024, a total of seven cases of mpox have been confirmed in South Africa. All cases involved men between 28 and 41 years of age.

The risk of mpox to the South African population has been low, given the low transmissibility of the virus.

Transmission

Monkeypox virus can be transmitted to a person upon contact with the virus from an animal, human, or materials contaminated with the virus. Person-to- person transmission of the virus is through close contact (i.e. prolonged face to face contact, kissing). Entry of the virus is through broken skin, respiratory tract, or the mucous membranes (eyes, nose, or mouth). A person is contagious from the onset of the rash/lesions through the scab stage. Once all scabs have fallen off, a person is no longer contagious.

Signs and symptoms

The incubation period (time from infection to symptoms) for mpox is on average 7−14 days but can range from 5−21 days. Initial symptoms include fever, headache, muscle aches, backache, chills and exhaustion. Lymphadenopathy is also noted. Skin lesions (or rash) develops between 1-3 days following onset. The lesions may be found spread over the body or localised. For cases reported in the multi-country outbreak, localization of lesions in genital or peri-genital areas have been often reported. The lesions progress through several stages before scabbing over and resolving. Notably, all lesions of the rash will progress through the same stage at the same time. Case fatality rate is very low and most cases will not need hospitalization or specific treatment. More severe cases have been historically reported in children, pregnant women and individuals with untreated HIV disease.

A person is contagious from the onset of the rash/lesions through the scab stage. Once all scabs have fallen off, a person is no longer contagious.

Response to a suspected case:

1. Establish that the patient meets the signs and symptoms for suspected mpox.
2. Observe appropriate infection control procedures (i.e. isolation with universal precautions). **As soon as the decision is made to proceed on the basis of a presumptive diagnosis of mpox, measures should be applied to minimize exposure of HCWs, other patients and other close contacts.**
3. Clinical management is supportive and will vary from case to case, but typically cases are self-resolving. Tecovirimat is an anti-viral agent that may be used for people with severe mpox disease.
4. Inform the NICD hotline (0800 212 552) and notify the local and provincial communicable disease control co-ordinator (CDCC) telephonically so that additional case finding and extensive contact tracing can be conducted.
5. Notify the case telephonically and through the NMC App – complete the Case Investigation Form (CIF-MPOX). Submit forms to provincial CDCC.
6. Submit samples to NICD for laboratory testing.

Differential diagnosis:

Other rash illnesses, some commonly found, include chickenpox (caused by varicella virus), hand-foot-and-mouth disease, measles, bacterial and fungal skin infections, syphilis, molluscum contagiosum and drug-related rashes. Lymphadenopathy in the prodromal phase of illness distinguishes mpox from chickenpox.

Sample collection and testing for mpox:

1. See laboratory guidance on submission of samples for mpox testing. Please refer to lab guide mpox

For more information, visit the NICD website, Mpox

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

Division of Public Health Surveillance and Response and
Centre for Emerging Zoonotic and Parasitic Diseases
(NICD) 24-hour hotline number: 0800 212 552

COMPILED: 30 AUGUST 2022 UPDATED 15 MARCH 2023

GUIDANCE FOR THE LABORATORY INVESTIGATION OF SUSPECTED CASES OF MPOX IN SOUTH AFRICA

STEP 1: COMPLETE THE CASE INVESTIGATION FORM

- Complete the case investigation form fully (CIF-MPOX)
- Include case investigation form with specimens submitted for testing

STEP 2: SUBMIT SPECIMENS FOR SPECIALIZED LABORATORY INVESTIGATION

- For testing, the following specimens are used:

Sample type	Collection materials	Comments
Skin lesion material: Swabs of lesion exudate/ Aspirate of lesion fluid Lesion roof/s Lesion crust/s	Dacron or polyester flocked swabs with viral transport media (VTM) or dry swab	**Required for all investigations** **May ship on ice packs, but not essential**

- The specimens should be packaged in compliance with the guidelines for the transport of dangerous biological goods (i.e. Category A shipments with triple packaging using absorbent material) and couriered directly and urgently to:

Centre for Emerging Zoonotic and Parasitic Diseases
Special Viral Pathogens Laboratory
National Institute for Communicable Diseases (NICD)
National Health Laboratory Service (NHLS)
No. 1 Modderfontein Rd
Sandringham, 2131

Laboratory contact details:
Dr Jacqueline Weyer: jacquelinew@nicd.ac.za / 011 386 6376 / 082 903 9131
Dr Naazneen Moolla: naazneenm@nicd.ac.za

COMPILED: 30 AUGUST 2022 UPDATED 15 MARCH 2023

Annex A: World Health Organization case definitions
(as on 22 December 2022, Surveillance, case investigation and contact tracing for Mpox: Interim guidance (who.int))

Suspected case:
A person who is a contact of a probable or confirmed mpox case in 21 days before the onset of signs or symptoms, and who presents with any of the following:

- Headache
- Acute onset of fever (>38.5°C),
- Lymphadenopathy (swollen lymph nodes)
- Myalgia (muscle and body aches)
- Back pain
- Asthenia (profound weakness) or fatique

OR
A person presenting with:

- An unexplained acute rash*
- Lymphadenopathy (swollen lymph nodes) or,
- Mucosal lesions

***** The skin rash may include single or multiple lesions in the ano-genital region or elsewhere on the body. Mucosal lesions may include single or multiple oral, conjunctival, urethral, penile, vaginal, or ano-rectal lesions. Ano-rectal lesions can also manifest as ano-rectal inflammation (proctitis), pain and/or bleeding.

AND
for which the following common causes of acute rash do not explain the clinical picture: varicella zoster, herpes zoster, measles, Zika, dengue, chikungunya, herpes simplex, bacterial skin infections, disseminated g*onococcus* infection, primary or secondary syphilis, chancroid, lymphogranuloma venereum, granuloma inguinale, molluscum contagiosum, allergic reaction (e.g., to plants); and any other locally relevant common causes of papular or vesicular rash.
N.B. It is not necessary to obtain negative laboratory results for listed common causes of rash illness in order to classify a case as suspected. Further, if suspicion of mpox infection is high due to either history and/or clinical presentation or possible exposure to a case, the identification of an alternate pathogen which causes rash illness should not preclude testing for MPXV, as co-infections have been identified.

COMPILED: 30 AUGUST 2022 UPDATED 15 MARCH 2023

Probable case:

A person meeting the case definition for a suspected case

AND

One or more of the following:

- has an epidemiological link (face-to-face exposure, including health workers without eye and respiratory protection); direct physical contact with skin or skin lesions, including sexual contact; or contact with contaminated materials such as clothing, bedding or utensils to a probable or confirmed case of mpox in the 21 days before symptom onset
- reported travel history to a mpox endemic country in the 21 days before symptom onset
- Identifies as gay, bisexual or other man who has sex with men
- has had multiple and/or casual sexual partners in the 21 days before symptom onset
- has a positive result of an *orthopoxvirus* serological assay, in the absence of recent smallpox/monkepox vaccination or other known exposure to orthopoxviruses

Confirmed case:

A case meeting the definition of either a suspected or probable case and is laboratory confirmed for mpox virus by detection of unique sequences of viral DNA either by real-time polymerase chain reaction (PCR) and/or sequencing.

**Mpox endemic countries are: Benin, Cameroon, the Central African Republic, the Democratic Republic of the Congo, Gabon, Ghana (identified in animals only), Côte d'Ivoire, Liberia, Nigeria, the Republic of the Congo, Sierra Leone and South Sudan. Countries recently reporting cases of the West African clade are Cameroon (n=18) and Nigeria (n=800) as of 1/3/2023. Benin and South Sudan have documented importations from Nigeria in the past in 1978 and 2005. The WHO conducted a follow-up examination and discovered evidence of sporadic, infrequent cases of mpox in southern Sudan, pointing to intermittent introductions from local, putative animal reservoirs. With this case definition, all countries except these four (Nigeria, Cameroon, Benin, South Sudan) reported cases as new cases of mpox as part of the 2022 multi-country outbreak (West African Clade). As of 1/3/2023, Benin reported 3 cases and South Sudan none. In addition, until 3/1/2013, African countries reported mpox cases with Liberia (n=7), Ghana (n=121), CAR (n=27), Congo (n=5), DRC (n=395) and Gabon, Côte d'Ivoire, sierra Leone none. Sudan, Egypt, Mozambique and South Africa reported 18, 3, 1 and five cases respectively from the multi-country outbreak as of 1/3/2023.

STANDARD OPERATING PROCEDURE FOR CONTACT TRACING IN RESPONSE TO DETECTION OF MPOX IN SOUTH AFRICA

1. INTRODUCTION

A multi-country outbreak of mpox in humans has been reported in several regions that are not endemic for mpox virus. The situation is quickly evolving with cases being recorded in several European countries, the United States of America, Canada and Australia. At present, the outbreak is linked to international travel but community-based spread has also been noted in some areas. The source and linkage of cases are still under investigation.

2. PURPOSE

The aim of this document / Standard Operating Procedure (SOP) is to guide personnel in conducting contact tracing of individuals that have come into contact (see contact definition below) with a suspected, probable or confirmed mpox case (see case definitions below).

This document may be updated as additional information about the epidemiology of the current multi-country outbreak becomes available

3. OBJECTIVE

To identify, trace and monitor contact of mpox cases in order to ensure that appropriate public health measures are instituted to contain spread

4. CASE DEFINITIONS – *may be adjusted as additional information about the outbreak becomes available*

Suspected case: Any person presenting with an unexplained acute rash

AND

1) one or more of the following signs and symptoms:
    - Headche
    - Acute onset of fever (>38.5°C)
    - Lymphadenopathy (swollen lymph nodes)
    - Myalgia (muscle pain/body aches)
    - Backache

AND

2) for which the following differential diagnoses are excluded: chickenpox, measles, bacterial skin infections, syphilis, molluscum contagiosum, allergic reactions and other locally relevant common cause of papular or vesicular rash

N.B. it is not necessary to obtain negative laboratory results for differential diagnoses listed above in order to classify a case as suspected

Probable case: A person meeting the suspected case definition **AND** one or more of the following:

- An **epidemiological link*** to a probable or laboratory-confirmed case of mpox in the 21 days prior to symptom onset
- Travel history to a **mpox endemic country**** in the 21 days prior to symptom onset
- Had multiple or anonymous sexual partners in the 21 days prior to symptom onset
- A positive result of an orthopoxvirus serological assay, in the absence of smallpox vaccination or other known exposure to orthopoxviruses
- Hospitalised due to the illness

**Face-to-face exposure without appropriate PPE; direct physical contact with skin or skin lesions including sexual contact; contact with contaminated materials such as clothing, bedding or utensils*

***Cameroon, Central African Republic, Congo, Democratic Republic of the Congo, Gabon, Ghana, Ivory Coast, Liberia, Nigeria, Sierra Leone, South Sudan*

Confirmed case: A person meeting the suspected or probable case definition AND is laboratory-confirmed for mpox virus by detection of unique sequences of viral DNA either by real-time polymerase chain reaction (PCR) and/or sequencing

5. CONTACT DEFINITION - *may be adjusted as additional epidemiological information about the outbreak becomes available*

A person who had come into contact with a suspected, probable or laboratory-confirmed mpox case since onset of symptoms and has had one or more of the following exposures.

- Face-to-face contact or was in a closed environment with a case **without appropriate personal protective equipment (PPE)** - this includes, amongst others,
    - persons living in the same household as a case,
    - people working closely/in the same environment as a case (e.g. colleagues, classmates etc.).
    - healthcare workers or other person providing direct care
- Direct physical contact including sexual contact
- Direct contact with contaminated materials such as clothing, bedding etc.

6. WHEN TO INITIATE CONTACT TRACING FOR MPOX

- Identification of contacts should commence as soon as a suspected case is identified (i.e. during case investigation) and contacts should be recorded in a contact listing form (Appendix A)
- Contact listing form should be completed at the time of sample collection and completion of the case investigation form (Appendix B) by the person interviewing the suspected case (e.g. facility infection prevention and control (IPC) focal point, attending clinician).
    - If the contact listing form cannot be completed at this time, the district communicable disease control coordinator (CDCC) or equivalent (for districts without CDCC) will be responsible for ensuring that the form is completed when notified of the suspected case
- Contact monitoring (follow-up) should be done by completing the daily symptom monitoring tool (Appendix C). Monitoring should start immediately; however, if laboratory results come back negative, contacts should be dropped from further follow-up.
    - Monitoring of contacts may switch from immediate follow-up once a suspected case is identified to follow-up after laboratory confirmation depending on the number of contacts to be followed up should number of cases increase

7. MONITORING OF CONTACTS

- Contacts should be monitored by any of the three options below using the symptom monitoring tool. Options to use can be guided by availability of resources within districts/provinces.
    - *Self-monitoring* (passive monitoring)
        - Contacts should be provided with necessary information such as signs and symptoms, transmission, permitted activities etc. and what to do should symptoms develop
        - Where possible contacts should be provided with thermometers for daily temperature check – at least twice daily
        - If symptoms develop, contact should notify the officer designated to observe/monitor the contact or visit a healthcare facility so that necessary public health measures can be instituted
    - *Telephonic monitoring* (active monitoring)
        - Designated officer is responsible for at least once a day to see if the person under observation has self-reported signs/symptoms
        - If signs/symptoms have been reported, the designated officer should follow the necessary public health measures
    - *Face-to-face monitoring* (direct monitoring)
        - A designated officer to physically visit the person being monitored to examine for signs/symptoms of illness
- Monitoring to be done at least daily for the onset of signs/symptoms for a period of 21 days from last contact/exposure with a probable or confirmed case

- If a contact develops initial signs and symptoms (e.g. fever) other than rash, contact should be isolated and closely monitored for rash development
  - If rash develops, isolation is continued and contact is assessed as a suspected case as per the guidelines

8. DATA MANAGEMENT

Data should be managed at respective levels. All case lists, contact line lists and symptom monitoring forms with completed demographic information should be forwarded from one level to the other on a daily basis.

Situational Reports to be shared with all stakeholders.

9. ROLES AND RESPONSIBILITIES AT DIFFERENT LEVELS

9.1 District and Sub-District level

District CDCC or equivalent should coordinate the following:

- Activation of the district outbreak response team and establishment of contact tracing teams with clear roles and responsibilities
  - To increase capacity of contact tracing teams, a multidisciplinary team including but not limited to surveillance officers, environmental health practitoners, community health workers, IPC, health promoters, community/school health nurses etc. should be constituted
- Each contact tracing team must have a focal person who shall liase with the district CDCC or equivalent and supervise team activities
  - Team activities to include the following:
    - Investigate suspected cases and rumours reported
    - Record details of all contacts identified on the contact listing form (Annexure A)
    - Monitor all contacts for onset of signs and symptoms as per the monitoring tool (Appendix C)
    - If contact develops signs and symptoms inform the district CDCC or equivalent so that necessary public health measures are instituted and relevant stakeholders are informed
    - Submit contact monitoring tools to the district CDCC or equivalent for submission to the provincial CDCC on a daily basis
- Training of contact tracing teams on the identification of contacts, completion of contact listing form and monitoring of contacts
- Assign a designated officer/s to ensure daily symptom monitoring is/are completed
- Data management of all line lists (collate, data cleaning etc.) within the district
- Submit the district line lists to the provincial CDCC/team (see Table below) on a daily basis
- Completion of the contact demographic section on the contact monitoring form in order to update the contact line list

9.2 Provincial level

Provincial CDCC to cordinate the following:

- Ensure that all districts receive the contact tracing SOP, contact listing form, contact symptom monitoring tool and relevant guidelines/documents related to mpox
- Training of contact tracing teams on the identification of contacts, completion of contact listing form and monitoring of contacts
- Data management of line lists (collate, data cleaning etc.) from all districts
- Submission of provincial line lists to the National Team (NDoH and NICD – see Table below) on a daily basis
- Relevant Provincial Outbreak Response Team members (CDC, Environmentl Health, Infection Control etc.) provide support to the district contact tracing teams when need arise

9.3 National level

The National Team to coordinate the following:

- Develop contact listing form, contact monitoring tool and contact tracing SOP
- Provide approved contact listing form, symptom monitoring tool, SOP and other relevant documents to all provinces for distribution
- Provide support to all provinces and give regular updates and feedback to provinces
- Data management of national line list

Table 1: Contact details of the National Team members

Institution	Name/Department	Email address	Telephone number
National Department of Health	Tsakani Furumele	Tsakani.Furumele@health.gov.za	082 419 9686
	Lusizo Ratya	Lusizo.Ratya@health.gov.za	082 703 2784
	Wayne Ramkrishna	Wayne.Ramkrishna@health.gov.za	082 317 4687
National Institute for Communicable Diseases	Outbreak Response Unit	outbreak@nicd.ac.za	
	Laboratory	jacquelinew@nicd.ac.za naazneenm@nicd.ac.za	011 386 6376 082 903 9131

Email address for reports submission: see Table below for respective provinces and National Team

NICD hotline number (for healthcare professional only): 0800 212 552

Table 2: Contact details (email address and telephone) of stakeholders involved in coordinating outbreak response in provinces.

Provincial Communicable Disease Control Directorate			
Eastern Cape	Thomas Dlamini Nosiphiwo Mgobo	thomas.dlamini@echealth.gov.za nosiphiwo.mgobo@echealth.gov.za	083 378 0189 060 579 9027
Free State	Dikeledi Baleni	balenid@fshealth.gov.za	083 757 8217
Gauteng	Refilwe Mokgetle Tebogo Matjokotja	refilwe.mokgetle@gauteng.gov.za Tebogo.Matjokotja@gauteng.gov.za	082 4862934 082 373 1197
KwaZulu-Natal	Premi Govender Babongile Mhlongo	premi.govender@kznhealth.gov.za babongile.mhlongo@kznhealth.gov.za	071 609 2505 060 982 3333
Limpopo	Marlene Freda Ngobeni Mashudu P. Mudau	Marlene.Ngobeni@dhsd.limpopo.gov.za fredangobeni@gmail.com Prudance.Mudau@dhsd.limpopo.gov.za	079 491 1909 071 678 3864
Mpumalanga	Mandla Zwane Hluphi Mpangane	MandlaZw@mpuhealth.gov.za hluphim@mpuhealth.gov.za	082 229 8893 076 522 8511
North West	Khumbudzo Booi Magogodi Seema G Tsele	KBooi@nwpg.gov.za mseema@nwpg.gov.za gtsele@nwpg.gov.za	066 045 2156 0694169068
Northern Cape	Gloria Hottie Martin Son	hottieg@webmail.co.za martinson775@gmail.com	072 391 3345 053 830 0529 071 474 4571
Western Cape	Charlene A. Lawrence Hilary Goeiman	Charlene.Lawrence@westerncape.gov.za Hilary.Goeiman@westerncape.gov.za	072 356 5146 021 483 9964 / 3156 021 815 8741 083 333 1320

Annexure A: Mpox contact listing form

Appendix B: Mpox case investigation form

Annexure C: Mpox contact monitoring tool

References / other useful resources

https://www.who.int/publications/i/item/WHO-MPX-surveillance-2022.1?s=08

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

2030 NDP

INFECTION PREVENTION AND CONTROL (IPC) STANDARD OPERATING PROCEDURE (SOP) FOR HEALTHCARE MANAGEMENT OF MPOX PATIENTS

1. INTRODUCTION

Mpox is a viral zoonotic disease that belongs to the *Orthopoxvirus* genus of the *Poxviridae* family. Human disease was first identified in 1970 in a 9-month-old boy in the Democratic Republic of the Congo and since then most cases have been reported across Central and West Africa.

The incubation period of mpox is usually 6 to 13 days following exposure but can range from 5 to 21 days. The primary infection is from animals to humans, and secondary infection is human to human, and characterized by fever and rash. The mode of transmission is via contact with mpox vesicles on the skin, and droplet is secondary because of skin scales being inhaled. If a patient seeking care is suspected to have mpox, infection prevention and control personnel should be notified immediately.

A multi-country outbreak of mpox in humans has been reported in several regions that are not endemic for mpox virus. The situation is quickly evolving with cases being recorded in several European countries, the United States of America, Canada, and Australia. At present, the outbreak is linked to international travel, but community-based spread has also been noted in some areas. The source and linkage of cases are still under investigation.

2. PURPOSE

The aim of this Standard Operating Procedure (SOP) is to guide personnel in adhering to infection prevention and control (IPC) standards during healthcare or whilst providing care to the suspected, probable, or confirmed mpox case.

3. OBJECTIVE

To give guidance and identify IPC principles to reduce all avoidable risks during care and monitoring of mpox cases to ensure that appropriate public health measures are instituted to contain spread.

4. CASE DEFINITIONS

4.1 Suspected case: Any person presenting with an unexplained acute rash

AND

1) one or more of the following signs and symptoms:

- Headache
- Acute onset of fever (>38.5°C)
- Lymphadenopathy (swollen lymph nodes)
- Myalgia (muscle pain/body aches)
- Backache

AND

2) for which the following differential diagnoses are excluded: chickenpox, measles, bacterial skin infections, syphilis, molluscum contagiosum, allergic reactions and other locally relevant common cause of popular or vesicular rash.

N.B. it is not necessary to obtain negative laboratory results for differential diagnoses listed above to classify a case as suspected.

4.2 Probable case: A person meeting the suspected case definition AND one or more of the following:

- An epidemiological link* to a probable or laboratory-confirmed case of mpox in the 21 days prior to symptom onset.
- Travel history to a mpox endemic country** in the 21 days prior to symptom onset.
- Had multiple or anonymous sexual partners in the 21 days prior to symptom onset.
- A positive result of an orthopoxviral serological assay, in the absence of smallpox vaccination or other known exposure to orthopoxviruses.
- Hospitalised due to the illness.

*Face-to-face exposure without appropriate PPE; direct physical contact with skin or skin lesions including sexual contact; contact with contaminated materials such as clothing, bedding or utensils.

*Cameroon, Central African Republic, Congo, Democratic Republic of the Congo, Gabon, Ghana, Ivory Coast, Liberia, Nigeria, Sierra Leone, South Sudan.

4.3 Confirmed case:

A person meeting the suspected or probable case definition or is laboratory-confirmed for mpox virus by detection of unique sequences of viral DNA either by real-time polymerase chain reaction (PCR) and/or sequencing.

5. CONTACT DEFINITION

A person who had been exposed to a suspected, probable, or laboratory-confirmed mpox case since onset of symptoms and has had one or more of the following exposures:

- Face-to-face contact or was in a closed environment with a case without appropriate personal protective equipment (PPE) - this includes, amongst others,
    - persons living in the same household as a case,
    - people working closely/in the same environment as a case (e.g. colleagues, classmates etc),
    - Healthcare workers or other person providing direct care.

- Direct physical contact including sexual contact.

- Direct contact with contaminated materials such as clothing, bedding etc.

6. IPC DURING HEALTHCARE

Health workers should always follow standard precautions and perform a risk assessment to evaluate the need to use additional precautions. Standard precautions include:

- hand hygiene
- respiratory hygiene and cough etiquette
- patient placement
- personal protective equipment
- aseptic technique
- safe injections and sharps injury prevention
- environmental cleaning and disinfection
- handling of laundry and linen
- decontamination and reprocessing or reusable patient care items and equipment
- waste management.

6.1 Hand hygiene

The following five moments of hand hygiene are critical:

- Clean your hands before touching a patient when approaching him/her.
- Clean your hands immediately before performing a clean/aseptic procedure.
- Clean your hands immediately after an exposure risk to body fluids (and after glove removal).
- Clean your hands after touching a patient and her/his immediate surroundings, when leaving the patient's side.
- Clean your hands after touching any object or furniture in the patient's immediate surroundings, when leaving – even if the patient has not been touched.

There should be an elbow-operated hand-wash basin at the entrance to the patient area of the unit

Each room should be provided with at least one clinical elbow-operated hand washbasin.

Laminated hand washing posters with clear instructions should be provided above or next to all elbow-operated hand washbasins.

Elbow-operated hand washbasins must be appropriately positioned to prevent splashing on beds, equipment or staff.

Elbow-operated hand washing basins should be placed to allow optimal workflow i.e., clean to dirty

Wall mounted antiseptic soap dispensers and clean disposable towels should be available at each elbow-operated hand washbasin.

Alcohol-based hand rub (ABHR) should be available at each elbow-operated hand wash basin and at every occupied unit.

A pedal operated refuse bin should be available at each elbow-operated hand wash basin.

6.2 Isolation room or space

Health workers should perform hand hygiene according to the WHO Your 5 moments for hand hygiene, including prior to putting on and after removing PPE.

Place patient in a well-ventilated, single patient room with dedicated bathroom or toilet.

If single patient rooms are not available, consider cohorting confirmed cases, maintaining a distance of at least 1 m between patients.

Isolation room/area should have signage posted at the entrance indicating contact/droplet precautions.

Wear PPE, including gloves, gown, a respirator (e.g. N95, FFP2) and eye protection.

Use dedicated footwear that can be decontaminated.

Health workers should be trained on procedures for safe donning and doffing of PPE.

Cover exposed lesions when others are in the room and if the patient can tolerate.

Avoid unnecessary movement of confirmed patients. If the patient must be moved or transported within or beyond the facility, ensure transmission-based precautions are maintained, place a well-fitting medical mask on the patient and cover lesions (provided the patient is able to tolerate).

The receiving facility/ward/unit should be aware that transmission-based precautions are required and, pending arrival, the need to prepare the isolation or designated area.

Precautions should remain in place until lesions have crusted, scabs have fallen off and a fresh layer of skin has formed underneath.

Severe cases (including immunosuppressed) who may experience prolonged viral shedding from the upper respiratory tract may require clinical evaluation to determine when transmission-based precautions may be discontinued.

6.3 Personal Protective Clothing (PPE)

Health workers should wear the following PPE: gloves, gown, respirator (e.g. N95, FFP2) and eye protection.

Health workers should be trained on procedures for safe putting on and removing PPE:

<u>Donning procedure:</u>

- Put on the gown: Fully cover torso from the neck to knees, arms to end of wrist, and wrap around the back; fasten behind neck and waist.

- Put on mask or respirator: secure ties or elastic bands at middle of head and neck; fit flexible band to nose bridge; fit snug to face and below chin
- Put on goggles or face shield: Place over face and eyes and adjust to fit
- Put on gloves: Extend to cover wrist of isolation gown

Doffing procedure:

If your hands get contaminated at any step during the doffing procedure, immediately wash your hands or use an alcohol-based hand sanitizer.

1. Remove gloves and gown: Grasp the gown in the front and pull away from your body so that the ties break, touching outside of gown only with gloved hands; while removing the gown, fold or roll the gown inside-out into a bundle; as you are removing the gown, peel off your gloves at the same time, only touching the inside of the gloves and gown with your bare hands; place the gown and gloves into a waste container.
2. Remove googles or face shield: Remove from the back by lifting head band and without touching the front of the goggles or face shield; if the item is reusable, place in designated receptacle for reprocessing, otherwise, discard in a waste container.
3. Remove mask from behind: Grasp bottom ties or elastics of the mask/respirator, then the ones at the top, and remove without touching the front; discard in a waste container.
4. Perform hand hygiene

6.4 Cleaning and disinfection of surfaces

PPE (gloves [heavy duty], gown, respirator [e.g. N95, FFP2] and eye protection) should be worn by health workers while cleaning and disinfecting patient care equipment and patient care areas or isolation rooms where patients were suspected or confirmed to have mpox.

Use dedicated footwear that can be decontaminated. Disposable shoe covers are not recommended.

Wet cleaning methods are preferred.

Use dedicated cleaning material.

Always clean surfaces first with detergent and water followed by disinfection with an approved disinfectant with virucidal activities: Disinfect using 70% alcohol or hypochlorite solution (concentration of 1000ppm, usually 2 sachets to 4.5L of water)

To prevent cross-contamination, cleaning must always be carried out from the cleanest area first and finish in the dirtiest area last, and always clean from top to bottom.

Particular attention should be paid to toilets and frequently touched surfaces.

Use disposable or dedicated patient care equipment and clean and disinfect equipment before use on other patients.

Dishes can be washed with detergent in automated dishwasher or manually cleaned in hot water (>55°C) while wearing domestic gloves.

6.5 Safe handling of linen

Carefully lift and roll linens. Do not shake linen or laundry as this may disperse infectious particles.

These items should be carefully placed into designated container or bag for transport to laundry services.

Linens can be machine washed with hot water at > 60°C with laundry detergent and dried according to routine procedures, preferably at high heat. If machine washing is not possible and hot water is not available, linens can be soaked in a large drum using a stick to stir with care taken to avoid splashing. The linens should be soaked in chlorine, rinsed with clean water and allowed to fully dry.

Workers in laundry area should follow standard and transmission-based precautions including:

- minimize handling, in particular avoid shaking of linen and laundry;
- wear gloves, apron or gown, a respirator (e.g. N95, FFP2) and eye protection.

6.6 Waste management

Waste should be segregated (general waste, infectious waste and sharps) and placed in appropriate bins at point of use (fill ¾ full).

Management and disposal of waste (including PPE) should be done in accordance with local regulations for infectious waste.

Ensure health workers wear appropriate PPE (e.g. gloves, gown, respirator [e.g.N95, FFP2], eye protection) during handling of waste.

Transport to designated area and storing of waste should be done in a controlled access area.

6.7 Management of deceased patients

Handling of the deceased should be kept to a minimum.

Perform hand hygiene and wear PPE according to contact and droplet precautions (gloves, gown, respirator [e.g. N95, FFP2] and eye protection) as patients with rashes that have not healed may still have infectious virus.

Ensure that any leakage of body fluids is contained.

The body should be wrapped in a cloth or shroud and transferred to the mortuary as soon as possible.

The dignity of the dead, their cultural and religious traditions, and their families should be respected and protected. Family and friends may view the body after it has been prepared for burial, in accordance with local customs. They should not touch or kiss the body and should clean their hands with soap and water or alcohol-based hand sanitizer after the viewing.

6.8 Management of exposed health care workers

Health workers should notify infection control, occupational health and public health authorities of possible exposures to receive a medical evaluation and instructions on follow up.

Health workers who have had an occupational exposure (i.e. not wearing appropriate PPE) do not need to be excluded from work if they are asymptomatic, but should undergo active surveillance for symptoms for 21 days post-exposure; and be instructed not to work with vulnerable patients.

Health workers who have had an exposure to a person with confirmed mpox should undergo medical evaluation and consideration for possible interventions (vaccination or PEP) if available.

Other useful resources

- Centers for Disease Control and Prevention, *Infection Prevention and Control of Mpox in Healthcare Settings* (May 2022), https://www.cdc.gov/poxvirus/mpox/clinicians/infection-control-healthcare.html
- Centers for Disease Control and Prevention, *Sequence for putting on Personal Protective Equipment (PPE)*, https://www.cdc.gov/hai/pdfs/ppe/ppe-sequence.pdf
- Guidelines for the management of Mpox disease, Ministry of Health and Family Welfare, Government of India (May 2022), https://main.mohfw.gov.in/sites/default/files/Guidelines%20for%20Management%20of%20Monkeypox%20Disease.pdf
- National Infection Prevention and Control Strategic Framework (March 2020), https://www.nicd.ac.za/wp-content/uploads/2020/04/National-Infection-Prevention-and-Control-Strategic-Framework-March-2020-1.pdf
- World Health Organization, Health topics: Mpox, https://www.who.int/health-topics/monkeypox#tab=tab_1
- World Health Organization, OpenWHO, *Mpox: Epidemiology, preparedness and response for African outbreak contexts*, https://openwho.org/courses/monkeypox-intermediate/items/2bUkmUOjzx4a15s3sGHYeM
- World Health Organization, *Clinical management and infection prevention and control for mpox: Interim rapid response guidance*, 10 June 2022 https://www.who.int/publications/i/item/WHO-MPX-Clinical-and-IPC-2022.1

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

Division of Public Health Surveillance and Response and
Centre for Emerging Zoonotic and Parasitic Diseases
(NICD) 24-hour hotline number: 0800 212 552

Considerations for the management of uncomplicated cases of mpox through home isolation

The WHO recommends that patients with suspected or confirmed mpox with mild, uncomplicated disease and not at high risk for complications can be isolated at home, for the duration of the infectious period, as long as a home assessment determines infection, prevention and control (IPC) conditions are fulfilled at home setting.

Clinicians managing a mild, uncomplicated case of mpox will have to consider the following on a case-by-case basis when deciding on whether home isolation is appropriate:

- Clinical severity, presence of complications, care needs, risk factors for severe disease (i.e. children, pregnant women or immunosuppressed) and access to referral for hospitalisation if condition deteriorates.
- Patients isolating at home should require minimal to no assistance from a caregiver who is in good health.
- Patients living with vulnerable people who are at risk for severe disease and where IPC requirements and adequate isolation cannot be guaranteed may require hospital admission for isolation.
- Vulnerable people who should be identified in the home of a patient at risk for severe disease if infected with mpox include young children, pregnant women and persons who are immunosuppressed, such as those living with unmanaged HIV.
- As a precaution patients with chronic skin conditions (e.g. atopic dermatitis) or acute skin condition (i.e. burns) should also be considered to be at higher risk for complications.

If home isolation is considered an assessment of the home should be conducted, with the following considerations:

- A health worker should assess whether the home of the patient is suitable for the isolation and provision of care of the patient with mpox, including whether the patient and/or other household members have the capacity and required provisions to adhere to home isolation.
- Limited or no access to water, sanitation or resources for personal hygiene and limited ability to maintain isolation and IPC measures pose risks for household and community members. This assessment can be done at the initial health-seeking visit or via telephone or telemedicine and does not require a home visit.
- The patient and designated person that is facilitating self-care should be counselled regarding the risks of transmission. It is preferred that the designated person be previously vaccinated against smallpox or mpox and not be a vulnerable person at risk for severe disease.

As adapted from: World Health Organization (WHO), Clinical management and infection prevention and control for monkeypox: Interim rapid response guidance (June 2022), https://www.who.int/publications/i/item/WHO-MPX-Clinical-and-IPC-2022.1

Guidelines for the clinical recognition, diagnosis and management of mpox in South Africa

June 2024

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Abbreviations

ADR	Adverse drug reaction
ARDS	Acute Respiratory Distress Syndrome
ART	Anti-retroviral treatment
CDC	Center for Diseases Control
CSF	Cerebrospinal fluid
HIV	Human immunodeficiency virus
HSV	Herpes simplex virus
IMT	Incident Management Team
IO	
IPC	Infection Prevention and Control
IV	Intravenous
MSM	Men having sex with men
MSSA	Methicillin-sensitive *Staphylococcus aureus*
MPX	Mpox
MPXV	Monkeypox virus
NEMLC	National Essential Medicines List Committee
NICD	National Institute of Communicable Diseases
NMC	Notifiable Medical Conditions
PCR	Polymerase Chain Reaction
PPE	Personal protective equipment
SAHPRA	South African Health Products Regulatory Authority
SIGA	Private entity making Tecovirimat
SmPC	Summary of Product Characteristics
SUSARs	Suspected Unexpected Serious Adverse Reactions
VTM	Viral transport medium
VZV	Varicella zoster virus
WHO	World Health Organization

Executive summary

Mpox is an emerging zoonotic viral infection but can be transmitted from person-to-person resulting in outbreaks in the human population. The disease is caused by infection with the monkeypox virus (MPXV), an orthopoxvirus closely related to the variola virus (the causative agent of smallpox, which has been eradicated). The most prominent feature of the disease is the skin rash which is associated with painful lesions much similar in appearance to the smallpox rash. Fever and enlarged lymph nodes are also often reported. The disease is mostly mild requiring little or no medical intervention but resulting in pitted scars in recovered patients. Nevertheless, the disease can be clinically severe and fatal, more so in those living with immunodeficiencies and co-morbidities (WHO, 2022).

Historically, mpox was reported very rarely in persons and the subject of relatively few research studies (Dalton,et al. 2023). Much about the epidemiology, ecology and pathobiology of the disease remains unclear. The epidemiology of mpox is at least partially underpinned by the variant of the virus. Two main clades of MPXV, namely Clade I and Clade II have been identified and circulate respectively in Central and Western Africa. Clade I MPXV virus is thought to be associated with more severe clinical outcomes and is possibly more transmissible than Clade II virus. A second determinant of mpox epidemiology is due to the high level of cross-protective immunity afforded against mpox through smallpox vaccination. Worldwide mass vaccination against smallpox during the smallpox eradication campaign, inadvertently also contributed to herd immunity against mpox. Since cessation of smallpox vaccination more than 40 years ago, populations worldwide have grown more susceptible to mpox due to waning smallpox immunity and the vaccine naive population (i.e. those never vaccinated).

In more recent years, the number of mpox cases from endemic African countries, in particular the Democratic Republic of Congo has been increasing and in 2017 the first cases of human mpox were diagnosed in Nigeria (Yinka-Ogunleye, 2019).. In May 2022, an outbreak of mpox appeared suddenly and rapidly spread across Europe, the Americas and then all six WHO regions. By May 2024, nearly 98 000 confirmed mpox cases were reported from 117 countries. The global outbreak has affected primarily (but not only) gay, bisexual, and other men who have sex with men (MSM) and has spread person-to-person through sexual networks.

This document provides the guidelines for the clinical recognition, diagnosis and management of mpox cases in South Africa developed by the mpox case management IMT stream.

Section 1: Clinical recognition

1.1 Case definitions

The case definitions for suspected, probable and confirmed mpox cases as recommended by the World Health Organization (WHO) are summarized here.

1.1.1 Suspected case

i) A person who is a contact of a probable or confirmed mpox case in the 21 days before the onset of signs or symptoms, and who presents with any of the following: acute onset of fever (>38.5°C), headache, myalgia (muscle pain/body aches), back pain, profound weakness, or fatigue.

OR

ii) A person presenting with an unexplained acute skin rash, mucosal lesions or lymphadenopathy (swollen lymph nodes). The skin rash may include single or multiple lesions in the ano-genital region or elsewhere on the body. Mucosal lesions may include single or multiple oral, conjunctival, urethral, penile, vaginal, or anorectal lesions. Ano-rectal lesions can also manifest as ano-rectal inflammation (proctitis), rectal pain and/or bleeding.

AND

for which the following common causes of acute rash or skin lesions do not fully explain the clinical picture: varicella zoster (and herpes zoster), measles, herpes simplex, bacterial skin infections, disseminated gonococcal infection, primary or secondary syphilis, chancroid, *lymphogranuloma venereum*, granuloma inguinale, molluscum contagiosum, allergic reaction (e.g., to plants); nontuberculous mycobacterial lung disease, deep fungal infections and any other locally relevant common causes of papular or vesicular rash.

N.B. It is not necessary to obtain negative laboratory results for listed common causes of rash in order to classify a case as suspected. Further, if suspicion of mpox or MPXV infection is high due to either history and/or clinical presentation or possible exposure to a case, the identification of an alternate pathogen which causes a rash should not preclude testing for MPXV, as co-infections have been identified.

1.1.2 Probable case

A person presenting with an unexplained acute skin rash, mucosal lesions or lymphadenopathy (swollen lymph nodes). The skin rash may include single or multiple lesions in the ano-genital region or elsewhere on the body. Mucosal lesions may include single or multiple oral, conjunctival, urethral, penile, vaginal, or anorectal lesions. Ano-rectal lesions can also manifest as ano-rectal inflammation

(proctitis), rectal pain and/or bleeding.

AND

One or more of the following:

- has an epidemiological link to a probable or confirmed case of mpox in the 21 days before symptom onset

- has had multiple and/or casual sexual partners (regardless of sex/gender) in the 21 days before symptom onset

- has a positive test result for orthopoxviral infection (e.g., OPXV-specific PCR without MPXV-specific PCR or sequencing).

1.1.3 Confirmed case

A person with laboratory confirmed MPXV infection by detection of unique sequences of viral DNA by real-time polymerase chain reaction (PCR) and/or sequencing.

1.1.4 Discarded case

A suspected or probable case for which laboratory testing of lesion fluid, skin specimens or crusts by PCR and/or sequencing is negative for MPXV. Conversely, a retrospectively detected probable case for which lesion testing can no longer be adequately performed (i.e., after the crusts fall off) and no other specimen is found PCR-positive, would remain classified as a probable case. A suspected or probable case should not be discarded based on a negative result from an oropharyngeal, anal or rectal swab or from a blood test alone.

1.1.5 Suspected mpox reinfection[1]

- A person who currently meets the criteria for a confirmed case of mpox

AND

- Has a documented history of a previous episode of mpox, as a suspected, probable or confirmed case.
- It is unclear if the person presented a full clinical resolution of the previous episode.

1.1.6 Probable mpox reinfection

[1] Possible explanations for reinfection include unrecognized immunodeficiency, mild initial infection that did not generate mucosal immunity, or differences in mpox viral strains. Clinical features and outcomes of mpox reinfection and infection postvaccination are less severe than initial infection. There have not been any other published cases of reinfection during the 2022 mpox outbreak.
See Kaul D, Twice might be possible: Mpox re -infection, NEJM Journal Watch, 2023. April 18

• A person who currently meets the criteria for a confirmed case of mpox

AND

• Has a documented history of a previous episode of mpox, as a probable or confirmed case.

• Full clinical resolution of the previous mpox episode occurred.

• The time between the resolution of the first episode and the onset of new symptoms is less than three months.

1.1.7 Confirmed mpox reinfection

• A person who currently meets the criteria for a confirmed case of mpox

AND

• Has a documented history of a previous episode of mpox, as a confirmed case.

• Full clinical resolution of the previous mpox episode occurred.

• The time between the resolution of the first episode and the onset of new symptoms is three months or more.

• When possible, strain differentiation is undertaken using genetic sequencing.

OR

• Has a probable mpox reinfection (as described above) with significant strain differentiation between the two mpox infections (e.g. different lineage and descendant lineages) using genetic sequencing.

1.1.8 Mpox persistent infection

- Mpox infection without clinical improvement or resolution of symptoms.

1.1.9 Mpox relapse

- Mpox infection that has improved, but not completely resolved, followed by clinical worsening or new mpox symptoms.

Patients with severe immunodeficiency such as in people living with HIV with CD4 counts <200 can be at risk for persistent and/or relapsed MPXV infections.

1.1.10 Definition of a contact

A person who has been exposed to an infected person with mpox during the infectious period i.e., the period beginning with the onset of the index case's first symptoms and ending when all scabs have fallen off, and who has one or more of the following exposures with a probable or confirmed case of mpox:

- direct skin-to-skin and skin-to-mucosal physical contact (such as touching, hugging, kissing, intimate or sexual contact)
- contact with contaminated materials such as clothing or bedding, including material dislodged from bedding or surfaces during handling of laundry or

cleaning of contaminated rooms
- prolonged face-to-face respiratory exposure in close proximity
- respiratory exposure (i.e., possible inhalation of) or eye mucosal exposure to lesion material (e.g., scabs/crusts) from an infected person
- the above also apply for health workers potentially exposed in the absence of proper use of appropriate personal protective equipment (PPE).

1.2 Clinical presentation of mpox

1.2.1 History and physical examination

Clinicians should conduct a **thorough patient history** to assess possible mpox exposures or epidemiologic risk factors. Mpox is usually transmitted through close, sustained physical contact and has been almost exclusively associated with sexual contact in the multi-country outbreak. It is critical that clinicians take a detailed sexual history of the patient with suspected mpox (see Appendix 1). Also, consider other STIs, see appendix 1 (screening tool).

If mpox is suspected, the healthcare worker **must don PPE** (as per infection prevention and control (IPC guidelines) and perform a **complete physical examination**, including a thorough skin and mucosal (e.g., oral, genital, anal) examination for the characteristic vesiculo-pustular rash of mpox. This allows the clinician to detect lesions of which the patient may be unaware.

Mpox should be considered when a clinician is trying to determine the **cause of a diffuse or localized rash**.

1.2.2 Clinical features of mpox

Mpox can cause a range of clinical signs and symptoms. The illness typically lasts 2-4 weeks. The severity of illness can depend upon the initial health of the individual and the route of exposure. The Clade II genetic group, which is the clade involved in the current multi-country outbreak, is associated with milder disease and fewer deaths than the Clade I virus which circulated in central Africa.

The **incubation period** for mpox is 3–21 days. During this time, no symptoms are observed.

The **initial phase** of clinical illness typically lasts 1 to 5 days, during which time patients may experience fever, headache, back pain, muscle aches, lack of energy and lymphadenopathy.

This is followed by a **second phase**, which typically occurs 1 to 3 days after fever subsides with the appearance of a rash. The rash presents in sequential stages – macules, papules, vesicles, pustules, umbilication before crusting over and desquamating over a period of 2 to 3 weeks. The lesions range in size from 0.5 to 1 cm in diameter and from a few to several thousand in number. Lesions are firm or rubbery, well-circumscribed, deep-seated, and often develop umbilication

(resembles a dot on the top of the lesion). The eruption tends to be centrifugal, starting on the face and extending towards the palms and soles of the hands and feet, and can involve the oral mucous membranes, conjunctiva, cornea and/or genitalia. Oral ulcers are common and may affect a patient's ability to eat and drink leading to dehydration and malnutrition. Rectal swelling and tenesmus are found in some cases. During the multi-country outbreak lesions have often been localized on the genitalia, the peri-anal area and mouth. Inflammation of the pharyngeal, conjunctival and genital mucosa may also occur. Severe penile oedema and distortion may occur. Pain may be severe and has been a primary reason for hospitalization during the multi-country mpox outbreak. Though uncommon, patients with mpox may develop severe and life-threatening complications. For example, the confluence of skin lesions is susceptible to bacterial skin and soft tissue infections such as cellulitis, abscesses, necrotizing soft tissue infections requiring meticulous local wound care; subcutaneous accumulation of fluid in the crusting phase leading to intravascular depletion and shock; and exfoliation resulting in areas of skin that may require surgical debridement and grafting. Other rarer complications include severe pneumonia and respiratory distress, corneal infection which may lead to vision loss, loss of appetite, vomiting and diarrhea which may lead to severe dehydration, electrolyte abnormalities and shock, cervical lymphadenopathy which may lead to retropharyngeal abscess or respiratory compromise, sepsis, septic shock, and, encephalitis and death (see appendix 4 and 5 for clinical monitoring and management of severe cases of mpox).

1.2.2.1 Differential diagnosis

The mpox rash at different stages of evolution, may resemble other infectious diseases or other conditions, including:

- Varicella zoster virus (VZV, chickenpox),
- Herpes simplex virus (HSV),
- Primary or secondary syphilis,
- Disseminated gonococcal infection,
- Hand, foot and mouth disease,
- Chancroid,
- Lymphogranuloma venereum,
- Granuloma inguinale,
- Molluscum contagiosum,
- Measles,
- Scabies,
- Rickettsiosis,
- Chikungunya, Zika virus, dengue fever or other arboviral disease,
- Vasculitis and other bacterial skin and soft tissue infections,
- Nontuberculous mycobacterial lung disease,
- Deep fungal infections and any other locally relevant common causes of papular or vesicular rash.

Often, the rash caused by VZV can be confused with mpox but can be distinguished as the rash in varicella generally progresses quicker, is more centrally located than the centrifugal distribution of mpox, is in multiple stages of development (rather than the same stage as seen in mpox) and patients usually do not have lesions on their palms and soles. Additionally, patients with VZV typically do not have lymphadenopathy, which is often found with mpox. Patients with suspected varicella should receive acyclovir.

It is important to consider the most likely cause of rash and most appropriate management, since mpox is not commonly reported in South Africa.

1.2.2.2

Clinical decision guide

To assist with decision making, refer to Table 1 below and also mpox screening tool.

Table 1: Mpox clinical decision guide

Clinical Questions	More supportive of mpox*	Less supportive of mpox
1. Did the patient have a prodrome	Yes: Recent cases have presented without an obvious prodrome. However, a patient with a strong epidemiological link PLUS prodromal symptoms might increase suspicion of mpox. Notably, lymphadenopathy is a distinguishing feature of mpox.	No: Recent cases have presented without an obvious prodrome. A patient with an epidemiologic link without prodromal symptoms might decrease suspicion of mpox. Close monitoring should occur for development of a rash or other symptoms.
2. Did the patient develop a rash?	Yes: Most cases are expected to have developed a rash at some point in their course.	No: Some cases have developed anorectal pain, tenesmus or bleeding, but these were from non-visible perianal lesions.
3. Where is the rash?	Uncertain: Classically, mpox rashes have started in the face and extremities then spread to rest of body. In recent cases, rash has often begun in mucosal areas (e.g., genital, perianal, oral mucosa) and in some patients, the lesions have been scattered or localized to a specific body site rather than diffuse and have not involved the face or extremities.	Uncertain: Classically, mpox rashes have started in the face and extremities then spread to rest of body. In recent cases, rash has often begun in mucosal areas (e.g., genital, perianal, oral mucosa) and in some patients, the lesions have been scattered or localized to a specific body site rather than diffuse and have not involved the face or extremities.
4. What is the rash appearance?	Deep-seated and well-circumscribed lesions, often with central umbilication. Lesions progress through specific sequential stages, sometimes rapidly—macules, papules, vesicles, pustules, and scabs.	Other presentations of rashes and rashes that do not progress. Remember, rashes in certain stages can be mistaken for other common rash etiologies, including STIs such as syphilis, herpes, etc.
5. Is the stage of rash consistent within each body part?	Uncertain: Classically, lesions on each part of the body evolved at the same stage; however, recent cases have had rashes at different	Uncertain: Classically, lesions on each part of the body are at the same stage; however, recent cases have had rashes at

	stages of progression in the same part of the body.	different stages of progression in the same part of the body.
6. Is the rash painful?	Yes: Mpox rash is sometimes very painful (or pruritic) and is often a reason people seek evaluation and/or treatment.	No: Rashes such as those associated with HSV can be painful however other STIs such as syphilis are not typically painful.
7. Did the patient test positive for other rash etiology?	No: Negative test for other etiologies that cause rashes that appear similar to mpox (e.g., VZV, HSV, syphilis) does not rule out mpox entirely. Coinfections with other STIs have been seen with mpox.	Yes: Positive test for other rash etiology, especially one that cause rashes that appear similar to mpox. Coinfections with STIs, particularly syphilis, have occurred in recent cases, so a positive test does not rule out mpox.
8. Was there contact with a known or suspect mpox case?	• Contact with lesions or bodily fluids • Sexual contacts • Household contacts • Prolonged (3+ hours) unmasked contact within six feet	• Masked contact within six feet • Contact with lesions/bodily fluids while wearing PPE • Shared airspace contact while at least six feet apart
9. Did the patient recently participate in parties or gatherings involving sex, especially with multiple sex partners? Or did the patient participate in intimate contact at venues where there is sex on premises such as bathhouses or saunas?	Yes: There have been a number of cases and contacts that were associated with sex or extended physical contact in sex-related events, in bathhouses/saunas, and/or with multiple sex partners.	No: No participation or contact with someone who has participated in these activities or attended these venues/events is less suggestive of mpox.
10. Is the patient part of a social group known to have high mpox incidence or vulnerability?	Yes: The majority of cases seen in this outbreak have been in men or transgender persons who have sex with men, however anyone can get mpox.	No: No known linkage to a more vulnerable group or any reported high-risk social or sexual behaviors would be less suggestive of mpox.

***While some of the listed factors more strongly suggest an underlying mpox etiology, no one answer is absolute in determining whether to suspect mpox; instead, the collective responses and overall clinical picture should be considered.**

2. Laboratory investigation of mpox

Any individual meeting the case definition of a suspected case of mpox should be offered testing. The decision to test should be based on both clinical and epidemiological factors, linked to an assessment of the likelihood of infection and the risk of further spread. The rash that develops in mpox may resemble other infectious diseases or conditions, making it challenging to differentiate mpox solely based on clinical presentation (see 1.2.2.1). It is therefore important to consider other potential causes of discrete skin lesions or a disseminated rash.

2.1 Specimens

The recommended specimen type for laboratory confirmation of mpox is skin lesion material, including swabs of lesion surface and/or exudate, or lesion crusts (see Table 1). Blood specimens are generally not useful for diagnosis of acute illness, unless this is taken to rule out other infections.

How to collect the specimens:

- Use appropriate PPE as per IPC protocol for mpox;
- Swab the lesion vigorously (but without causing injury), to ensure adequate transfer of material to the swab.
- Swabs can be transported dry in capped tubes **or** placed in viral transport media (VTM).

Mpox is diagnosed by polymerase chain reaction (PCR) test for the MPXV on a swab taken from one or more vesicles or ulcers (See Table 2).

Table 2: Summary of specimen type and collection materials required for mpox testing

Specimen type	**Collection materials**	**Comments**
Skin lesion material: Swabs of lesion surface, lesion roof, lesion exudate Lesion roof/s Lesion crust/s	Dacron or polyester flocked swabs with VTM or dry swab	**Preferred sample** **Required for all investigations**
Throat swab	Dacron or polyester flocked swabs with VTM or dry swab	**Optional**, on individual case basis and in consultation with NICD ONLY
Plasma	EDTA collection tube (purple top)	**Optional,** on case by case basis and in consultation with NICD ONLY
Serum	Serum separator tubes or clotted blood	**Optional,** on case by case basis and in consultation with NICD ONLY

Also screen for other STIs (HIV, syphilis (and gonococcus/chlamydia by clinical exam or by PCR-based testing). Several case series have found concomitant HIV in ~40% and other STIs in ~30%.

2.2 Packaging and shipment of clinical specimens

Specimens **should be stored refrigerated** until transported to the laboratory as soon as possible after collection. Transport of specimens should comply with Category A, UN2814 “infectious substance, affecting humans”. All specimens being transported should have appropriate triple packaging, labeling, and documentation. Shipping requires a dangerous goods-certified shipper. It is not required to ship the specimens on ice or refrigerated.

2.3 Laboratory testing methods

Testing for the presence of MPXV should be performed in appropriately equipped laboratories by staff trained in the relevant technical and biosafety procedures (WHO, 2024).

The WHO currently does not recommend the use of any rapid tests (or lateral flow assays).

2.3.1 Nucleic acid amplification testing and sequencing

It is recommended that mpox is investigated using nucleic acid amplification testing, using real-time or conventional polymerase chain reaction (PCR) on specimens (see Table 1) (WHO, 2024). Either mpox specific or orthopoxvirus-wide assays may be used. No other orthopoxviruses are known to be reported in humans in South Africa. Nevertheless, where orthopoxvirus-wide assays are used, sequencing must be performed to determine the species of virus involved. It is important to choose assays that may detect both Clade I and Clade II MPXV DNA. When assays are used that cannot distinguish between Clade I and Clade II virus DNA, it is recommended that sequencing is performed to determine the Clade of the virus involved in the infection. Sequencing of cases during an outbreak should be performed in order to determine the circulation of MPXV variants.

A positive PCR result is confirmatory of the clinical diagnosis. A negative PCR finding should be carefully considered and if mpox is still considered the possible diagnosis, and no other diagnosis forthcoming, testing on freshly collected samples requested.

2.3.2 Electron microscopy and histology

Electron microscopy can be used to evaluate the specimen for any potential poxvirus. Considering the availability of molecular assays and the high technical skills and facility required for this method, it is not routinely used for the diagnosis of poxviruses, and cannot reliably distinguish between individual poxvirus species. Histology may be informative for differential diagnosis of rash conditions but is not required for confirmation of mpox.

2.3.3 Viral culture

Virus isolation is not recommended as a routine diagnostic procedure and should only be performed in laboratories with appropriate experience and containment facilities. In South Africa, MPXV culture is performed in maximum (or biosafety level 4) containment laboratories.

2.3.4 Serology

Antibody detection from plasma or serum should not be used alone for clinical diagnosis of mpox. MPXV-specific antibody-based tests are expected to face challenges of cross-reactivity with antibodies to other orthopoxviruses as well as those elicited by vaccination. The WHO recommends that serology testing should be restricted to reference laboratories until further evidence is available (WHO, 2024).

2.4 Access to laboratory testing in South Africa

Laboratory testing for mpox is available in the public and private health sectors of South Africa. Instructions for submission of specimens for testing from public sector facilities are available from the National Institute for Communicable Diseases (NICD) website (see https://www.nicd.ac.za/diseases-a-z-index/mpox-2/). The NICD serves as a national reference laboratory for mpox in South Africa*.

*** All private laboratories undertaking mpox testing must contact the NICD to ensure integration of data for reporting through the notifiable medical conditions (NMC) system and sequencing surveillance of mpox**.

3. Clinical management of mpox

Mpox generally presents as a mild, self-limiting disease which resolves often without any medical intervention in 2-4 weeks. However, patients who are immunosuppressed or have comorbidities are at risk for more severe, and fatal, mpox.

If concurrent HIV infection and on ART treatment continue treatment. If not on ART treatment or defaulted initiate treatment for mild cases.

3.1 Management of mild or uncomplicated mpox

Patients with suspected or confirmed mpox with **mild, uncomplicated disease and not at high risk for complications** can be isolated at home, for the duration of the infectious period, as long as measures to limit spread to others can be employed at home. Considerations for mild or uncomplicated mpox:

- Ideally, a home assessment should be conducted when deciding to isolate and care for a person with suspected or confirmed mpox with mild uncomplicated disease in a home setting.

- A patient with mild, uncomplicated mpox cared for at home should be isolated in an area separate from other household members and away from shared areas of the home (i.e. a separate room or area with a curtain or screen). Caution should be taken when handling and cleaning linens, household surfaces and during waste disposal.
- Symptomatic treatment such as antipyretics for fever and analgesia for pain should be considered. Conservative treatment of rash lesions should be performed dependent on their stage with aims to relieve discomfort, speed healing and prevent complications, such as secondary infections or exfoliation. Antibiotic therapy or prophylaxis is not warranted unless signs of secondary bacterial infection (i.e. cellulitis, abscess) are present.
- Patients with mpox should be assessed for their nutritional status and given adequate nutrition and appropriate rehydration.
- Counsel patients with mild mpox about signs and symptoms of complications that should prompt urgent care.

3.2 Management of severe mpox

3.2.1 Definition for severe mpox

Severe mpox disease is characterized by conditions such as:

- haemorrhagic disease;
- a large number of lesions such that they are confluent;
- necrotic lesions;
- severe lymphadenopathy that can be necrotizing or obstructing (such as in airways);
- involvement of multiple organ systems and associated comorbidities (for example, pulmonary involvement with nodular lesions; sepsis; encephalitis; myocarditis; ocular or periorbital infections); or other conditions requiring hospitalization;
- involvement of anatomic areas which might result in serious sequelae that include scarring or strictures — these include lesions directly involving the pharynx causing dysphagia, inability to control secretions, or need for parenteral feeding;
- lesions and severe oedema of the penile foreskin, vulva, vagina, urethra, or anorectum with the potential for causing strictures or requiring catheterization;
- anorectal lesions interfering with bowel movements (for example, severe pain); and severe infections (including secondary bacterial skin infections), especially those that require surgical intervention such as debridement.

3.2.2 Treatment for severe mpox[2]

Treatment should also be considered for use in people who are at high risk for severe disease:

- Patients who are severely immunocompromised due to conditions such as advanced or poorly controlled human immunodeficiency virus (HIV),

[2] Call the NICD hotline to discuss patient with team of experts for decision on Tecovirimat use

leukemia, lymphoma, generalized malignancy, solid organ transplantation, therapy with alkylating agents, antimetabolites, radiation, tumor necrosis factor inhibitors, high-dose corticosteroids, being a recipient of a hematopoietic stem cell transplant <24 months post-transplant or ≥24 months but with graft-versus-host disease or disease relapse, or having autoimmune disease with immunodeficiency as a clinical component

- Paediatric populations, particularly patients younger than 1 year of age
- Pregnant or breastfeeding people
- People with a condition affecting skin integrity — conditions such as atopic dermatitis, eczema, burns, impetigo, VZV infection, herpes simplex virus infection, severe acne, severe diaper dermatitis with extensive areas of denuded skin, psoriasis, or Darier disease (keratosis follicularis)

Table 3: Risk factors and clinical findings described as being associated with severe disease and poor outcomes (based on small, uncontrolled, observational studies).

Patient groups at higher risk of sever diseases or complications	• Children, pregnant women, persons who are immunosuppressed such as persons living with HIV having poorly controlled disease • Though data are lacking, patients with chronic skin conditions (i.e burns) may also be at higher risk for complications, such as bacterial infection
Clinical signs and symptooms of complications	• Nausea and vomiting, painful cervical lymphadenopathy causing dysphagia, poor oral intake, eye pain, vision abnormalities, hepatomegaly, sepsis, dehydration, respiratory distress/pneumonia, and/or confusion.
Laboratory abnormalities	• Elevated hepatic transaminases (AST and/or ALT), low blood urea nitrogen (BUN), low albumin, elevated white blood count (WBC), or low platelet count
Skin lesion severity score	From small pox experience -Mild (<25-99 lesions) -Moderate (25-99 skin lesions) -Severe (100-250 skin lesions) -Very sever (>250 skin lesions)

Source: WHO, Clinical management and infection prevention and control of monkeypox, Interim rapid response guidance 10 June 2022

For patients at high risk for progression to severe disease, treatment should be administered early in the course of illness along with supportive care and pain control. Brincidofovir and cidofovir have not been shown to be effective against MPXV infection in humans and are not recommended for treatment of severe mpox cases.

3.2.2.1 Tecovirimat

Tecovirimat is an inhibitor of the orthopoxvirus VP37 envelope wrapping protein and is indicated for the treatment of human smallpox disease in adults and pediatric patients weighing at least 13 kg. The efficacy of tecovirimat may be reduced in immunocompromised patients. In Europe, it is also indicated to treat complications due to replication of the vaccinia virus following vaccination against smallpox. In Europe, tecovirimat is also used to treat monkeypox and cowpox in adults and children. Tecovirimat is an antiviral drug that helps to prevent the spread of virus and reduce viremia. The evidence for efficacy of tecovirimat is still emerging with a trial underway and further evidence may emerge that may change this recommendation.

Indications for Tecovirimat

Hospitalised patients must meet all of the eligibility criteria and none of the exclusion criteria listed below:

• MPXV infection is confirmed by polymerase chain reaction (PCR) testing

AND

• symptomatic with a syndrome compatible with ongoing MPXV infection

AND

• meeting any one or more of the criteria for severe or complicated disease as outlined below:

- critical illness where MPXV infection is considered to be a key factor driving the critical condition of the patient
- intractable pain (Defined as patients who have been prescribed topical and systemic analgesia using World Health Organization (WHO) pain ladder with at least 24 hours exposure to opioids (if clinically appropriate)
- rectal abscess or fistula formation
- upper respiratory tract mucocutaneous involvement that is affecting swallowing or airways
- patient with primary or acquired immunodeficiency, or on immunosuppressive medication as per Green Book definitions
- extensive cutaneous disease (for example more than 100 lesions or a large number of lesions such that they are confluent or necrotic disease).
- haemorrhagic disease;
- severe lymphadenopathy that can be necrotizing or obstructing (such as in airways);
- involvement of multiple organ systems and associated comorbidities (for example, pulmonary involvement with nodular lesions; sepsis; encephalitis; meninigits or other neurological manifestation, myocarditis; ocular or periorbital infections); or other conditions requiring hospitalization;
- involvement of anatomic areas which might result in serious sequelae that include scarring or strictures — these include lesions directly involving the pharynx causing dysphagia, inability to control secretions, or need for parenteral feeding;
- lesions and severe oedema of the penile foreskin, vulva, vagina, urethra, or anorectum with the potential for causing strictures or requiring catheterization;

- anorectal lesions interfering with bowel movements (for example, severe pain); and severe infections (including secondary bacterial skin infections), especially those that require surgical intervention such as debridement

Exclusion criteria

Patients are not eligible for treatment if any of the following apply:

- Hospitalised for reasons other than monkeypox virus infection or do not meet any of the criteria for severe and complicated disease
- Known hypersensitivity reaction to the active substances or to any of the excipients of the medications below as listed in their respective SmPC.

Relative contraindication

There is lack of sufficient evidence to inform guidance on use of tecovirimat in adults and children of less than 13 kg body weight.
Weigh risk and severity of symptoms and consult with NICD hotline if weight less than 13kgs.

Tecovirimat is not a registered drug in South Africa. The use of the drug is authorized through Section 21 Access to Unregistered Medicines application with the South African Health Products Authority (see Appendix 2). Tecovirimat is available as an oral capsule (200 mg) and injection for intravenous (IV) administration. IV Tecovirimat is not available in South Africa. Refer to Table 4 for oral administration:

Table 4: Proposed weight-based oral dosing and drug food preparation instructions for patients who cannot swallow capsules.

For participants who cannot swallow capsules, study drug can be prepared by carefully mixing the required contents in 30ml. of liquid (e.g., milk, chocolate milk) or soft food (e.g., apple, sauce, yoghurt). The entire mixture should be administered within 30 minutes of its preparation.					
Body weight in kgs	Dose (mg)	Number of capsules	Frequency	Route	Instructions for patients who cannot swallow
120 and above	600	3 capsules	Three times a day every eight hours	Oral	Mix contents of 3 capsules with 30 ml. of liquid or soft food.
40 to less than 120	600	3 capsules	Twice per day every twelve hours	Oral	Mix contents of 3 capsules with 30 ml. of liquid or soft food.
25 to less than 40	400	2 capsules	Twice per day every twelve hours	Oral	Mix contents of 2 capsules with 30 mL of liquid or soft food
13 to less than 25	200	1 capsule	Twice per day every twelve hours	Oral	Mix contents of 1 capsule with 30 mL of liquid or soft food.
6 to less than 13	100	½ capsule	Twice per day every twelve hours	Oral/ Nasogastric tube[3]	Mix contents of 1 capsule with 30 mL[4] of liquid or soft food. Administer one half of mixture (15 mL) to patient. Discard unused mixture.
Less than 6	50	¼ capsule	Twice per day every twelve hours	Oral/ Nasogastric tube	Mix contents of 1 capsule with 30 mL[5] of liquid or soft food. Administer one quarter of mixture (7.5 mL) to patient. Discard unused mixture.

- Treatment duration: 14 days, but may be longer (not to exceed 90 days) or shorter depending on disease progression and patient's clinical condition[5]
- Dosing should be taken with food.

[3] In laboratory experiments, consistent suspension was not attained in the lowest doses. Thus, administration of the 50mg and 100mg dosing is recommend via nasogastric tube

[4] Liquid/soft food volume as noted as per physician/pharmacy discretion

[5] Patients with severe disease may require longer duration of treatment, speak to the NICD clinician hotline

Note:

Adverse reactions may include headache (12%); nausea (5%); abdominal pain (2%); vomiting (2%). Drug interactions have been reported in healthy adults with co-administration of repaglinide (hypoglycemia) and midazolam (decreased effectiveness of midazolam).

3.3 Special considerations

3.3.1 Immunocompromised patients

Most patients, including those with well-controlled HIV, experience self-limiting disease and recover with supportive care alone. However, patients who are significantly immunocompromised, most commonly from advanced HIV (CD4 T lymphocyte [CD4] cell count <200 cells/mm^3 and especially <50 cells/mm^3), have experienced more severe infections, including increased likelihood of hospitalization and disseminated disease. Although they may have a higher risk of infection and severe illness, severe outcomes are not universally seen in people who are immunocompromised.

3.3.2 Women and persons that are pregnant or postpartum

In utero transmission of MPXV has been documented as has transmission from mother to child via direct contact. Cases of miscarriages or stillborn infants have been reported. The association between severity of maternal illness and these outcomes is unclear. There are no data reported from the use of tecovirimat in pregnant women. Animal studies are insufficient with respect to reproductive toxicity. Tecovirimat is not recommended during pregnancy, unless the benefits are considered to outweigh the risks. Pregnancy testing should be considered in individuals of childbearing potential to inform discussion about clinical risks and benefits.

For women who are breast-feeding, the SmPC for tecovirimat states: “It is unknown whether tecovirimat/metabolites are excreted in human milk. Available toxicological/safety data in animals have shown excretion of tecovirimat in milk A risk to the newborns/infants cannot be excluded. Consider interrupting breast-feeding during treatment with tecovirimat if formula-feeding is considered safe and feasible. If breastfeeding is interrupted, recommence on completion of tecovirimat treatment

3.3.3 Children

Tecovirimat is not recommended if under 13kgs, weigh risk and severity of symptoms.

3.3.4 Breastfeeding

While Tecovirimat is not indicated in breastfeeding, the risk of discontinuing breastfeeding should be discussed on an individual basis.

Contraindications

• Severe renal impairment

• Severe hepatic impairment

• Pregnancy

3.4 General management considerations

3.4.1 Clinical management of skin lesions

- Treatment of rash lesions depends on the stage of evolution of the rash.
- The aim is to relieve discomfort, speed healing and prevention of complications, such as secondary infections or exfoliation.
- The patient should be counseled not to scratch skin. Patients should be instructed to keep skin lesions clean and dry to prevent bacterial infection. They should be instructed to wash hands with soap and water or use alcohol-based hand sanitizer before and after touching the skin rash to prevent infection. Then lesions may be cleaned gently with sterile water or antiseptic solution. Rash should not be covered but rather left to open air to dry.
- For complications of skin lesions such as exfoliation or suspicion of deeper soft tissue infection (pyomyositis, abscess, necrotizing infection), consider consultation with appropriate specialist (i.e. wound care specialist, ID specialist, and/or surgeon). Debridement of the skin should not be done unless performed by an expert wearing appropriate PPE. Optimal management of skin lesions is uncertain and needs further research.
- See section 3.1 for antibiotic treatment advice.

3.4.2 Management of pain

Pain is treated empirically and in line with the South African Primary Healthcare Essential Medicines List, Chapter 20: Pain (NEMLC Recommendations for Medicine Amendments, 2016 -2018). Topical and systemic strategies should be used to manage pain. **Pain management strategies should be individualized and patient-centered, tailored to the needs and context of an individual patient.**

3.4.3 Ocular manifestations

The virus may enter the eye *via* autoinoculation and cause a range of problems from mild to severe, including conjunctivitis, blepharitis, keratitis, and corneal ulcer, corneal scarring, and rarely loss of vision. Corneal scarring and vision loss are potential severe consequences of ocular involvement. Bacterial superinfection of corneal ulcerations can cause severe complications. The constellation of facial and

ocular symptoms was observed in association with systemic symptoms (e.g., fever, painful cervical adenopathy) and risk factors for sexual transmission.

If ocular involvement is suspected, then ophthalmologic consultation should be strongly considered for a thorough evaluation and continued monitoring of the patient's condition and extent of disease, especially in cases of vision changes, eye pain, or increasing redness. Acute infection can currently be diagnosed by PCR testing of swabs of lesions on the conjunctiva in already confirmed mpox cases. Clinical judgment should be used in assessing the stability of underlying eye structures, and caution should be taken with obtaining swabs if corneal ulcers or severely painful lesions are present. Slit lamp examination and dilated funduscopic examination can be helpful for determining whether anterior segment structures (conjunctiva, cornea, iris) or posterior segment structures (retina, nerve, choroid) are involved. Infection prevention and control precautions and equipment disinfection protocols are recommended when examining patients at the slit lamp biomicroscope. **Trifluridine may be considered** in cases of mpox conjunctivitis and is recommended in cases of mpox keratitis, in consultation with an ophthalmologist. Trifluridine is a topical antiviral used for management of herpes-simplex keratitis. Additionally, in patients with corneal disease, including corneal ulcer, consider topical lubricants and/or antibiotics to prevent bacterial superinfection, which can be a vision-threatening complication of corneal ulcer.

3.4.2 Mental health care

Prompt identification and assessment for anxiety and depressive symptoms in the context of mpox should be done. Initiation of basic psychosocial support strategies and first-line interventions for the management of new anxiety and depressive symptoms should be taken. Psychosocial support strategies should be the first-line interventions for management of sleep problems in the context of acute stress. A diagnosis of mpox can lead to significant mental and psychosocial effects, including fear of the disease or death; loss of sense of meaning of life; or loss of faith; physical and social isolation from family or community; stigma associated with diagnosis and returning to the community, scarring and disability (e.g. blindness) associated with the disease. Patients with mpox should receive compassionate, respectful, people-centered care consistently, while ensuring appropriate and adequate protection of household members, visitors and health workers. Basic psychosocial support skills are essential for management of all patients and represent an integral part of care that should be provided for all.

Refer to the requirements of the Mental Health Act (Act 17 of 2002) of South Africa

3.4 Infection prevention and control

Infection prevention and control (IPC) measures for suspected and confirmed mpox cases are provided in the IPC Standard Operating Procedure for Healthcare Management of Mpox Patients (National Department of Health, South Africa).

References

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WHO mpox outbreak toolbox. Access at: https://www.who.int/emergencies/outbreak-toolkit/disease-outbreak-toolboxes/mpox-outbreak-toolbox (As on 13 June 2024)

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Yinka-Ogunleye A, Aruna O,et al. 2019. Outbreak of human monkeypox in Nigeria in 2017-18: a clinical and epidemiological report. Lancet Infect Dis. 19(8):872-879. DOI: 10.1016/S1473-3099(19)30294-4.

Appendix 1: General guidelines for taking a sexual history

Herewith a guideline for taking sensitive but accurate sexual history from a patient (Savoy et al. 2020, Sexual health history: techniques and tips. *Am Fam Physician.* 2020;101(5):286-293)

Key points to ensure a productive sexual health conversation:

- Avoid moral or religious judgment of the patient's behavior
- Avoid terms that make assumptions about sexual behavior or orientation and ensure shared understanding around terminology and pronunciation for patient concerns to avoid confusion
- Establish rapport and consent before addressing sensitive issues
- Use a sensitive tone and use neutral and inclusive terms that avoids assumptions
- Respect the patient's privacy and be culturally sensitive and use gender inclusive language
- Create a safe space for the conversation

Gender inclusive terminology:

Sex: Determination made at birth referring to biological category of male, female, intersex

Sexual orientation: Self-determined sexual identity in relation to genders attracted to

Cisgender: Self-determined term when gender is aligned with sex (assigned at birth)

Transgender: Self-determined term when gender is not aligned with sex (assigned at birth)

Gender identify: Self-determined sense of being along (female, male, combination of both or somewhere in between) or outside of a gender spectrum resulting from multiple factors such as biological characteristics, environmental and cultural factors, and self-understanding

Gender expression: Signals or external ways that a person express their gender identity

Gender perception: The way others interprets a person's gender

Questions for a detailed sexual history using the 5 P model:

- General questions: Are you currently sexually active? Have you ever been sexually active? What is your gender? How do you identify? What pronouns do you prefer?
- **P**artners: How do your partner/s identify? How many partners have you had in the past month? The past six months? Lifetime?
- **P**ractices: What sexual activities do you partake in? Do you participate in vaginal sex? Oral sex? Anal sex?
- **P**ast history/protection: Have you ever had any sex-related infectious diseases? Have you ever been tested for HIV? Would you like to be tested for HIV? What do you do to protect yourself from HIV and other sex-related diseases?
- **P**regnancy plans: Are you trying to conceive a baby (if not pregnant)? What method of contraception do you use?

Pleasure: Do you use any devices to enhance pleasure during sex? Do you share the devices with others?

Appendix 2: Section 21 Tecovirimat access process

1. Patient suspected mpox: Initial suspicion based on symptoms.
2. Patient PCR confirmed mpox: Confirmation of mpox via PCR test.
3. Patient hospitalized and met case definition of severe infection: Criteria for hospitalization based on severity, and recommendation from NICD clinical team to use Tecovirimat.
4. Submit per patient Section 21 application to SAHPRA: Application submission for each patient to the South African Health Products Regulatory Authority (SAHPRA), use online application portal ensure per patient tab is used
5. Email application reference number to marione.schonfeldt@health.gov.za, who will fast track application approval with SAHPRA
6. SAHPRA approval granted: Authorization received from SAHPRA email approval to marione.schonfeldt@health.gov.za
7. Tecovirimat capsules issued by bulk storage site: Medication issued in line with SAHPRA approval.
8. Public or private sector institution arrange collection of capsules in Pretoria: Coordination for collection by the treating institution, Ms Schonfeldt will provide the details of the pharmacy where the stock should be collected.
9. Tecovirimat issued to patient by treating institution: Distribution to the patient, treating institution to dispense in line with prescription.
10. Treating physician to report on progress and ADR to SAHPRA as per patient Sec 21 approval.
11. Treating physician to complete WHO reporting tool through the WHO Global Clinical Platform (https://www.who.int/tools/global-clinicalplatform/monkeypox), which shall include reporting of: (i) all anonymized patient data, including clinical information (concurrent conditions, symptoms), (ii) all clinical outcomes, and (iii) any complications experienced during the course of hospitalization or course of treatment; and
12. Any suspected unexpected serious adverse reactions (SUSARs) that are life-threatening and any other potentially treatment related serious adverse events (SAEs) are promptly reported to the national pharmacovigilance centre, WHO and SIGA. For WHO, such SUSARs and SAEs will be reported as follows: by mail addressed to World Health Organization, Regulation and Prequalification Department, 20 Avenue Appia, 1211 Geneva 27, Switzerland, and via email at pvsupport@who.int.

Appendix 3: Vital signs and clinical features to monitor systematically

Vital signs and pain assessment	• Temperature, heart rate, blood pressure, respiratory rate, peripheral oxygen saturation, level of consciousness using the alter, voice, pain, unresponsive scale (AVPU), point of care glucose, and body weight and height to calculate BMI and childrens mid-upper arm circumference (MUAC) • Pain scale
General condition	• Is the patient able to eat and drink without support? • Is the patient able to sit and walk independently? • Has the patient had recent weight loss since onset of symptoms?
Rash characterisation	• Stage of rash: macules, papules, vesicles, pustules, crusted over, exfoliation • Location of the rash (face, arms, torso, genitals, legs, mucosa) • Number of lesions -Mild (<12 skin lesions) -Moderate (25-99 skin lesions) -Severe (100-250 skin lesions) -Very severe (>250 skin lesions) • If exfoliation present: %body affected (>10% is concerning)
Presence of bacterial secondary infection	Cellulitis, abscess, pyomyitis, necrotizing soft tissue infection
Neurological status	AVPU, seizures, coma
Volume status	Presence of dehydration: mild, moderate, or severe
Signs of perfusion	Pulse rate, strength, capillary refill Urine output (>0.5mL/kg/hr=good in adults; 1.0mL/kh/hr in children) Mottling of skin
Respiratory system	Respiratory rate, Sp02, signs of respiratory distress
Nutritional assessment	Change in appetite, weight loss, body weight, height, calculation of BMI, MUAC in children Signs of malnutrition-use standardised tool (e.g Malnutrition Universal Screening Tool)
Laboratory tests	Na, K, HCo, BUN, creatinine, AST, ALT, glucose, white blood count, Hg, platelet, PT/INR, Cl, calcium, albumin

Source: WHO, Clinical management and infection prevention and control of monkeypox, Interim rapid response guidance 10 June 2022

Appendix 5: Clinical management of complications and severe forms of mpox

Complication	Treatment
Skin Exfoliation	-Heavy rash burden can lead to exfoliation (similar to partial thickness burns), dehydration, and protein loss. - Estimate % skin affected; treat like burns. - Minimize fluid loss and promote skin healing. - Ensure adequate hydration and nutrition. - Consult surgeon, dermatologist, or wound care specialist. - Debridement and skin grafting if needed.
Necrotizing Soft Tissue Infection	- Life-threatening deep tissue infection with necrosis and systemic toxicity. Suspect with oedema, crepitus, malodorous discharge, or severe pain. - Consider bacterial causes; start broad-spectrum antibiotics. - Consult surgeon for surgical emergency.
Pyomyositis	- Suspect when muscle tenderness occurs; can be caused by MPX or skin flora like Staphylococcus or Streptococcus. - Use ultrasound for diagnosis, collect blood cultures, start broad-spectrum antibiotics, and perform surgical drainage.
Cervical Adenopathy	- Can occur in 85.65% of cases with lymphadenopathy. - Large adenopathy with oropharyngeal lesions may risk respiratory compromise and dehydration. - Consult surgeon, anesthesiologist, and infectious disease specialists; steroids may be used in severe cases.
Ocular Lesions	- Risk of corneal scarring and vision loss; may present as conjunctivitis. - Immediate ophthalmologist evaluation. - Use ophthalmic antibiotics/antivirals, vitamin A, eye lubrication, and saline-soaked protective pads. - Avoid steroid ointments; consider trifluridine eye drops if indicated.
Pneumonia	- Follow WHO guidelines for severe acute respiratory infections. - Provide supportive care and oxygen therapy. - Administer antibiotics if bacterial superinfection is suspected.

Acute Respiratory Distress Syndrome (ARDS)	- Provide oxygen, non-invasive ventilation, or mechanical ventilation as needed. - Manage according to WHO guidelines for severe acute respiratory infections.
Severe Dehydration	- Caused by intravascular volume loss due to rash or gastrointestinal symptoms. - Resuscitate with IV or IO fluids, monitor closely. - Follow WHO guidelines for children if applicable.
Sepsis and Septic Shock	- Caused by immune response to infection. - Early identification and infection management with supportive care, fluid resuscitation, and vasopressors if needed. - Follow WHO guidelines for severe acute respiratory infections.
Encephalitis	- Consider lumbar puncture for CSF evaluation. - Monitor and support ABCD (airway, breathing, circulation, disability). - Control seizures, administer antibiotics/antivirals if indicated.
Nutritional Considerations	- Assess nutritional status; assist feeding if needed. - Consider enteral nutrition if oral intake is insufficient. - Monitor patients at risk for refeeding syndrome and start enteral feeding slowly. - Do not force-feed patients with reduced consciousness; refer to WHO guidelines for severe malnutrition.

Source: WHO, Clinical management and infection prevention and control of monkeypox, Interim rapid response guidance 10 June 2022

Appendix 6: Links to clinical talks

1. https://medtalkz.com/cgi-bin/medtalkz/showevents.pl?moreinfo:261
2. https://www.youtube.com/watch?v=SYHScnwuhJc

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

Mpox clinical management

Presented 9 July 2024

Background of Mpox

- An emerging zoonotic viral infection but can be transmitted from person-to-person.

- Can result in outbreaks in the human population
  - Multi-country outbreak (clade II)
  - DRC outbreak (clade I)

- The disease is caused by infection with the monkepox virus, an orthopoxvirus similar to variola virus that caused smallpox.

Case definitions of Mpox

http://www.nicd.ac.za/mpox

Case definitions of Mpox

Suspected case

i) A person who **is a contact of a probable or confirmed mpox case in the 21 days before the onset of signs or symptoms**

- who presents with any of the following: **acute onset of fever (>38.5°C), headache, myalgia (muscle pain/body aches), back pain, profound weakness, or fatigue**.

OR

ii) A person presenting with **an unexplained acute skin rash, mucosal lesions or lymphadenopathy** (swollen lymph nodes). The skin rash may include single or multiple lesions in the ano-genital region or elsewhere on the body.

- Mucosal lesions may include single or multiple oral, conjunctival, urethral, penile, vaginal, or anorectal lesions. Ano-rectal lesions can also manifest as ano-rectal inflammation (proctitis), rectal pain and/or bleeding.

AND

for which the following common causes of acute rash or skin lesions do not fully explain the clinical picture

varicella zoster (and herpes zoster), measles, herpes simplex, bacterial skin infections, disseminated gonococcal infection, primary or secondary syphilis, chancroid, lymphogranuloma venereum, granuloma inguinale, molluscum contagiosum, allergic reaction (e.g., to plants); nontuberculous mycobacterial lung disease, deep fungal infections and any other locally relevant common causes of papular or vesicular rash.

Probable case

- A person presenting with an unexplained acute skin rash, mucosal lesions or lymphadenopathy (swollen lymph nodes).
  - The skin rash may include single or multiple lesions in the ano-genital region or elsewhere on the body. Mucosal lesions may include single or multiple oral, conjunctival, urethral, penile, vaginal, or anorectal lesions. Ano-rectal lesions can also manifest as ano-rectal inflammation (proctitis), rectal pain and/or bleeding.
- AND
- One or more of the following:

  • has an epidemiological link to a probable or confirmed case of mpox in the 21 days before symptom onset

  • has had multiple and/or casual sexual partners (regardless of sex/gender) in the 21 days before symptom onset

  • has a positive test result for orthopoxviral infection (e.g., OPXV-specific PCR without MPXV-specific PCR or sequencing).

Confirmed case of Mpox

- A person with laboratory confirmed MPXV infection by detection of unique sequences of viral DNA by real-time polymerase chain reaction (PCR) and/or sequencing.

Discarded case of Mpox

- A suspected or probable case for which laboratory testing of lesion fluid, skin specimens or crusts by PCR and/or sequencing is negative for MPXV.
- Conversely, a retrospectively detected probable case for which lesion testing **can no longer be adequately performed** (i.e., after the crusts fall off) and no other specimen is found PCR-positive, would **remain classified as a probable case.**
- **NB: A suspected or probable case should not be discarded based on a negative result from an oropharyngeal, anal or rectal swab or from a blood test alone.**

Suspected Mpox re-infection

• A person who currently meets the criteria for a confirmed case of mpox

AND

• Has a documented history of a previous episode of mpox, as a suspected, probable or confirmed case.

• It is unclear if the person presented a full clinical resolution of the previous episode

Probable Mpox re-infection

• A person who currently meets the criteria for a confirmed case of mpox

AND

• Has a documented history of a previous episode of mpox, as a probable or confirmed case.

• Full clinical resolution of the previous mpox episode occurred.

• **The time between the resolution of the first episode and the onset of new symptoms is less than three months**

Confirmed Mpox re-infection

• A person who currently meets the criteria for a confirmed case of mpox.

AND

• Has a documented history of a previous episode of mpox, as a confirmed case.

• Full clinical resolution of the previous mpox episode occurred.

• **The time between the resolution of the first episode and the onset of new symptoms is three months or more**.

• When possible, strain differentiation is undertaken using genetic sequencing.

OR

• Has a probable mpox reinfection (as described above) with significant strain differentiation between the two mpox infections (e.g. different lineage and descendant lineages) using genetic sequencing.

Persistent Mpox Infection

Mpox persistent infection

- Mpox infection without clinical improvement or resolution of symptoms.

Mpox relapse

- Mpox infection that has improved, but not completely resolved, followed by clinical worsening or new mpox symptoms.

- Patients with severe immunodeficiency such as in people living with HIV with CD4 counts <200 can be at risk for persistent and/or relapsed MPXV infections.

Clinical Features and Laboratory Investigation

Clinical features of Mpox

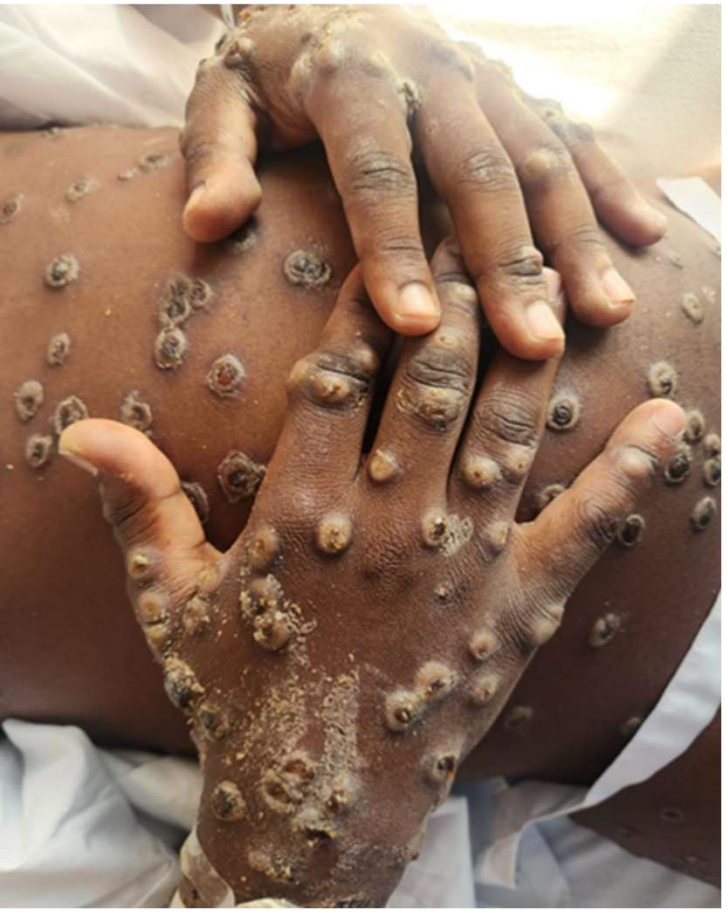
- Mpox can cause a range of clinical signs and symptoms. The illness typically lasts 2-4 weeks

- The **incubation period** for mpox is 3–17 days. During this time, no symptoms are observed.

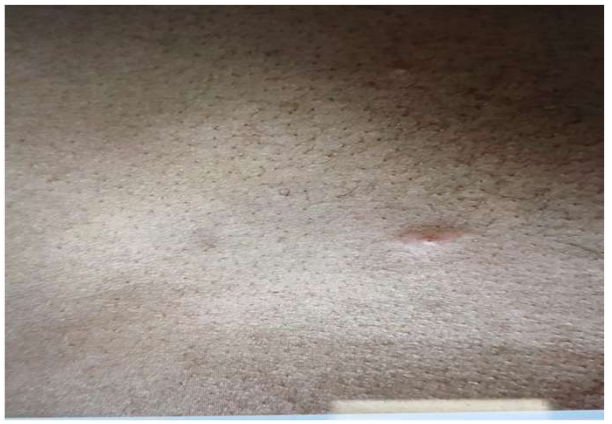
- The **initial phase** of clinical illness typically lasts 1 to 5 days, during which time patients may experience fever, headache, back pain, muscle aches, lack of energy and lymphadenopathy.

- **Second phase**, which typically occurs 1 to 3 days after fever subsides with the **appearance of a rash.**

Mpox Rash



- The rash presents in sequential stages – macules, papules, vesicles, pustules, umbilication before crusting over and desquamating over a period of 2 to 3 weeks.
- The lesions range in size from 0.5 to 1 cm in diameter and from a few to several thousand in number.
- Lesions are firm or rubbery, well-circumscribed, deep-seated, and often develop umbilication (resembles a dot on the top of the lesion).

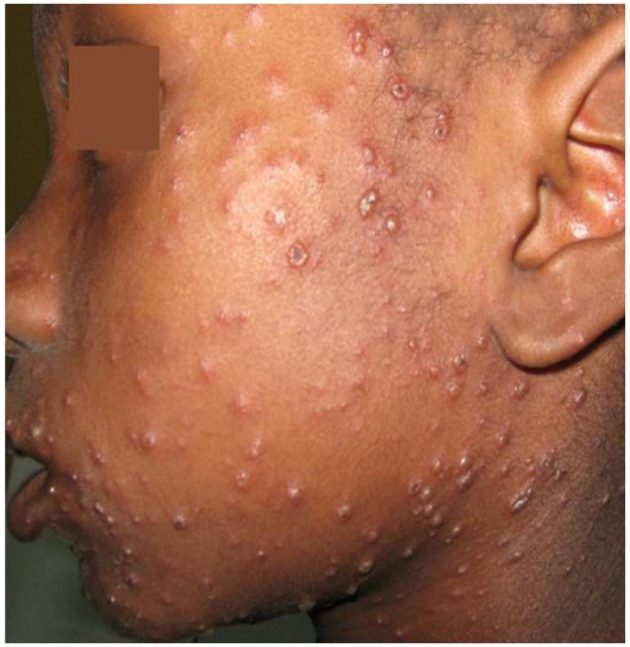


Differential Diagnosis of Mpox

- The mpox rash at different stages of evolution, may resemble other infectious diseases or other conditions, including:
- **Varicella zoster virus (VZV, chickenpox**),
- **Herpes simplex virus (HSV),**
- **Primary or secondary syphilis**,
- Disseminated gonococcal infection,
- Hand, foot and mouth disease,
- Chancroid,
- Lymphogranuloma venereum,
- Granuloma inguinale
- Molluscum contagiosum,
- **Measles,**
- Scabies,
- Rickettsiosis,
- Chikungunya, Zika virus, dengue fever or other arboviral disease,
- Vasculitis and other bacterial skin and soft tissue infections,
- Nontuberculous mycobacterial lung disease,
- **Deep fungal infections** and any other locally relevant common causes of papular or vesicular rash

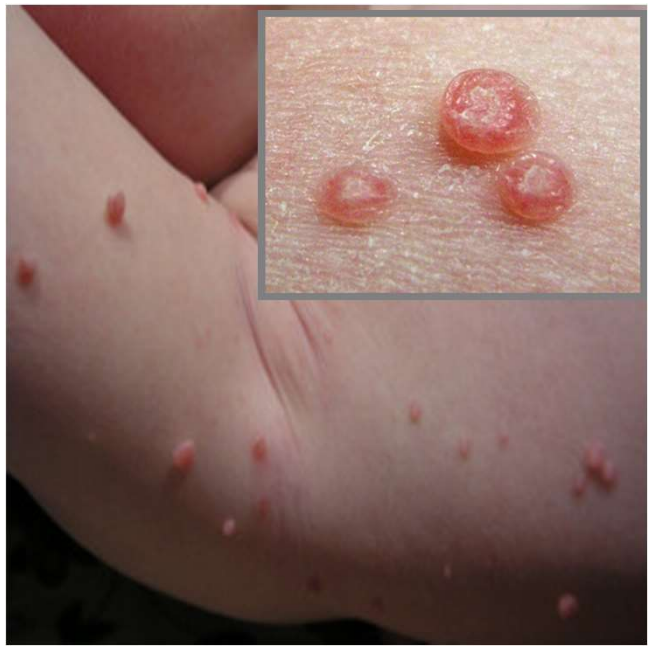
Mpox vs other common rash illness

Symptom	Mpox	Varicella	Measles	Molluscum Contagiosum
Fever	1-3 days before rash	1-2 days before rash	3-5 days before rash	2-6 weeks
Lymphadenopathy	Present	Rare	Varies widely	Varies widely
Rash appearance	Lesions often in one stage of development	Lesions in multiple stages of development	Flat raised “sandy” rash	Firm papules (not vesicles). Umbilicated, skin-coloured/pinkish. “papules with belly buttons”
Rash Distribution	More dense on face; present on palms, soles, trunk, genitalia	Concentrated on the trunk	Rash typically starts on face then spreads to neck, trunk, arms, legs and feet	Often clustered
Considerations	Painful	Itchy **Rx with acyclovir in adults – complications in immune and suppressed adults. NB pneumonia**	Child or contact with child with similar symptoms	Check for underlying immunosuppression, including HIV



Varicella (Chicken pox)

Measles



Molluscum Contagiosum

Laboratory Investigation

Specimen type	Collection materials	Comments
<u>Skin lesion material:</u> Swabs of lesion surface, lesion roof, lesion exudate Lesion roof/s Lesion crust/s	Dacron or polyester flocked swabs with VTM or dry swab	Preferred sample Required for all investigations
Throat swab	Dacron or polyester flocked swabs with VTM or dry swab	Optional, on individual case basis and in consultation with NICD ONLY
Plasma	EDTA collection tube (purple top)	Optional, on case by case basis and in consultation with NICD ONLY
Serum	Serum separator tubes or clotted blood	Optional, on case by case basis and in consultation with NICD ONLY

Management

Management of mild or uncomplicated disease

- Symptomatic treatment
  - antipyretics for fever and analgesia for pain should be considered.
  - Conservative treatment of rash lesions should be performed dependent on their stage with aims to relieve discomfort, speed healing and prevent complications, such as secondary infections or exfoliation.
  - Antibiotic therapy or prophylaxis is not warranted unless signs of secondary bacterial infection (i.e. cellulitis, abscess) are present.
- Patients with mpox should be assessed for their nutritional status and given adequate nutrition and appropriate rehydration.
- Counsel patients with mild mpox about signs and symptoms of complications that should prompt urgent care.

Severe Disease

- a large number of lesions such that they are confluent;
- necrotic lesions;
- severe lymphadenopathy that can be necrotizing or obstructing (such as in airways);
- involvement of multiple organ systems and associated comorbidities (for example, pulmonary involvement with nodular lesions; sepsis; encephalitis; myocarditis; ocular or periorbital infections); or other conditions requiring hospitalization;
- involvement of anatomic areas which might result in serious sequelae that include scarring or strictures — these include lesions directly involving the pharynx causing dysphagia, inability to control secretions, or need for parenteral feeding;
- lesions and severe oedema of the penile foreskin, vulva, vagina, urethra, or anorectum with the potential for causing strictures or requiring catheterization;
- anorectal lesions interfering with bowel movements (for example, severe pain); and severe infections (including secondary bacterial skin infections), especially those that require surgical intervention such as debridement.

Risk factors associated with severe disease

Patient groups at higher risk of severe disease or complications	• Children, pregnant women, persons who are immunosuppressed such as persons living with HIV having poorly controlled disease *(5,6,10,11,13,26)*. • Though data are lacking, patients with chronic skin conditions (e.g. atopic dermatitis), acute skin conditions (i.e. burns) may also be at higher risk for complications, such as bacterial infection *(33)*.
Clinical signs and symptoms of complications	• Nausea and vomiting *(11,16)*, painful cervical lymphadenopathy causing dysphagia, poor oral intake, eye pain, vision abnormalities, hepatomegaly, sepsis, dehydration, respiratory distress/pneumonia, and/or confusion.
Laboratory abnormalities	• Elevated hepatic transaminases (AST and/or ALT), low blood urea nitrogen (BUN), low albumin, elevated white blood count (WBC), or low platelet count *(16)*.
Skin lesion severity score	• From smallpox experience *(28,94)*: – Mild (< 25 skin lesions) – Moderate (25–99 skin lesions) – Severe (100–250 skin lesions) – Very severe (> 250 skin lesions).

Indications for Tecovirimat

- MPXV infection is confirmed by polymerase chain reaction (PCR) testing

AND

- symptomatic with a syndrome compatible with ongoing MPXV infection

AND

- meeting any one or more of the criteria for severe or complicated disease

Exclusion Criteria

- Patients are not eligible for treatment if any of the following apply:
  - Hospitalised for reasons other than monkeypox virus infection or do not meet any of the criteria for severe and complicated disease
  - Known hypersensitivity reaction to the active substances or to any of the excipients of the medications below as listed in their respective SPC

- **Relative contraindication**
  - There is lack of sufficient evidence to inform guidance on use of tecovirimat in adults and children of less than 13 kg body weight.
  - Weigh risk and severity of symptoms and consult with NICD hotline if weight less than 13kgs.
  - Breastfeeding and risk of discounting should be discussed on a patient basis

Special considerations

- Immunosuppression
- Pain management
- Management of skin lesions
- Ocular manifestations
- Mental health
- Breastfeeding

Contraindications to Tecovirimat

- Severe renal impairment
- Severe hepatic impairment
- Pregnancy

TPOXX® Proposed Weight-Based Oral Dosing and Drug Food Preparation Instructions for Patients Who Cannot Swallow Capsules

For participants who cannot swallow capsules, study drug can be prepared by carefully mixing the required contents in 30 mL of liquid (e.g., milk, chocolate milk) or soft food (e.g., apple sauce, yogurt). The entire mixture should be administered within 30 minutes of its preparation.					
Body Weight (kg)	**Dose (mg)[a]**	**Number of Capsules**	**Frequency**	**Route**	**Instructions**
120 and above	600	3 capsules	TID	Oral	Mix contents of 3 capsules with 30 mL of liquid or soft food.
40 to less than 120	600	3 capsules	BID	Oral	
25 to less than 40	400	2 capsules	BID	Oral	Mix contents of 2 capsules with 30 mL of liquid or soft food.
13 to less than 25	200	1 capsule	BID	Oral	Mix contents of 1 capsules with 30 mL of liquid or soft food.
6 to less than 13	100	½ capsule	BID	Oral / Nasogastric tube[b]	Mix contents of 1 capsule with 30 mL[c] of liquid or soft food. Administer one half of mixture (15 mL) to patient. Discard unused mixture.
Less than 6	50	¼ capsule	BID	Oral / Nasogastric tube[b]	Mix contents of 1 capsule with 30 mL[c] of liquid or soft food. Administer one quarter of mixture (7.5 mL) to patient. Discard unused mixture.

[a] Dosing should be taken with food

[b] In laboratory experiments, consistent suspension was not attained in the lowest two doses. Thus, administration of the 50 mg and 100 mg dosing is recommended via nasogastric tube.

[c] Liquid/soft food volume as noted or as per physician/pharmacy discretion

BID = twice per day every 12 hours, by mouth

TID = three times per day every 8 hours, by mouth

Section 21 Application

1. Patient suspected Mmpox: Initial suspicion based on symptoms.
2. Patient PCR confirmed Mmpox: Confirmation of Mmpox via PCR test.
3. Patient hospitalized and met case definition of severe infection: Criteria for hospitalization based on severity, and recommendation from NICD clinical team to use Tecovirimat.
4. Submit per patient Section 21 application to SAHPRA: Application submission for each patient to the South African Health Products Regulatory Authority (SAHPRA), use online application portal ensure per patient tab is used
5. Email application reference number to marione.schonfeldt@health.gov.za who will fast track application approval with SAHPRA
6. SAHPRA approval granted: Authorization received from SAHPRA email approval to marione.schonfeldt@health.gov.za
7. Tecovirimat capsules issued by bulk storage site: Medication issued in line with SAHPRA approval.
8. Public or private sector institution arrange collection of capsules in Pretoria: Coordination for collection by the treating institution, Ms Schonfeldt will provide the details of the pharmacy where the stock should be collected.
9. Tecovirimat issued to patient by treating institution: Distribution to the patient, treating institution to dispense in line with prescription.

Reporting requirements

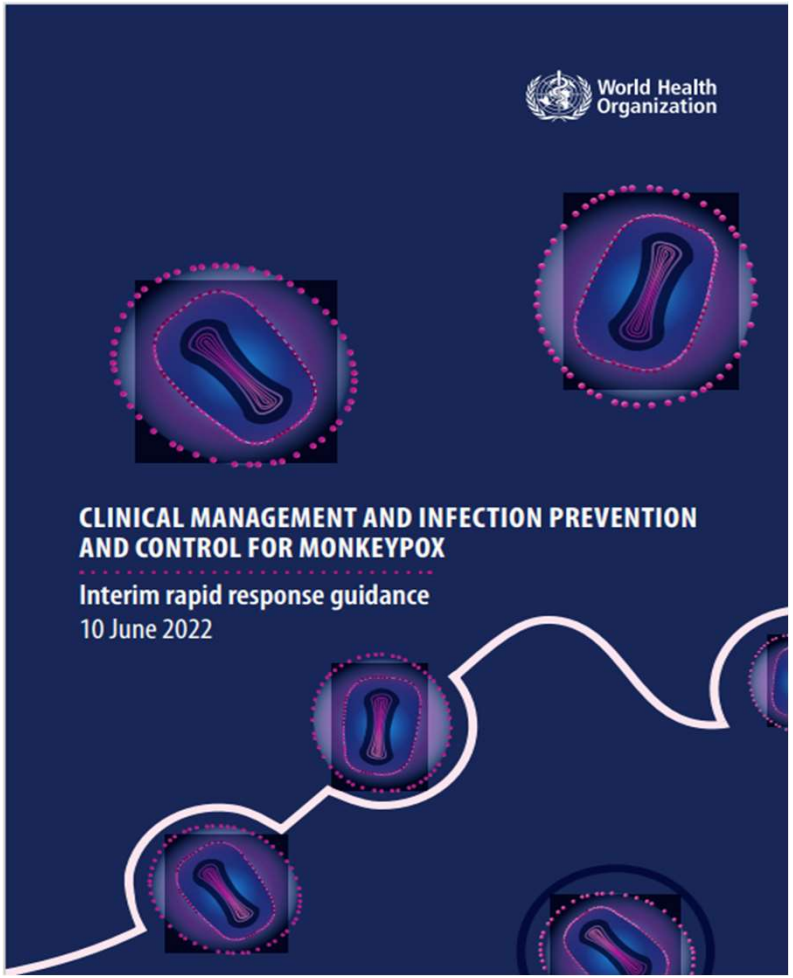
- Treating physician to report on progress and ADR to SAHPRA as per patient Sec 21 approval.
- Treating physician to complete WHO reporting tool through the WHO Global Clinical Platform https://www.who.int/tools/global-clinicalplatform/monkeypox, which shall include reporting of: (i) all anonymized patient data, including clinical information (concurrent conditions, symptoms), (ii) all clinical outcomes, and (iii) any complications experienced during the course of hospitalization or course of treatment; and
- Any suspected unexpected serious adverse reactions (SUSARs) that are lifethreatening and any other potentially treatment related serious adverse events (SAEs) are promptly reported to the national pharmacovigilance centre, WHO and SIGA as follows:
  - by mail addressed to World Health Organization, Regulation and Prequalification Department, 20 Avenue Appia, 1211 Geneva 27, Switzerland, and via email at pvsupport@who.int.

ART initiation and IRIS

- If patient not on treatment initiate ART
- Unlikely, they will get IRIS as indicated by worsening lesions

Important considerations

- Good history taking
- Screen for STIs
- Treat co-morbidities
- Consult the clinicians hotline



Additional resources

https://www.youtube.com/watch?v=SYHScnwuhJc

https://medtalkz.com/cgi-bin/medtalkz/showevents.pl?moreinfo:261

Government Gazette
Staatskoerant

REPUBLIC OF SOUTH AFRICA
REPUBLIEK VAN SUID AFRIKA

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DEPARTMENT OF HEALTH

NO. 3007 **3 February 2023**

NATIONAL HEALTH ACT, 2003 (ACT NO. 61 OF 2003)

REGULATIONS RELATING TO THE SURVEILLANCE AND THE CONTROL OF NOTIFIABLE MEDICAL CONDITIONS: AMENDMENT

The Minister of Health has, in terms of section 68(1)(b) read with section 90(4)(c) of the National Health Act, 2003 (Act 61 of 2003) made the regulations in the Schedule hereto.

DR M.J PHAAHLA, MP
MINISTER OF HEALTH
DATE 20/11/2022

NATIONAL HEALTH ACT 61 OF 2003

DECLARATION OF MONKEYPOX AS A NOTIFIABLE MEDICAL CONDITION

The Minister of Health hereby, in terms of Regulation 12 of the Regulations Relating to the Surveillance and Control of Notifiable Medical Conditions, published in Government Notice No. 1434 in Government *Gazette* No. 41330 of 15 December 2017, declare Monkey Pox to be a Notifiable Medical Condition.

DR M.J PHAAHLA, MP
MINISTER OF HEALTH
DATE: 20/11/2022

ANNEXURE A

Table 1: Category 1 Priority Notifiable Medical Conditions that need immediate verbal, sms or telephonic report on clinical suspicion within 24 hours Category 1 notifiable medical conditions that require immediate reporting by the most rapid means available upon diagnosis followed by a written or electronic notification to the Department of Health within 24 hours of diagnosis by health care providers, private health laboratories or public health laboratories

No	Notifiable Medical Conditions
1	Acute flaccid paralysis
2	Acute rheumatic fever
3	Anthrax
4	Botulism
5	Cholera
6	Congenital rubella syndrome
7	Diphtheria
8	Enteric fever (typhoid or paratyphoid fever)
9	Food-borne disease outbreak*
10	Haemolytic uraemic syndrome (HUS)
11	Listeriosis
12	Malaria
13	Measles
14	Meningococcal disease
15	Monkeypox
16	Pertussis
17	Plague
18	Poliomyelitis
19	Rabies (human)
20	Respiratory disease caused by a novel respiratory pathogen **
21	Rift valley fever (human)
22	Rubella
23	Smallpox
24	Viral haemorrhagic fever diseases * **
25	Yellow fever

*Food -borne disease outbreak is the occurrence of two or more cases of a similar foodborne disease resulting from the ingestion of a common food.

**Examples of novel respiratory pathogens include novel influenza A virus and MERS coronavirus.

*** Viral haemorrhagic fever diseases include Ebola or Marburg viruses, Lassa virus, Lujo virus, new world arena viruses, Crimean-Congo haemorrhagic fever or other newly identified viruses causing haemorrhagic fever.

Table 2: Category 2 notifiable medical conditions to be notified through a written or electronic notification to the Department of Health within seven (7) days of clinical or laboratory diagnosis by health care providers, private health laboratories or public health laboratories

No	Notifiable Medical Conditions
1	Agricultural or stock remedy poisoning
2	Bilharzia (schistosomiasis)
3	Brucellosis
4	Congenital syphilis
5	Haemophilus influenzae type B
6	Hepatitis A
7	Hepatitis B
8	Hepatitis C
9	Hepatitis E
10	Lead poisoning
11	Legionellosis
12	Leprosy
13	Maternal death (pregnancy, childbirth and puerperium)
14	Mercury poisoning
15	Soil transmitted helminths (Ascaris Lumbricoides, Trichuris trichiuria, Ancylostoma duodenale, Necator americanus)
16	Tetanus
17	Tuberculosis: pulmonary
18	Tuberculosis: extra -pulmonary
19	Tuberculosis: multidrug- resistant (MDR -TB)
20	Tuberculosis: extensively drug -resistant (XDR -TB)

Table 3: Category 3 notifiable medical conditions to be notified through a written or electronic notification to the Department of Health within 7 days of diagnosis by private and public health laboratories

Notifiable Medical Condition	Pathogen/s to notify
Gonorrhoea	Ceftriaxone- resistant Neisseria gonorrhoea
Endemic arboviral diseases	West Nile virus, Sindbis virus, Chikungunya virus
Non-endemic arboviral diseases	Dengue fever virus, other imported arboviruses of medical importance
Non-typhoidal Salmonellosis	Salmonella spp. other than S. Typhi and S. Paratyphi
Shiga toxin- producing Escherichia coli	Shiga toxin -producing Escherichia coil
Shigellosis	Shigella spp.

Table 4: Category 4 notifiable medical conditions to be notified through a written or electronic notification to the Department of Health within 1 month of diagnosis by private and public health laboratories

No	Notifiable Medical Condition	Pathogen/s to notify
1	Health care- associated infections or multi drug -resistant organisms of public health importance*	• Carbapenemase-producing Enterobacteriaceae • Vancomycin-resistant enterococci • Staphylococcus aureus: hGISA and GISA • Colistin-resistant Pseudomonas aeruginosa • Colistin- resistant Acinetobacter baumanil • Clostridium difficile

*Health care -associated infection means an infection occurring in a patient during the process of care in a health establishment which was not present or incubating at the time of admission.

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

Division of Public Health Surveillance and Response and
Centre for Emerging Zoonotic and Parasitic Diseases
(NICD) 24-hour hotline number: 0800 212 552
COMPILED: 2 SEPTEMBER 2022 UPDATED: 15 MARCH 2023

CASE INVESTIGATION FORM: MPOX

I. PATIENT DETAILS

Surname:		Name/s:				
Date of birth:	DD / MM / YYYY	Age:		Sex:	Male ☐	Female ☐
Contact Tel./Cell:	(000) 0000000	(000) 0000000		Occupation:		
Physical home address:						

II. ATTENDING HEALTHCARE WORKER AND HEALTHCARE FACILITY DETAILS

Name of clinician:		Contact Tel./Cell clinician:	(000) 0000000		
Healthcare facility name:		Location of healthcare facility:			
Hospital case nr.:		Date of admission:	DD / MM / YYYY	Ward:	

III. RISK FACTORS/ EXPOSURE HISTORY – during the 21 days prior to onset of symptoms

Close contact with suspected or confirmed case of monkeypox* Yes ☐ No ☐ Unknown ☐

History of international travel to country reporting monkeypox in 21 days prior to onset of illness Yes ☐ No ☐ Unknown ☐

None of the above Yes ☐ No ☐ Unknown ☐

IV. CLINICAL INFORMATION

A. Date of onset of illness: DD / MM / YYYY

B. Clinical features (Tick appropriate box: yes, no, unknown)

Fever	Yes ☐	No ☐	Unknown ☐
If yes, specify temperature	_____ °C		
Lymphadenopathy	Yes ☐	No ☐	Unknown ☐
Headache	Yes ☐	No ☐	Unknown ☐
Muscle pain	Yes ☐	No ☐	Unknown ☐
Fatigue	Yes ☐	No ☐	Unknown ☐
Sore throat	Yes ☐	No ☐	Unknown ☐
Nausea/vomiting	Yes ☐	No ☐	Unknown ☐
Cough	Yes ☐	No ☐	Unknown
☐ Chills/sweats	Yes ☐	No ☐	Unknown ☐
Light sensitivity	Yes ☐	No ☐	Unknown ☐

Rash Yes ☐ No ☐ Unknown ☐

Date of onset of rash DD / MM / YYYY

Distribution of rash:

Face ☐ Oral ☐ Arms☐ All over Trunk

☐ Genitals ☐ Legs ☐ body ☐Thorax

☐ Soles of hands ☐ Soles of feet ☐Type

of rash: Macular Yes ☐ No ☐

Maculopapular Yes ☐ No ☐

Vesicular Yes ☐ No ☐

Petechial Yes ☐ No ☐

Vasculitis Yes ☐ No ☐

Other, specify:

If female, pregnant: Yes ☐ No ☐ Unknown ☐ n/a (male) ☐

V. PAST MEDICAL AND TRAVEL HISTORY

Underlying illness** Yes ☐ No ☐ Unknown ☐

If yes, give details:

Country/ies visited:	Location/s visited within country:	Date of arrival:	Date departure:
		DD / MM / YYYY	DD / MM / YYYY

Activities at the location/purpose of travel:

Footnotes: * Contact tracing should be initiated according to protocol ** Any immunosuppressing condition including active HIV disease.

SUBMIT COMPLETED FORM WITH SPECIMEN TO: Special Viral Pathogens Lab, National Institute for Communicable Diseases, National Health Laboratory Service, 1 Modderfontein Road, Sandringham 2192, South Africa

EMAIL COMPLETED FORM TO: jacquelinew@nicd.ac.za / naazneenm@nicd.ac.za / outbreak@nicd.ac.za

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

MPOX CONTACTS LISTING FORM
15 March 2023

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

Case information

Name	Surname	Contact details	Address/Location	Sub-district	District	Province	Date of symptom onset (dd/mm/yyyy)

Contact information

For all information pertaining to location, please list information on where the contact will be residing for the monitoring period should need arise

No	Name	Surname	Sex (M/F)	Age (yrs)	Relation to case	Date of last contact with case (dd/mm/yyyy)	Type of contact (1, 2, 3)*	Address/Location	City/Town	Sub-district	District	Province	Contact number	Occupation

***Types of contact**

1 = Face-to-face exposure without wearing appropriate PPE
2 = Direct physical contact with skin/skin lesions (e.g. sexual)
3 = Contact with contaminated materials (e.g. clothing, bedding, utensils)

Person completing form:

Name & Surname: _____Occupation: _____Contact number: _____ Date: _____ Facility name: _____

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

MONITORING TOOL FOR MPOX CONTACTS
15 March 2023

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

Details of confirmed mpox case

Name: _____ Surname: _____ Date of birth (dd/mm/yyyy):_____Age (yrs): _____ Sex (M/F): _____

Details of contact (person under observation)

Name: _____ Surname: _____ Date of birth (dd/mm/yyyy): _____ Age (yrs): _____ Sex (M/F): _____

Address/Location: _____ Sub-district: _____ District: _____ Province: _____

Date of last contact with case: _____ Place of last contact: _____ Relation to case: _____

Type of contact (1, 2, 3): _____ Occupation: _____ Place of employment/School: _____

Details of observation officer: Name & Surname: _____ Contact number: _____ Occupation: _____

Person completing the form should initial daily in row 3 below* - (next page) - may vary depend on type of monitoring (passive, active or direct)**

** Passive monitoring: persons under observation self-monitor themselves

Active monitoring: health official checks at least once a day if a person under observation has self-reported signs/symptoms

Direct monitoring: health official conduct daily physical visit or visually examine via video for signs of illness

Instruction for completion: Mark **"Y"** if symptom present and **"N"** if not. If self-monitoring, the person under observation should notify the observation officer if symptoms develops

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

MONITORING TOOL FOR MPOX CONTACTS

15 March 2023

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Date(dd/mm)																					
Seen by*																					
Fever (if Y, indicate temperature if measured in below)																					
am temperature																					
pm temperature																					
Headache																					
Chills																					
Sore throat																					
Muscle aches																					
Fatigue																					
Rash																					
Lymphadenopathy																					
Other (specify)																					
Other (specify)																					

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

Compiled March 2022
Updated May 2024
CENTRE FOR EMERGING ZOONOTIC AND PARASITIC DISEASES
OUTBREAK RESPONSE UNIT, DIVISION OF PUBLIC HEALTH SURVEILLANCE AND RESPONSE

Mpox

Frequently Asked Questions

1. What is mpox?

Mpox (previously named monkeypox) is caused by infection with monkeypox virus, a member of the genus *Orthopoxvirus* in the family *Poxviridae*. There are currently more than 80 poxviruses known to science and these poxviruses have been isolated from different species of birds, insects, reptiles, marsupials and mammals. Poxviruses that may cause human disease include the smallpox (or variola) virus and molluscum contagiosum virus. The former was eradicated by 1980 by mass-vaccination programs. In addition, human disease can be caused by infection with other poxviruses such as orf, cowpox and Tanapox viruses. These viruses are harbored by different animal species and may spillover to the human population (i.e. they are zoonotic viruses) when there is sufficient exposure. Orf, cowpox and Tanapox viruses are not highly transmissible from person-to-person.

2. Where does mpox occur?

Mpox was first discovered in 1958 in Denmark when two outbreaks of a pox-like disease occurred in colonies of monkeys kept for research, hence the name 'monkeypox.' The World Health Organization (WHO) has renamed monkeypox to mpox in 2022, following extensive public comment and in order to reduce stigma associated with the unfortunate naming. The first human case of mpox was recorded in 1970 in the Democratic Republic of Congo. Mpox has been historically reported from several countries from West and Central Africa (WCA). This distribution of mpox virus is attributed to the fact that it is naturally harboured by animals that are found in this part of Africa. It is believed that rodents, most likely certain species of squirrels found in the deep forested areas of this region of Africa, may be the natural host of the virus. Mpox infections in humans have historically been noted in these countries albeit at a relatively low level. Prior to the 1970s, it is suspected that infections were masked by smallpox (it appears clinically similar and may be misdiagnosed) and/or cases were low due to smallpox vaccine induced cross- immunity. An increase of human mpox cases have been noted in recent years from Nigeria but also other locations in WCA. In the DRC, there has been an increase in human mpox cases from the 1990s (nd=511) through 2000-2019 (>28,000), with nearly 20 000 cases reported during 2023 to May 2024. Human cases of mpox have been reported outside of countries where the virus has historically been reported including in the USA in 2003 in an outbreak related to the exotic pet trade (with exportation of animals from Ghana). Prior to 2022, the former outbreak was the only major mpox

outbreak in a Western country that did not feature community transmission. Countries such as the USA, Israel, Singapore and the United Kingdom reported travel-associated cases ex Nigeria and nosocomial transmission in health care workers during 2018-2021. An outbreak have been reported since May 2022 with more than 90 000 confirmed from 117 countries. Since the peak of this epidemic in August 2022, the number of mpox cases have declined although low level of transmission continues.

Between June 2022 and May 2024, a total of seven cases of mpox have been reported in South Africa. These cases were unlinked and reported in males between the ages of 28 and 42.

3. How is the virus transmitted?

In countries where the natural animal host of the virus are found, the monkeypox virus may be spread from handling infected bush meat, an animal bite or scratch, body fluids and contaminated objects. The monkeypox virus has been found in many animal species: rope squirrels, tree squirrels, Gambian rats, striped mice, dormice and primates. Certain species of rodents are suspected of being the main disease carrier or host (reservoir host) of mpox, although this has not been proven yet. In countries where zoonotic transmission is not reported, persons are most likely to be exposed to mpox through contact with an individual that is already sick with mpox. Cases of mpox spreading through animals, outside of the endemic areas, are very rare, but may involve the exotic pet trade or potentially through contact with infected animal-derived materials such as skins and leather. Person-to-person transmission involves close contact with an infected person or materials that have been contaminated by an infected person.

In the context of the multi-country outbreak a notable mode of transmission has been through sexual contact in the community of men having sex with men (MSM). A risk factor identified from early epidemiological investigations is having

multiple sexual partners. It is also believed that several large social gatherings may have served as super spreading events aiding in the international spread of the virus.

4. What are the signs and symptoms of mpox?

The incubation period (time from infection to symptoms) for mpox is on average 7−14 days but can range from 5−21 days. Initial symptoms include fever, headache, muscle aches, backache, chills and exhaustion. Within 1-3 days of onset of disease, blister-like lesions will develop on the face, the extremities including soles of the feet and palms of the hands. The lesions may however occur on other parts of the body. The number of lesions will vary and lesions tend to appear similar in appearance and size (i.e. will be at the same stage of development). The lesions progresses through several stages before scabbing over and resolving. Most human cases resolve within 2-4 weeks of onset without side-effects. The case fatality rate in more recent outbreaks have been on average 1%. There are many other causes of rash illness, many of which are fairly common, that may be managed or treated in different ways. It is important to diagnose these diseases accurately in order for appropriate management to ensue.

5. When is a mpox infected person no longer contagious?

An infected person is contagious from the onset of the rash/lesions through the scab stage. Once all scabs have fallen off, a person is no longer contagious. It is currently not known how long viable virus may persist for example in semen.

6. How is mpox diagnosed?

Mpox is diagnosed by a healthcare worker in consideration of the clinical presentation of the patient. The nature of the rash would be the most telling sign. However, the healthcare worker will consider possible exposures for the case with the consideration that the likelihood of contracting mpox is very low. Many other diseases, such as chickenpox, may cause similar rashes and are more common. Samples can be tested at the National Institute for Communicable Diseases or private pathology services (contact your preferred service for more information) to confirm a diagnosis of mpox. For more information on laboratory testing of mpox, refer to the NICD website.

7. How is mpox treated?

Treatment is supportive, as with most viral infections. Most human cases of mpox virus infection do not require any specific treatment and the disease resolves on its own. There are anti-viral drugs that a clinician may consider using for treatment of more severe cases of mpox on a case-by-case basis. One such anti-viral includes tecovirimat that is used for people with severe mpox disease or those with weakened immune systems. Tecovirimat can reduce the amount of virus in the body and may help to treat severe mpox disease involving the eyes, mouth, throat, genitals and anus. It is currently unknown whether tecovirimat works or how well it works to treat mpox.

Researchers are now testing the safety and effectiveness of tecovirimat for all people with mpox.

8. How can mpox be prevented?

Mpox outbreaks can be controlled by diagnosis and laboratory confirmation of cases. This allows for contact tracing and monitoring to enable the pro-active recognition of any other linked cases of mpox. It is recommended that confirmed cases of mpox isolate to ensure that risk of transmission is minimized. Isolation may be through self-isolation at home if circumstances allow, but cases may be isolated in hospital if so required. The World Health Organization did not recommend mass-vaccination as a measure to contain the outbreak. Nonetheless, the United States and certain European nations are providing smallpox vaccination to high-risk households and identified close contacts up to 14 days after exposure and gay and bisexual men with multiple sex partners (Imvanex, Bavarian Nordic, Kvistgrd, Denmark). Although endemic in West and Central Africa, Africa has only recently been donated mpox vaccine doses which will be for health care workers and higly affected areas. Although being endemic in West and Central Africa, Africa has just lately received donations of mpox vaccine doses to be administered to medical personnel and severely impacted regions.

9. Vaccines for mpox

The smallpox virus (virus that caused the now eradicated smallpox disease in humans) and mpox virus is closely related. Smallpox vaccination which was provided through mass-vaccination programs during the smallpox eradication program provides some level of cross-immunity to mpox. Residual immunity from smallpox vaccination in the population aged 40 (in South Africa smallpox vaccination was abandoned during 1980) and above may also contribute to preventing cases or lead to more mild infections. There is about 85 % protection offered by the smallpox vaccine (which was used to eradicate the human pox virus disease known as smallpox) and mpox. Currently the WHO did not recommend mass-vaccination as a measure to contain the 2022 outbreak. There are currently two mpox vaccines on the market: the ACAM2000 vaccine and the Jynneos vaccine. Vaccines can be administered either before or after a person is exposed to the virus, but for the maximum protection, vaccination prior to exposure is advised. A virus that has been altered in YNNEOS®, a modified vaccinia Ankara strain vaccination (MVA-BN), cannot replicate in the human body. Bavarian Nordic is the manufacturer of JYNNEOS®. For those 18 years of age and older, it is administered as 2 doses, at least 28 days apart. The live-attenuated smallpox vaccination ACAM2000TM also protects against mpox. Emergent BioSolutions produces ACAM2000TM. ACAM2000TM administration demands specialized training and resources. ACAM2000TM is not recommended for those who have a severe immunodeficiency, are pregnant or nursing, have a heart condition or have risk factors for a heart

condition, have active eczema, or are younger than 12 months old. Based on its safety profile and ease of administration, JYNNEOS® is the chosen vaccine for usage.

10. What is the risk of contracting mpox in South Africa?

The implications for South Africa are that the risk of importation of mpox is a reality as lessons learnt from COVID-19 have illustrated that outbreaks in another part of the world can fast become a global concern. The WHO has not recommended any travel restrictions and are working with the affected countries to limit transmission and determine sources of exposure.

The risk of mpox to the South African population remains low, given the low transmissibility of the virus. Nevertheless, South Africa has diagnosed five cases from the multi-country outbreak as of 14 March 2023, all men between 28 and 41 years of age, three of which with recent travel from Switserland, Spain and Netherlands.

11. Where can I find more information?

Laboratory results and queries:

Dr Jacqueline Weyer 011 386 6376 jacquelinew@nicd.ac.za

Dr Naazneen Moolla 011 386 6338 naazneenm@nicd.ac.za

Clinical queries (Healthcare workers only):

NICD Doctor on Call 0800 212 552

Outbreak related queries:

NICD Outbreak Team outbreak@nicd.ac.za

Media/Press queries:

Mr Vuyo Sabani VuyoS@nioh.ac.za

Other:

Guidelines and other useful resources are available on the NICD website: www.nicd.ac.za/mpox

Centers for Disease Control and Prevention, Atlanta, United States of America. https://www.cdc.gov/poxvirus/mpox/index.html

World Health Organization. http://www.who.int/mediacentre/factsheets/fs161/en/

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Division of the National Health Laboratory Service

HELP STOP THE SPREAD OF MPOX

To help stop the spread of mpox, report any symptoms immediately to your healthcare provider. Follow these **guidelines for 21 days to keep yourself, your family, and others safe.**

What to do if you have been in contact with a person who has mpox?

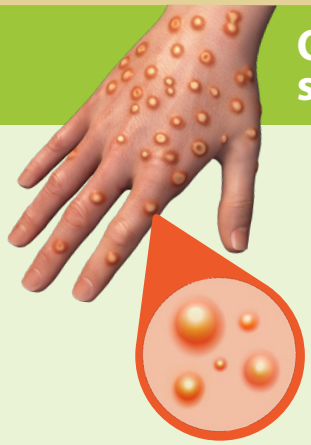
- Inform your doctor or local clinic.
- Avoid sex or any close contact that involves skin-to-skin contact with another person.
- Do not travel outside of your home, town, or country during this time.
- Self-isolate at home and avoid contact with other people.
- Do not share cutlery, glasses, or dishes.
- Wash your clothes regularly.

What to do if you have mpox?

- Report any symptoms immediately to your healthcare provider.
- If you test positive and present with mild mpox self-isolate at home.
- Do not share bedding, towels, washcloths, toothbrushes, or razors.
- Do not share food, drinks, cups, cutlery, or dishes.
- Avoid contact with other people – this includes friends and family.
- You should only go out of your home for urgent medical or health appointments.

Mpox symptoms

The most common symptom of mpox is the rash. The rash consists of lesions, which develop and resolve over the course of 2-4 weeks. There may be few or many lesions present. These lesions are blister-like and may feel firm or even rubbery.



Other mpox symptoms

Other symptoms include fever, headache, muscle aches, back pain, low energy, and swollen lymph nodes.

If you develop a rash or other signs or symptoms of mpox, see a doctor or visit your nearest healthcare centre.

https://www.nicd.ac.za/mpox-updates

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30 YEARS OF FREEDOM
South Africa 1994 - 2024

JULY 2024

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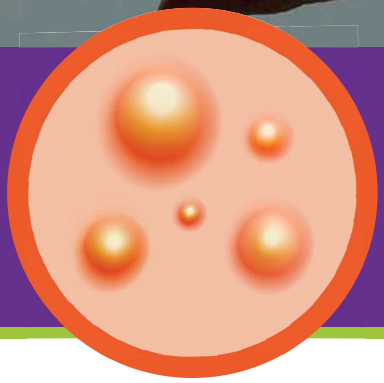
WHAT IS MPOX?



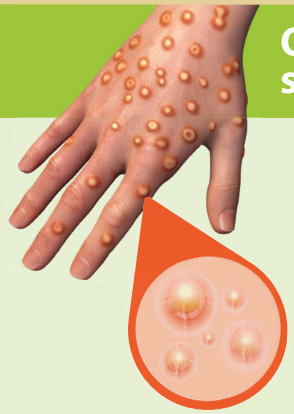
Mpox is caused by the monkeypox virus. Not many people get mpox, but certain high-risk groups, such as men who have sex with men and sex workers, are more likely to get it. In 2024, South Africa reported mpox cases, along with several other countries around the world.

The main ways to catch mpox are:

- Touching someone's blisters or scabs, including during sex, kissing, cuddling, or holding hands.
- Being close to someone with mpox when they are coughing or sneezing.
- Sharing items like bed sheets and towels.

Most people who have mpox do not get very sick and usually recover without treatment. But some people who have a weak immune system can become seriously ill from mpox. These people include young children, pregnant women, people who have certain illnesses, or people who take certain medications.

Mpox symptoms



The most common symptom of mpox is the rash. The rash consists of lesions, which develop and resolve over the course of 2-4 weeks. There may be few or many lesions present. These lesions are blister-like and may feel firm or even rubbery.

Other mpox symptoms

Other symptoms include fever, headache, muscle aches, back pain, low energy, and swollen lymph nodes.

If you develop a rash or other signs or symptoms of mpox, see a doctor or visit your nearest healthcare centre.

https://www.nicd.ac.za/mpox-updates

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MPOX KEY FACTS

- Mpox is a viral illness causing a characteristic rash.
- The most common symptom of mpox is the rash. The rash consists of lesions which develop and resolve over the course of 2-4 weeks. There may be few or many lesions present. These lesions are blister-like and may feel firm or even rubbery. When more than one lesion is present, the lesions may appear to be the same size and shape.
- Other symptoms also include fever, headache, muscle aches, back pain, low energy, and swollen lymph nodes.
- Most people with mpox will recover within 2–4 weeks.
- In South Africa, mpox is mostly transmitted through close skin-to-skin contact. During the multi-country outbreak of mpox, sexual encounters are often associated with transmission.
- Laboratory confirmation of mpox is done by testing skin lesion material by PCR.
- Mpox can be prevented by avoiding physical contact with someone who has it.

If you develop a rash or other signs or symptoms of mpox, see a doctor or visit your nearest healthcare centre.

https://www.nicd.ac.za/mpox-updates

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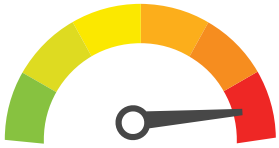
PREVENT MPOX BY AVOIDING RISKY ACTIVITIES

Mpox is spread from person-to-person through direct contact. While the risk of contracting mpox is very low, you could still get infected if you have been in contact with someone who has the virus.

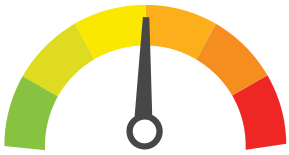
MPOX RISK EXPOSURES

High-risk exposure



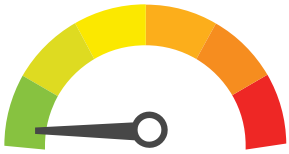
- **Intimate or close contact, including direct skin-to-skin contact with mpox** rash, scabs, or body fluids (such as saliva, snot, or mucus).
- **Wearing a condom may not protect you against mpox** because direct contact can still occur during oral, anal, or vaginal sex or through the touching of the genitals (penis, testicles, labia, vagina, or anus) of a person with mpox.

Mild-risk exposure



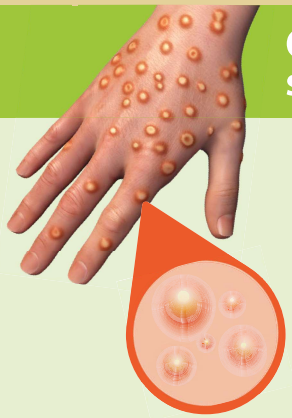
- Sharing a bed, towels, washcloths, utensils, cups, food, and drinks.
- Face-to-face kissing.
- Talking, breathing, and singing.
- Sharing a space with a non-fully clothed person.

Unlikely-risk exposure



- Sharing public transport (such as taxi ranks, airports, e-hailing services, bus terminals, or train stations)
- Being in public spaces (such as malls, grocery stores, gyms, or restaurants).
- Using public restrooms and touching commonly used surfaces (such as doorknobs and elevator buttons).

Mpox symptoms



The most common symptom of mpox is the rash. The rash consists of lesions, which develop and resolve over the course of 2-4 weeks. There may be few or many lesions present. These lesions are blister-like and may feel firm or even rubbery.

Other mpox symptoms

Other symptoms include fever, headache, muscle aches, back pain, low energy, and swollen lymph nodes.

If you develop a rash or other signs or symptoms of mpox, see a doctor or visit your nearest healthcare centre.

https://www.nicd.ac.za/mpox-updates

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Getting tested for mpox: What you need to know

Why is testing for mpox important?

Testing is important in the fight to stop the spread of the virus. Knowing you have the virus, you can help protect others in your community. You can get suitable medical care for pain and infection management and can get access to social support and counselling if you need it.

When to get tested for mpox?

You should get tested if your healthcare provider decides that mpox may explain signs and symptoms you may be experiencing. You should get tested if you experience mpox symptoms such as an unexplained skin rash, rash inside your mouth or genital area, lesions and swollen lymph nodes.

If you do not have symptoms but think you have been exposed, talk to your healthcare provider for more information.

What happens when you test?

1. You will be placed in a private room in your healthcare facility, and your healthcare provider will be wearing appropriate personal protective equipment for sample collection.

2. A sample will be collected by swabbing your lesions and surrounding skin lesions. Material is the best sample type and most likely to give an accurate test result.

3. Your healthcare provider will then send your sample to a laboratory where it will be tested for the monkeypox virus; other possible causes of lesions may be tested for. Currently, the only reliable test is lab-based.

4. The lab wil contact your healthcare provider who will share and explain the result to you.

5. If you receive a positive result, your healthcare provider can advise you on your recovering in a facility or at home and help refer you to the relevant services, including medical, social support and counselling.

6. If you receive a negative results, your healthcare provider will provide advise considering other test results (if performed). If mpox is still suspected a retest should be performed.

What to do while you wait for the test results?

You must self-isolate if you can, avoid close contact with other people, cover your lesions with fabric clothing and wear a well-fitted mask.

Click here for mpox guildelines
https://www.nicd.ac.za/mpox-updates/

What happens with my results?

Results should be communicated and explained to you by your healthcare provider. You will receive advise on your care and how to limit spread to those close to you. In South Africa, mpox is a Category I notifiable medical condition and people that you may have had close contact for a certain period of time will be monitored for development of mpox.

HOTLINE FOR GENERAL ENQUIRIES
0800 012 322

NICD HOTLINE FOR HEALTHCARE WORKERS
0800 212 552

NICD LABORATORIES ENQUIRIES:
CEZD@NICD.AC.ZA

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Mpox

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Presentation outline

This presentation contains information on the following aspects of mpox:

- Global and local epidemiological situation (as of 27 June 2024)
- General features of mpox
- Clinical presentation of mpox
- Laboratory investigation of mpox
- Clinical management of mpox
- Infection prevention and control

2

2

1. Global situation
The multi-country mpox outbreak

- From 1 January 2022 – 26 June 2024:

- Since 13 May 2022, nearly all of these cases have been reported from countries without previously documented mpox transmission.

From: World Health Organization, https://worldhealthorg.shinyapps.io/mpx_global/

3

3

1. Global situation
The multi-country mpox outbreak

- Cases during May 2024 (i.e. outbreak is ongoing):

- In the past six months, the number of cases reported monthly has declined substantially from the global peak of 30,721 cases observed in August 2022.
- In the past six months (01 Dec 2023 - 31 May 2024): on average, at the global level, 758 cases have been observed monthly
- The most affected region was the Region of the Americas, where 1 816 cases and 4 deaths have been reported. This is followed by the African Region (1 102 cases, 8 deaths), and the European Region (875 cases, 3 deaths)

From: World Health Organization, https://worldhealthorg.shinyapps.io/mpx_global/

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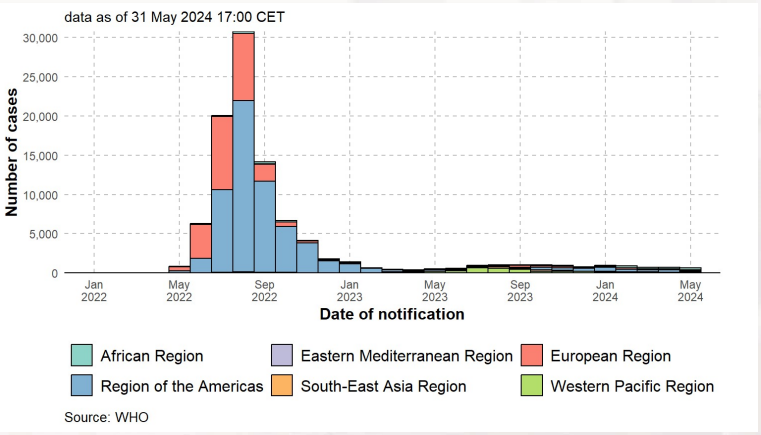
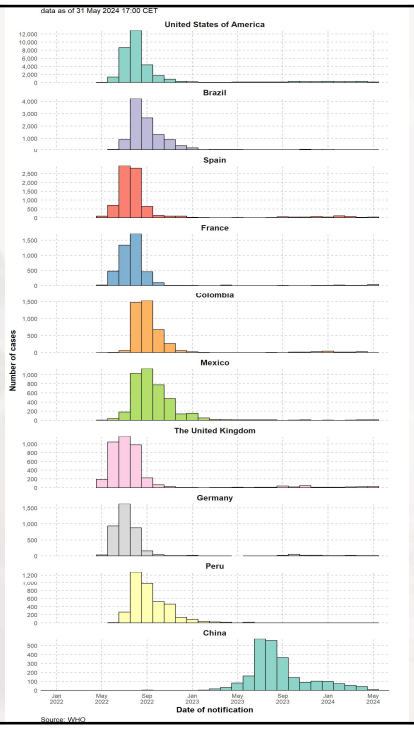
1. Global situation

The multi-country mpox outbreak



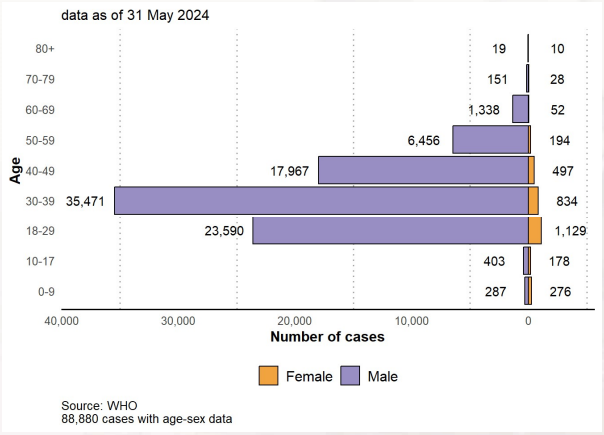


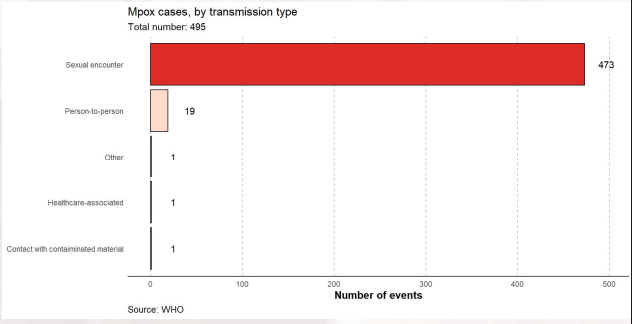
Source:
https://worldhealthorg.shinyapps.io/mpx_global/#2_Global_situation_update

5

1. Global situation

The multi-country mpox outbreak





Source:
https://worldhealthorg.shinyapps.io/mpx_global/#2_Global_situation_update

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6

Mpox in South Africa

- In 2022, 5 unlinked cases in males ages 28-42, MSM, all recovered
- In 2023, no cases reported
- In 2024, since May 2024 to 27 June 2024: 16 cases, some linked cases but also unlinked cases, males ages 23 – 39, 8 cases self-report MSM, 2 recovered, 3 deaths
- 2022 and 2024: cases associated with Clade IIb, in keeping with the multi-country mpox outbreak epidemiology

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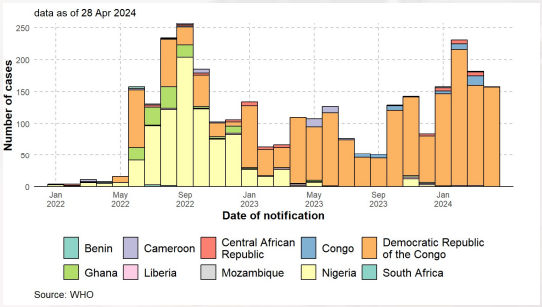
Mpox in west and central Africa

- Reported from **DRC**, Liberia, Sierra Leone, **Nigeria**, Cameroon, CAR, Congo, **Ghana** but also South Sudan, South Africa and Mozambique



Democratic Republic of Congo, Nigeria and Ghana reports 93.9% of all the cases reported from Africa.

For 2024 to date for African region:

- 3,094 confirmed cases, 24 deaths. These represent 3% of global cases and 13% of global deaths.
- In addition, 672 (22% of all cases) detailed cases have been reported to WHO:

359 male cases (53.4%); 313 female cases (46.6%)

Median age is 17 (IQR: 7 - 32), with 339 (50.4% of total) cases aged 0-17, 119 (17.7% of total) aged 0-4.

8

8

Democratic Republic of Congo:

- Steady increase in cases since 2000
- 1 January 2022 to April 2024:
26 296 suspected cases and 1230 suspected deaths (only 2024: 5922 suspected cases and 337 suspected deaths, only 675 laboratory-confirmed).
- Reported in 23 of 26 provinces of the DRC
- Historically, the country has only reported MPXV clade I (+variant?); no confirmed cases of MPXV clade IIb
- Children younger than 15 years old account for 70% of the total cases
- Zoonotic, human-to-human close contact, and human-to-human sexual transmission (since April 2023)
- Cases among sex workers in the mining area of Bukavu (Kamituga) in South Kivu:
Of 51 mpox cases hospitalised between September 2023 and January 2024, 24 were sex workers, five of whom were male.
(unique variant? deletion of the D14L (OPG032) gene)

RESEARCH ARTICLE | BIOLOGICAL SCIENCES

Major increase in human monkeypox incidence 30 years after smallpox vaccination campaigns cease in the Democratic Republic of Congo

Anne W. Rimoin, Prime M. Mulembakani, Sara C. Johnston, +15, and Jean-Jacques Muyembe Authors Info & Affiliations

Edited* by Bernard Moss, National Institutes of Health, Bethesda, MD, and approved July 26, 2010 (received for review April 28, 2010)

ASTMH THE AMERICAN JOURNAL OF TROPICAL MEDICINE AND HYGIENE
official Journal of the American Society of Tropical Medicine and Hygiene

Am J Trop Med Hyg. 2013 May 1; 88(5): 982–985. PMCID: PMC3752768
doi: 10.4269/ajtmh.12-0758 PMID: 23400570

Detection of Human Monkeypox in the Republic of the Congo Following Intensive Community Education

Mary G. Reynolds,* Ginny L. Emerson, Elisabeth Pukuta, Stomy Karhemere, Jean J. Muyembe, Alain Bikindou, Andrea M. McCollum, Cynthia Moses, Kimberly Wilkins, Hui Zhao, Inger K. Damon, Kevin L. Karem, Yu Li, Darin S. Carroll, and Jean V. Mombouli

HOT TOPIC | VOLUME 22, ISSUE 8, P658-659, AUGUST 01, 2016

Emerging diseases—the monkeypox epidemic in the Democratic Republic of the Congo

A. Kantele • K. Chickering • O. Vapalahti • A.W. Rimoin

Open Archive • Published: July 09, 2016 • DOI: https://doi.org/10.1016/j.cmi.2016.07.004

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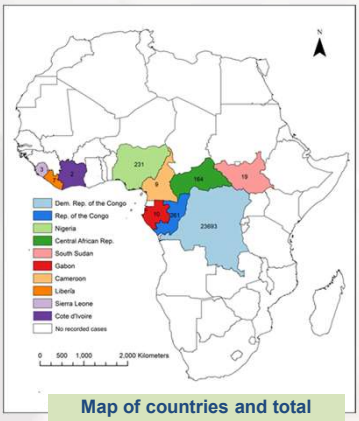
2. General features of mpox

- **Monkeypox is caused by monkeypox virus, a member of the *Orthopoxvirus* genus in the family *Poxviridae***

- Monkeypox is a thought to originate from some **tropical rainforest areas of Central and West Africa** and is occasionally exported to other regions
- There are **two distinct genetic clades** of the virus – the CLADE I (Central African OR Congo Basin) (more severe, more transmissible?) clade and CLADE II (West African) clade
- **Denmark, 1958:**
  Monkeypox discovered for the first time in monkeys exported from Africa and used for research.
- **Democratic Republic of Congo (then Zaire), 1970**:
  First human case identified.
- **Western/Central Africa**:
  1970-1980
  59 human cases reported, all cases occurred in rain forests of Western/Central Africa (DRC, Cameroon, Liberia, Sierra Leone, Ivory Coast) in individuals exposed to forest wildlife.
  1980-2000
  Number of cases in DRC steadily increasing
  (about 800 cases in this period)
  Sporadic cases: Gabon, Cameroon, Ivory Coast, CAR
- Ad hoc cases in animals in zoos/animal sanctuaries in different places across the globe
- **First export from Africa**: 2003, outbreak in USA related to exotic pet trade and animals exported from West Africa
- **Increase in reports involving returning travellers** from Nigeria since 2017

NOTE:
The disease = mpox

The virus = monkeypox virus



Map of countries and total number of suspected cases identified by this review, 1970-2018*.

From: Beer EM, Rao VB (2019) A systematic review of the epidemiology of human monkeypox outbreaks and implications for outbreak strategy. PLOS Neglected Tropical Diseases 13(10): e0007791. https://doi.org/10.1371/journal.pntd.0007791

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2. General features of mpox

How is monkeypox virus transmitted?

- **Zoonotic transmission**:
  1970-1986: 245 of 338 cases with zoonotic link, 93 possible human-to-human transmission.

  Close contact with infected animals / Bites, scratches, bush meat preparation (in adequately cooked meat; slaughtering; animal derived products), contact with contaminated materials.

  True host/reservoir still unknown.

  Have been isolated from rope squirrel, mangabey. Also other mammals including tree squirrels, Gambian pouched rats, dormice, other non-human primates.

- **Person-to-person transmission**:
  Close contact (prolonged face-to-face contact, kissing, sexual contact).

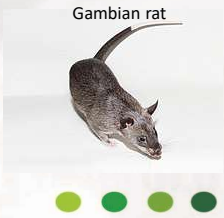
  Contact with materials contaminated with virus (via scabs, lesion fluid, for example contaminated linen/clothes).

  Large droplet transmission is possible. Virus enters the body through broken skin, respiratory tract, or the mucous membranes (eyes, nose, or mouth).

  Household bound outbreaks, up to 7 transmissions in chain[1]

  Secondary attack rate, approx. 10% in smallpox unvaccinated individuals.

[1] **Nolen et al.** Extended human-to-human transmission during a monkeypox outbreak in the Democratic Republic of the Congo. *Emerg Infect Dis.* 2016; **22**: 1014-1021



Source of images: Wikipedia

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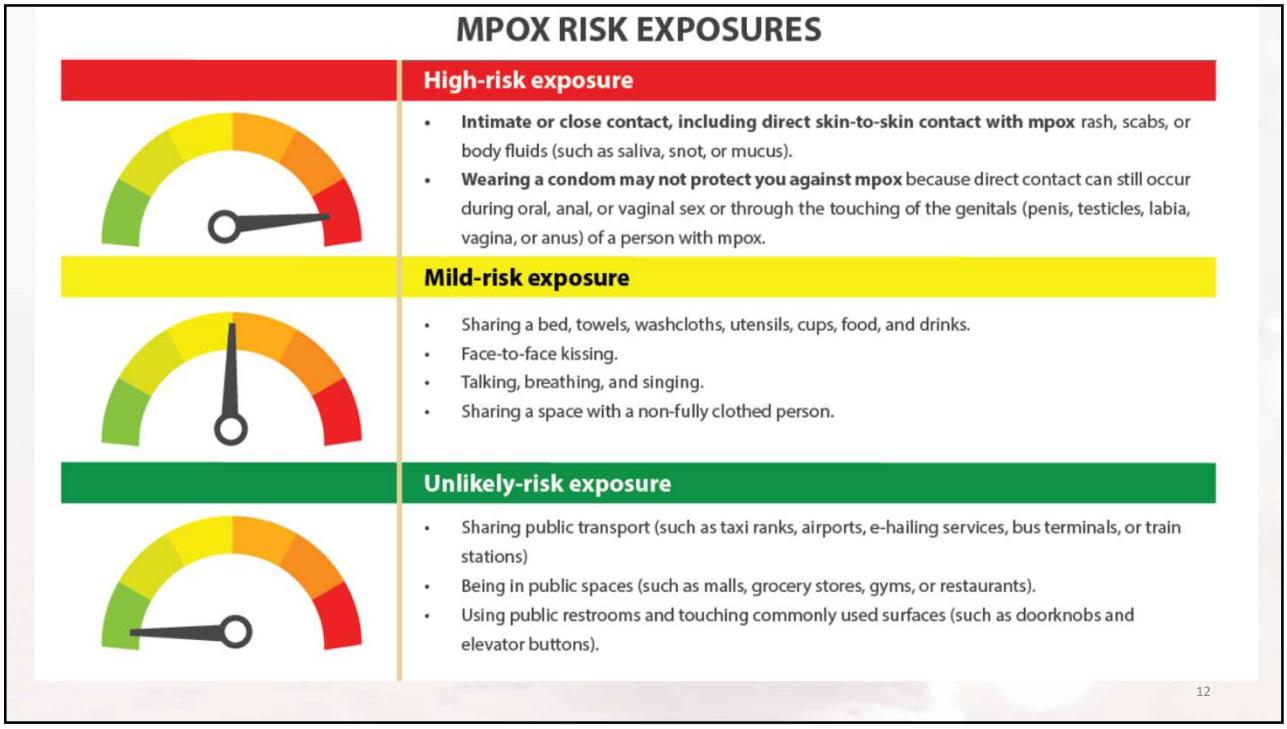

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3. Clinical presentation of mpox

RECOMMENDED:
Links to webinars on clinical presentation and management:
https://medtalkz.com/cgi-bin/medtalkz/showevents.pl?moreinfo:261

https://www.youtube.com/watch?v=SYHScnwuhJc

- Incubation period: 6 to 13 days (range: 5 to 21 days)
- The infection can be divided into two periods:

Invasion period (lasts between 0-5 days)
Fever, intense headache, lymphadenopathy (swollen lymph glands), maxillary/cervical/inguinal*, back pain, body aches, intense weakness, chills
*distinctive feature of monkeypox compared to chickenpox, measles/ reported in up to 90 % of patients

Skin eruption (begins within 1-3 days of appearance of fever).
Maculopapular rash
Concentrated on the face and extremities rather than on the trunk.
It affects the face (in 95%), and palms of the hands and soles of the feet (75%).
Also mouth (70%), genitalia and anogenital (30%), eyes (20%), cornea (rarely).
Localization of lesions are sometimes reported – for example only on hands or only on genitals. May be indicated of site of exposure and limited spread of the virus systemically .

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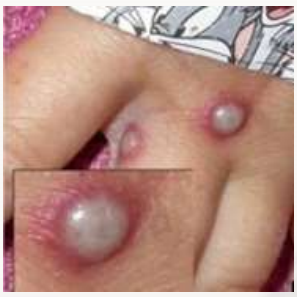
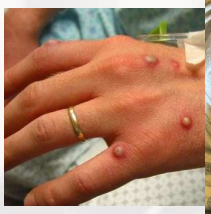
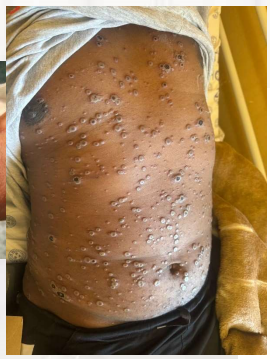
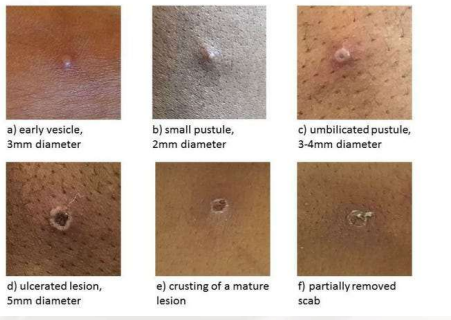


Source: CDC, USA

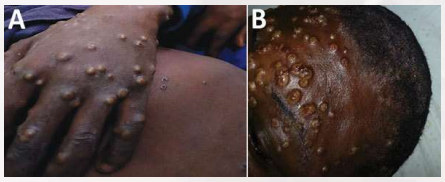


Source: Medscape





Source: UK Health Security Agency



Source: Yinka-Ogunleye, A., Aruna, O., Ogoina, D., Aworabhi, N., Eteng, W., Badaru, S., ... & Ihekweazu, C. (2018). Reemergence of human monkeypox in Nigeria, 2017. *Emerging infectious diseases*, *24*(6), 1149.

Mpox lesions

***Rash evolution*:**
macules (lesions with a flat base) ⇨ papules (slightly raised firm lesions) ⇨ vesicles (lesions filled with clear fluid) ⇨
pustules (lesions filled with yellowish fluid) ⇨ crusts (dry up and fall off)

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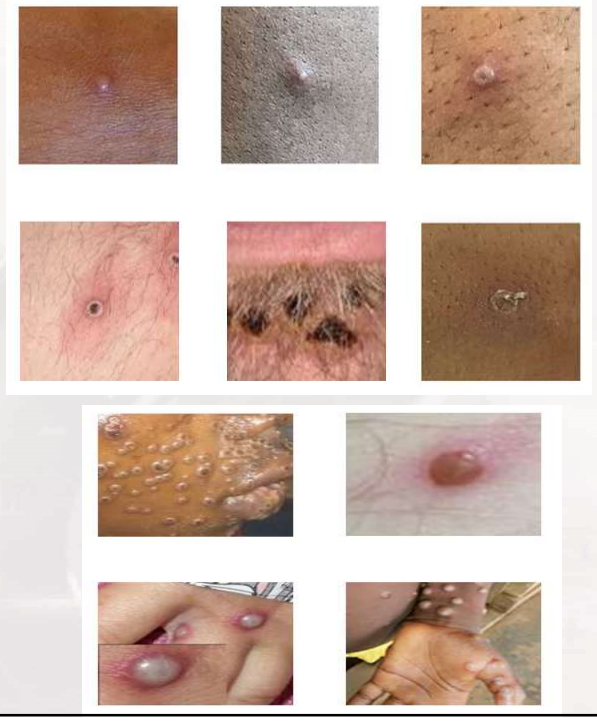
Clinical recognition

Key features:

- Lesions are firm or rubbery, well-circumscribed, deep-seated, and often develop umbilication (resembles a dot on the top of the lesion).
- During the multi-country global outbreak:
  - Lesions often occur in the genital and anorectal areas or in the mouth.
  - Rash is not always disseminated across many sites on the body.
  - Rash may be confined to only a few lesions or only a single lesion.
  - Rash does not always appear on palms and soles.
- Rectal symptoms (e.g., purulent or bloody stools, rectal pain, or rectal bleeding) have been frequently reported in the current outbreak.
- Lesions are often described as painful until the healing phase when they become itchy (crusts).



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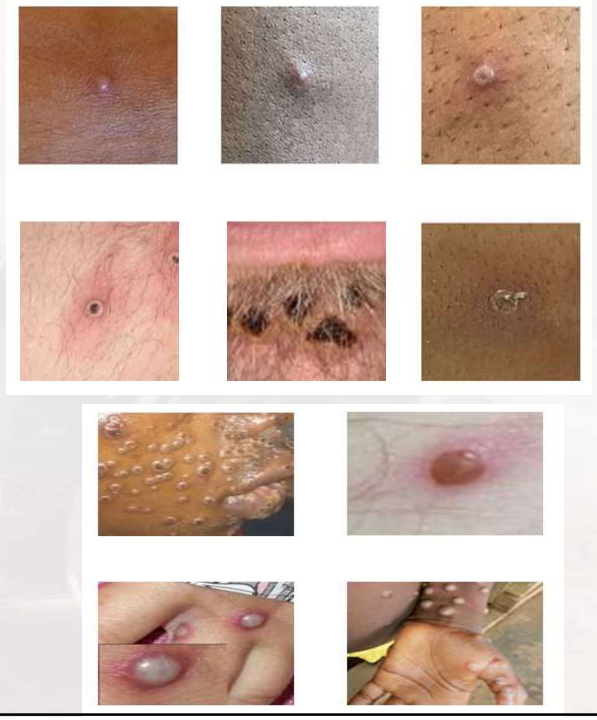
Clinical recognition

Key features:

- Fever and other prodromal symptoms (e.g., chills, lymphadenopathy, malaise, myalgias, or headache) can occur before rash but may occur after rash or not be present at all. Respiratory symptoms (e.g. sore throat, nasal congestion, or cough) can occur.
- Lesions typically develop simultaneously and evolve together on any given part of the body. The evolution of lesions progresses through four stages—macular, papular, vesicular, to pustular—before **scabbing over and desquamation.**
- The incubation period is 3-17 days. During this time, a person does not have symptoms and may feel fine. The illness typically lasts 2-4 weeks.



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3. Clinical presentation of mpox

- Self-limited disease, lasting 2 to 4 weeks
- About 13% of confirmed cases hospitalized, but include patients hospitalized for isolation, 30 % of cases for pain management
- **Severe cases:**
  - Children (high case fatality rate up to 15 %[1])
  - Pregnant women (vertical transmission to fetus, miscarriage in 1st Trimester/stillbirth (covered with skin lesions)
  - Underlying immune deficiencies (CD4+ count <350)
- Case fatality ratio varies, during multi-country outbreak <1%

[1]Jezek et al. J Infect Dis 1987; 156: 293-298

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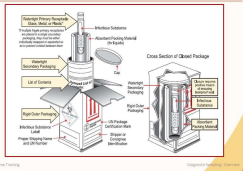
4. Laboratory investigation for mpox

- First line test: Mpox or orthopoxvirus PCR
- Electron microscopy can be useful
- WHO is not recommending use of rapid tests (yet)
- Sequencing of positive cases is important
- In RSA, several laboratories including NICD and several private laboratories
- Samples:

All info available from: www.nicd.ac.za

Specimen type	Collection materials	Comments
Skin lesion material: Swabs of lesion exudate Roofs Lesion crust	Dacron or polyester flocked swabs with VTM or dry swab	Required for all investigations
Throat swab	Dacron or polyester flocked swabs with VTM or dry swab	Optional
Rectal and or genital swabs (if lesions present)	Dacron or polyester flocked swabs with VTM or dry swab	Optional
Semen	Urine specimen jar	Optional
Plasma	EDTA collection tube (purple top)	Optional
Serum	Serum separator tubes or clotted blood	Optional

Packaging:
Category A Infectious Substances



Ship as cat A (UN2814) (in accordance with IATA regs), preferably on ice (cold chain)

Dry swabs or swabs in VTM

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5. Clinical management of mpox

- For patients with mild mpox, no medical treatment may be required. Patients may benefit from:
  Pain management
  Supportive care

- For severe cases add specific treatment:

Tecovirimat (also known as TPOXX or ST-246)
Treatment of other orthopoxvirus infections, including mpox
Tecovirimat is available as an oral capsule (200 mg) and injection for intravenous (IV) administration.
Not currently registered in RSA, access through Section 21

- Treatment should be considered for use in people who have the following clinical manifestations:

Severe disease — a large number of lesions such that they are confluent; necrotic lesions; severe lymphadenopathy that can be necrotizing or obstructing (such as in airways); involvement of multiple organ systems and associated comorbidities (for example, pulmonary involvement with nodular lesions; sepsis; encephalitis; myocarditis; ocular or periorbital infections); or other conditions requiring hospitalization

Involvement of anatomic areas which might result in serious sequelae that include scarring or strictures — these include lesions directly involving the pharynx causing dysphagia, inability to control secretions, or need for parenteral feeding; penile foreskin, vulva, vagina, urethra, or anorectum with the potential for causing strictures or requiring catheterization; anorectal lesions interfering with bowel movements (for example, severe pain)

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5. Clinical management of mpox

- Treatment should also be considered for use in people who are at high risk for severe disease:

People currently experiencing **severe immunocompromise** due to conditions such as advanced or poorly controlled human immunodeficiency virus (HIV), leukemia, lymphoma, generalized malignancy, solid organ transplantation, therapy with alkylating agents, antimetabolites, radiation, tumor necrosis factor inhibitors, high-dose corticosteroids, being a recipient of a hematopoietic stem cell transplant <24 months post-transplant or ≥24 months but with graft-versus-host disease or disease relapse, or having autoimmune disease with immunodeficiency as a clinical component[1]

Pediatric populations, particularly patients younger than 1 year of age

Pregnant or breastfeeding people

People with a condition affecting skin integrity — conditions such as atopic dermatitis, eczema, burns, impetigo, varicella zoster virus infection, herpes simplex virus infection, severe acne, severe diaper dermatitis with extensive areas of denuded skin, psoriasis, or Darier disease (keratosis follicularis)
For patients at high risk for progression to severe disease, treatment should be administered early in the course of illness along with supportive care and pain control.

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6. Infection prevention and control

- Guidelines for self-isolation
- See national SOP (available NICD website):

Standard precautions with some additional measures
Hand hygiene
Isolation of patient
Personal protective equipment
Cleaning and disinfection
Safe handling of linen/laundry
Health care risk waste management
Management of potential exposures

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Resources

Access guidelines, SOPs and related documents from

https://www.nicd.ac.za/diseases-a-z-index/mpox-2/

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

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NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

Public health response to Mpox

Genevie Ntshoe
genevien@nicd.ac.za

1

Introduction

- Mpox is a Category 1 notifiable medical condition (NMC)
- All persons meeting the case definition should be notified by the most rapid means available, followed by written notification to the NMC surveillance system within 24 hours
  - Complete NMC form using the electronic or manual platform
  - Manual: submit form to focal person in the district/province and email to NMCSurveillanceReport@nicd.ac.za

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Suspected case

- Any person presenting with an unexplained acute rash, swollen lymph nodes or mucosal lesions **OR**
- A person who is a contact of a probable or confirmed mpox case in 21 days before signs or symptoms onset and presents with one or more of the following:
  - Headache
  - Acute onset of fever (>38.5° C)
  - Lymphadenopathy (swollen lymph nodes)
  - Myalgia (muscle pain/body aches)
  - Backache
  - Fatigue / profound weakness

AND

for which the following differential diagnoses are excluded: chickenpox, measles, bacterial skin infections, syphilis, molluscum contagiosum, allergic reactions and other locally relevant common cause of papular or vesicular rash

N.B. It is not necessary to obtain negative laboratory results for differential diagnoses listed above in order to classify a case as suspected

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Probable case

A person meeting the suspected case definition **AND** one or more of the following:

- An epidemiological link* to a probable or confirmed case of mpox in 21 days before symptom onset
- Reported travel history to mpox endemic country in 21 days before symptom onset
- Had multiple and/or casual sexual partners in 21 days before symptom onset
- A positive result of an orthopoxvirus serological assay, in the absence of smallpox vaccination or other known exposure to orthopoxviruses

** Prolonged face-to-face exposure without appropriate PPE; direct physical contact with skin or skin lesions including sexual contact; contact with contaminated materials e.g. clothing, bedding*

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Confirmed case

- A person with laboratory-confirmed monkeypox virus infection by detection of unique sequences of viral DNA either by real-time polymerase chain reaction (PCR) and/or sequencing

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Public health response

On notification of a case, response activities should be initiated immediately

- Case investigation
- Contact tracing
- Enhance surveillance

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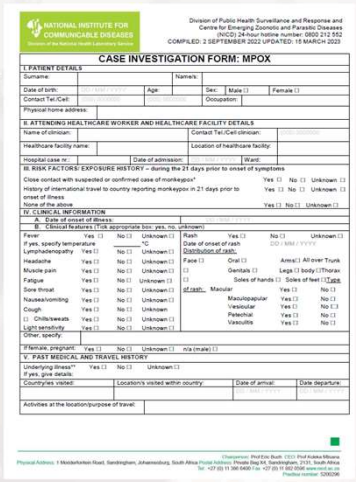
Case investigation

- Complete case investigation form (CIF)
  - Obtain demographic, clinical, exposure history/risk factor information/ travel history
  - Submit CIF to focal persons and relevant stakeholders
- Compile a case line list and apply case definitions



NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Division of Public Health Surveillance and Response and Centre for Emerging Zoonotic and Parasitic Diseases (NICD) 24-hour hotline number: 0800 212 552
COMPILED: 2 SEPTEMBER 2022| UPDATED: 15 MARCH 2023

CASE INVESTIGATION FORM: MPOX

I. PATIENT DETAILS

Surname: | Name/s:

Date of birth: DD / MM / YYYY | Age: | Sex: Male ☐ Female ☐

Contact Tel./Cell: | Occupation:

Physical home address:

II. ATTENDING HEALTHCARE WORKER AND HEALTHCARE FACILITY DETAILS

Name of clinician: | Contact Tel./Cell clinician:

Healthcare facility name: | Location of healthcare facility:

Hospital case nr.: | Date of admission: | Ward:

III. RISK FACTORS/ EXPOSURE HISTORY – during the 21 days prior to onset of symptoms

Close contact with suspected or confirmed case of monkeypox* Yes ☐ No ☐ Unknown ☐

History of international travel to country reporting monkeypox in 21 days prior to onset of illness Yes ☐ No ☐ Unknown ☐

None of the above Yes ☐ No ☐ Unknown ☐

IV. CLINICAL INFORMATION

A. Date of onset of illness: DD / MM / YYYY

B. Clinical features (Tick appropriate box: yes, no, unknown)

Fever	Yes ☐	No ☐	Unknown ☐	Rash	Yes ☐	No ☐	Unknown ☐
If yes, specify temperature	____ °C			Date of onset of rash	DD / MM / YYYY		
Lymphadenopathy	Yes ☐	No ☐	Unknown ☐	Distribution of rash:			
Headache	Yes ☐	No ☐	Unknown ☐	Face ☐	Oral ☐	Arms ☐	All over Trunk ☐
Muscle pain	Yes ☐	No ☐	Unknown ☐	☐	Genitals ☐	Legs ☐	body ☐ Thorax ☐
Fatigue	Yes ☐	No ☐	Unknown ☐	☐	Soles of hands ☐	Soles of feet ☐	Face
Sore throat	Yes ☐	No ☐	Unknown ☐	of rash:	Macular	Yes ☐	No ☐
Nausea/vomiting	Yes ☐	No ☐	Unknown ☐		Maculopapular	Yes ☐	No ☐
Cough	Yes ☐	No ☐	Unknown		Vesicular	Yes ☐	No ☐
☐ Chills/sweats	Yes ☐	No ☐	Unknown ☐		Petechial	Yes ☐	No ☐
Light sensitivity	Yes ☐	No ☐	Unknown ☐		Vesicullitis	Yes ☐	No ☐

Other, specify:

If female, pregnant: Yes ☐ No ☐ Unknown ☐ n/a (male) ☐

V. PAST MEDICAL AND TRAVEL HISTORY

Underlying illness** Yes ☐ No ☐ Unknown ☐

If yes, give details:

Country/ies visited:	Location/s visited within country:	Date of arrival: DD / MM / YYYY	Date departure: DD / MM / YYYY

Activities at the location/purpose of travel:

Chairperson: Prof Eric Buch CEO: Prof Koleka Mlisana
Physical Address: 1 Modderfontein Road, Sandringham, Johannesburg, South Africa Postal Address: Private Bag X4, Sandringham, 2131, South Africa
Tel: +27 (0) 11 386 6400 Fax +27 (0) 11 882 0566 www.nicd.ac.za
Practice number: 5260296

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Contact tracing

- Key component of public health response to infectious disease outbreaks
- Aim: To identify, list, and monitor contacts of cases to ensure that appropriate public health measures are instituted contain spread
- Three basic elements
  - Contact Identification
  - Contact Listing
  - Contact Monitoring

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Contact definition

A person who had come into contact with a suspected, probable or confirmed mpox case since onset of symptoms **AND** has had one or more of the following exposures

- Direct physical contact with skin/skin lesions
  - Touching, hugging, kissing, intimate oral or sexual contact
- Direct contact with contaminated materials
  - Clothing, bedding, including material dislodged from bedding or surfaces during handling of laundry / cleaning contaminated rooms
- Prolonged face-to-face exposure in close proximity without appropriate PPE
  - Persons living in the same household, working closely/in the same environment, healthcare workers/other persons providing direct care
- Respiratory or eye mucosal exposure to lesion material from an infected person

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Contact identification

- Identification of contacts should commence as soon as a suspected case is identified
- Contacts can be identified across a number of settings
  - Household, workplace
  - Sexual contacts
  - Healthcare/Laboratory
  - Houses of worship
  - Gatherings etc.
    - Attendance lists etc. can be further used to identify contacts

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Contact listing

- Identified contacts should be listed in contact listing form
- Contact listing form should be completed at time of sample collection and/or completion of CIF by person interviewing suspected case
  - Facility infection prevention and control (IPC) focal point
  - Attending clinician
- If contact listing form cannot be completed at this time
  - District communicable disease control coordinator (CDCC) or equivalent will be responsible for ensuring form is completed when notified of the suspected case

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Contact listing form

Case information

Name	Surname	Contact details	Address/Location	Sub-district	District	Province	Date of symptom onset (dd/mm/yyyy)

Contact information *For all information pertaining to location, please list information on where the contact will be residing for the monitoring period should need arise*

No	Name	Surname	Sex (M/F)	Age (yrs)	Relation to case	Date of last contact with case (dd/mm/yyyy)	Type of contact (1, 2, 3)*	Address/Location	City/Town	Sub-district	District	Province	Contact number	Occupation

***Types of contact:** 1 = Prolonged face-to-face exposure without wearing appropriate PPE; 2 = Direct physical contact; 3 = Contact with contaminated materials

Person completing form:
Name & Surname: _____Occupation: Contact number: _____Date: _____ Facility name: _____

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Monitoring of contacts

- Contacts should be monitored by any of the three options (self-monitoring, telephonic monitoring, face-to-face monitoring) using symptom monitoring tool
  - Options to use can be guided by availability of resources within districts/provinces
- Monitoring should be done daily for onset of signs/symptoms for a period of 21 days from last contact/exposure with a probable or confirmed case
- If signs and symptoms develops, contact should be isolated
- Assess as a suspected case as per guidelines/definitions
  - Establish that the patient meets the signs and symptoms for suspected mpox
  - Observe appropriate infection control procedures
  - Inform NICD Hotline (0800 212 552), notify focal persons in the local/district/province
  - Notify case through NMC surveillance system
  - Complete CIF
  - Submit samples to NICD for laboratory testing

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Monitoring options

Self-monitoring

- Contacts should be provided with necessary information
  - Signs and symptoms, transmission, permitted activities etc. what to do should symptoms develop
- If symptoms develop, contact should notify officer designated to monitor the contact or visit healthcare facility so necessary public health measures can be instituted

Telephonic monitoring

- Designated officer should contact person under observation at least once a day
- If signs/symptoms are reported, designated officer should follow necessary public health measures

Face-to-face monitoring

- Designated officer to physically visit person being monitored to examine for signs/symptoms of illness

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Daily symptom monitoring tool

- Mark **"Y"** if symptom present and **"N"** if not. If self-monitoring, the person under observation should notify the observation officer if symptoms develops

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Date(dd/mm)																					
Seen by* initial																					
Fever if Y, indicate temperature if measured in below																					
am temperature																					
pm temperature																					
Headache																					
Chills																					
Sore throat																					
Muscle aches																					
Fatigue																					
Rash																					
Lymphadenopathy																					
Other (specify)																					

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Other activities

- Activate outbreak response teams and establish contact tracing teams with clear roles and responsibilities
- Increase capacity of contact tracing teams,
  - Constitute a multidisciplinary team including surveillance officers, environmental health practitioners, community health workers, IPC, health promoters, community/school health nurses etc.

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Roles and responsibilities

- Each contact tracing team must have a focal person who shall liaise with district CDCC or equivalent and supervise team activities
  - Team activities to include the following:
    - Investigate suspected cases and rumours reported
    - Record details of all contacts identified on contact listing form
    - Monitor all contacts for onset of signs/symptoms as per monitoring tool
    - If contact develops signs and symptoms inform the district CDCC or equivalent so that necessary public health measures are instituted and relevant stakeholders are informed
    - Submit contact monitoring tools to district CDCC or equivalent for submission to provincial CDCC on a daily basis

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Roles and responsibilities

- Training of contact tracing teams on identification of contacts, completion of contact listing form, monitoring of contacts
- Assign a designated officer/s to ensure daily symptom monitoring is/are completed
- Data management of all line lists (collate, data cleaning etc.) within the district
- Submit district line lists to provincial CDCC/team on a daily basis
- Completion of contact demographic section on contact monitoring form to update contact line list

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Enhance surveillance

- Active case finding through contact tracing
- Targeted training of health care workers to enhance capacities to detect, test, treat
  - NMC platform
  - Other disease-specific surveillance platforms
    - HIV/STI, TB programmes
    - Dermatology clinics
    - Travel medicine
    - Port Health
- Strengthen cross-border (district/province) collaboration

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Risk communication and community engagement

- Health promotion/education
- Tailored messages to key populations, high-risk, vulnerable groups
- Disseminate through appropriate multimedia channels and events

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Summary

- Preparedness and response activities with clear roles and responsibilities
- Teaching and training of health care workers / public health officials
  - Case detection/identification, reporting/detailed investigation etc.

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THANK YOU

For more information visit the NICD website:
https://www.nicd.ac.za/diseases-a-z-index/mpox-2/

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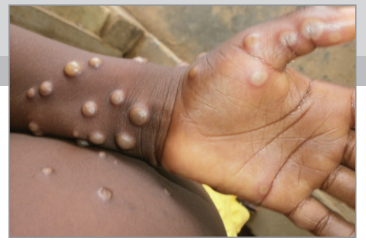
Mpox: diagnosis and management

Version 1_05 July 2024

- Suspect mpox in the client with a new unexplained rash or lesion/s of the skin (especially face, palms of hands or soles of feet), genitals, anus, rectum, mouth or eyes ***and*** ≥ 1 of:
  - Headache
  - Swollen lymph nodes
  - Backache
  - Temperature > 38.5°C in the last 2 days
  - Body pain
  - Severe weakness or tiredness
- If mpox suspected and while looking for other cause of rash, lesions and symptoms: wear N95/FFP2 mask, gloves, gown and eye protection. If possible, isolate client and provide surgical mask.



Source: Mayoclinic and WHO

Risk factors for severe mpox:
- **Severe immune-compromised, like HIV WHO stage 3 or 4 disease, CD4 < 350, VL > 50 or diabetes with HbA_{1C} > 8%**

Give urgent attention to the client with suspected mpox and any of:

- BP ≤ 90/60
- Respiratory rate ≥ 30, difficulty breathing at rest/while talking or oxygen saturation < 90%
- Unable to swallow
- Thirst, dry mouth, poor skin turgor, sunken eyes, pulse ≥ 100, dehydration likely
- Decreased consciousness or confusion
- Severe pain
- Foreskin retracted over glans and unable to reduce to normal position with swollen, painful glans, **paraphimosis** likely
- Eye lesion/s and vision changes, **corneal infection** likely
- Unable to pass urine or stools
- Severe bleeding, pain, or discharge from the anus, **proctitis** likely
- Chest pain, irregular pulse, swollen legs, **myocarditis** likely

Manage and refer urgently:
- If oxygen saturation < 90%, give oxygen 1-4L/min via nasal prongs or 6-10L/min via facemask.
- If dehydration likely, give oral rehydration solution (ORS) and observe. Encourage small frequent sips. Aim for at least 1-2L in 2 hours. If unable to drink or BP < 90/60, give sodium chloride 0.9% 500mL IV over 30 minutes, repeat until systolic BP > 90. Continue 1L 6 hourly. Stop if breathing worsens.
- If severe pain, give morphine 10mg IM or diluted morphine 3-10mg slow IV[1]. Stop if BP drops < 90/60.
- If **paraphimosis** likely: if glans blue/black: refer urgently. If not, attempt manual reduction: wrap glans in gauze and apply increasing pressure for 10-15 minutes until foreskin can be replaced over glans. If unsuccessful, refer urgently.
- If unable to pass urine, insert urinary catheter.

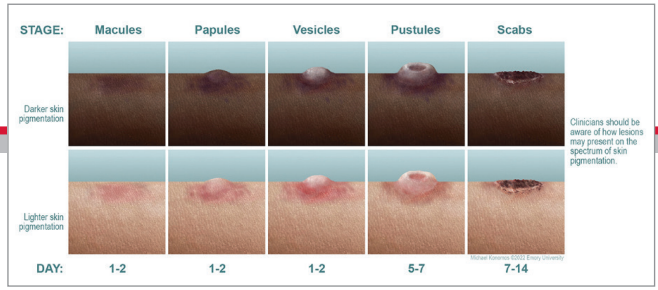


Figure 1 ©2022 Emory University, used with permission.

Approach to the client with suspected mpox not needing urgent attention

- If status unknown, offer HIV test ⮌ PACK Adult. Also send blood for syphilis serology and review result within 7 days.
- Ask about anal and genital symptoms ⮌ PACK Adult. If client has anal sex and mild anal bleeding, pain or discharge, **proctitis** likely.
- If rash or lesions all look similar and change or progress at a similar pace (figure 1), mpox is more likely.
- Look for other cause of rash or lesions according to the distribution of rash or lesions and presence or absence of itchiness (also see ⮌ PACK Adult skin symptoms pages):

Generalised rash or lesion/s

Itchy

- If crops of vesicles at different stages of healing and no swollen lymph nodes, **chickenpox** likely.
- If advanced HIV disease and hyperpigmented papules, **papular pruritic eruption** likely.
- If burrows in web spaces or skin folds and itch worse at night, **scabies** likely.
- If new medication in the past 3 months, **drug-induced rash** likely.

Non-itchy

- If conjunctivitis, cough and runny nose and flat red rash spreading from face to body, **measles** likely.
- If tick bite or eschar (small dark scab) and rash spreading from extremities to body, **tick bite fever** likely.

Localised rash or lesion/s

Non-itchy

- If firm, dome-shaped papules with central dimple, **molluscum contagiosum** likely.
- If painful, grouped vesicles on red base especially around mouth or genitals, **herpes simplex** likely.
- If painful vesicles around mouth and on palms and soles, **hand-foot and mouth disease** likely.
- If painful blisters in a band on one side of body, **shingles** likely.

Itchy

If honey-coloured crusts especially around mouth and nose, **impetigo** likely.

If unsure, discuss with infectious disease specialist on the Vula app. If after working hours or client needs urgent attention, phone contact number provided on Vula app.

[1]Dilute 10mg morphine with 9mL of sodium chloride 0.9%. Start with 3mL IV over 3 minutes. If needed, give another 1mL/minute until pain improved, up to 10mL.

- Discuss every client with suspected mpox with the National Institute for Communicable Diseases (NICD) hotline on 0800 212 552 to decide if further management needed.
- If further management needed, the Department of Health and Wellness will initiate case finding and contact tracing. Then follow steps 1-5 to manage client further:

MPox case investigation form

STEP 1. Complete the mpox case investigation form:

- If hard copy unavailable, access electronically at https://www.nicd.ac.za/wp-content/uploads/2023/03/mpox-CIF_version_08092022_update115032023.pdf or scan QR code.
- Email the completed form to: provincialcdc@westerncape.gov.za, Charlene.Lawrence@westerncape.gov.za, jacquelinew@nicd.ac.za, naazneenm@nicd.ac.za and outbreak@nicd.ac.za.
- Submit completed form with sample/s (see below) to the NICD:

STEP 2. Collect and prepare sample/s for mpox testing while wearing N95 mask, gloves, gown and eye protection:

Identify the most appropriate body area to collect sample from:
- Aim to collect samples from wet, red or crusted areas from skin, mouth genitals or anus. If no visible lesions or rash, collect throat swab.

Choose any of the following to collect sample/s:
- Dacron swab with viral transport media (VTM), polyester flocked swab with VTM or dry swab.

Collect sample/s:
- Apply firm pressure to area with the tip of the swab while turning the swab at least 10 times. Then place swab in container.
- If taking > 1 sample, repeat process above using a different swab at a different site.

Label and store sample/s until transport:
- Ensure NHLS lab request form is completed in full. Write "Mpox PCR" in "OTHER TESTS" box.
- Place swab/s in fridge or ice box until transport.

STEP 3. Advise the client with suspected mpox:

- Explain that the virus can spread to close contacts until all lesions healed completely; when scabs fall off and a healthy layer of skin is visible where the scabs used to be.
- Advise that the rash or lesions usually heal within 2-4 weeks.
- If breastfeeding, avoid breastfeeding until all lesions healed completely. Advise to discard expressed breastmilk.
- Avoid physical and sexual contact until all lesions healed; wearing condoms does not protect against infection.
- Advise that staying in a separate bedroom and using a separate bathroom limits the spread of infection and to wear a surgical mask if they are in a shared space.
- Avoid sharing personal items, including cups, eating utensils, clothes, linen and towels. Advise to wash these items separately from other people's items.
- Encourage adequate oral fluid and nutritious food intake and rest.
- Advise to keep lesions dry and uncovered unless in shared space and not to break blisters or scratch lesions; allow these to heal by itself to prevent spread.
- Advise regular hand washing with soap and water, especially before and after touching lesions and to wash frequently touched surfaces with soap and water.
- If available, advise to disinfect frequently touched surfaces with 70% alcohol or chlorine-based disinfectant.
- Advise to return if no improvement or symptoms worsen.

STEP 4. Treat the client with suspected mpox:

- Give paracetamol 1g 6 hourly orally as needed for pain and fever. If no better, give ibuprofen[1] 400mg 8 hourly orally as needed with food for up to 5 days.
- Manage other symptoms as on symptoms pages ⮌ PACK Adult.
- If long-term health condition, especially HIV, diabetes, eczema or psoriasis, ensure these are well-controlled ⮌ PACK Adult.
- Advise to cover lesions with dry dressing if in shared space and to keep skin dry and uncovered if alone.
- If lesions in mouth, advise to gargle with salt water. If lesions on lower body (including anus), advise sitz or warm baths with baking soda or Epsom salts until lesions healed.
- If red, warm, swollen, painful skin around lesions, **secondary infection** likely:
  - Give flucloxacillin 500mg 6 hourly for 5 days. If severe penicillin allergy (previous angioedema, anaphylaxis, urticaria) give instead azithromycin 500mg daily for 3 days.
- If any of: unable to isolate, pregnant, breastfeeding, shares space with children or immune-compromised persons, discuss need for admission with referral centre.

STEP 5. Notify suspected mpox within 24 hours telephonically (021-830-3727 or 072-356-5146 or 064-742-4005) and:

- Complete a hard copy of the notifiable medical conditions (NMC) case notification form and email to NMCsurveillanceReport@nicd.ac.za
- Send a copy to the NMC sub-district/district representative; check details on cover of NMC booklet.

OR

Notify electronically via the web portal or app: access https://www.nicd.ac.za/nmc-overview/notification-process or scan QR code.

NMC notification process

[1]Avoid if peptic ulcer, asthma, hypertension, heart failure or kidney disease.

SEXUALLY TRANSMITTED INFECTIONS (STIs)/M-POX/HIV SCREENING TOOL

Clinic Name: _____

Patient Name: _____ **Patient File Number:** _____

Age: _____ **Sex:** _____

SUSPECTED CASE DEFINITION

- **This form must be used for screening in key population clinics AND/OR individuals that meet the suspected case definition for Mpox.**
- **Start with Section 1.**

1. **Section 1: Contact Screening:**

Contact	Present (Yes/No)	If yes, date of contact
Has the patient had contact with a probable or confirmed Mpox case in the past 21 days?		

Complete Sections 2.1 and 2.2.

2. **Section 2.1: Symptom screening:**

Symptoms	Present (Yes/ No)	If yes, date of onset
Unexplained acute rash within the past 7 days and any one of the following	**Yes** ☐ **No** ☐	
Fever >38.5C* in the past 7 days	**Yes** ☐ **No** ☐	
Headache*	**Yes** ☐ **No** ☐	
Asthenia (profound weakness) *	**Yes** ☐ **No** ☐	
Muscle pain (myalgia)*	**Yes** ☐ **No** ☐	
Fatigue*	**Yes** ☐ **No** ☐	
Sore Throat*	**Yes** ☐ **No** ☐	
Generalized lymphadenopathy*	**Yes** ☐ **No** ☐	
Chills or sweats*	**Yes** ☐ **No** ☐	
Conjunctivitis*	**Yes** ☐ **No** ☐	
Back pain*	**Yes** ☐ **No** ☐	
2. Other STI and Mpox symptoms		
Genital discharge†*	**Yes** ☐ **No** ☐	
Skin rash/blisters/ulcers (face, chest, back, hands feet) ‡*	**Yes** ☐ **No** ☐	
Genital ulcers, blisters †*	**Yes** ☐ **No** ☐	
Anogenital pain and/or bleeding*	**Yes** ☐ **No** ☐	
Oral skin/mucosal lesions‡*	**Yes** ☐ **No** ☐	
NOTES:		

*** If yes a rash and these symptoms test for Mpox – Proceed to Section 3.**
† if yes to these then treat according to STI syndromic management guidelines and offer HIV counseling and testing.
‡ if rash/ ulcers/ blisters are painless consider syphilis and also draw blood for syphilis testing.
NB: It is common to have co-infections. All patients with suspected Mpox should also be tested for syphillis

Section 2.2: Comorbid conditions for those without case contact:

Does client know their HIV status	**Yes** ☐		**HIV positive** ☐ **HIV negative** ☐
	No ☐		**If "No", Offer HCT**
If HIV positive; on ART	**Yes** ☐	**No** ☐	
If on ART; virally suppressed	**Yes** ☐	**No** ☐	**Most recent viral load**
Does clients have other co-morbid conditions	**Yes** ☐	**No** ☐	
If Yes, list all medications			

Section 3: Mpox Testing

- **Sample collection for Mpox:** The recommended specimen type for laboratory confirmation of mpox is skin lesion material, including swabs of lesion surface and/or exudate, or lesion crusts. Blood specimens are not useful for diagnosis of mpox.
- **How to collect the specimens:**
    - Use appropriate PPE as per IPC protocol for Mpox.
    - Use a dacron or polyester flocked swab (not a cotton-wool swab).
    - Swab the lesion vigorously (but without causing injury) to ensure adequate transfer of material to the swab.
    - Swabs can be transported dry in capped tubes or placed in viral transport media (VTM).
    - Mpox is diagnosed by polymerase chain reaction (PCR) test for the MPXV on a swab taken from one or more vesicles or skin lesions
    - **Notify case on the NMC App**
    - **If there is a severe case, discuss the patient with NICD clinician or Provincial specialist team**

Sample of lesion collected: Yes ☐ **No** ☐

For further details on specimen collection, See the NICD website for guidance on Mpox.

Laboratory contact details:
Dr Jacqueline Weyer: jacquelinew@nicd.ac.za / 011 386 6376 / 082 903 9131
Dr Naazneen Moolla: naazneenm@nicd.ac.za

Clinician: _____ **Date:** _____

NATIONAL HEALTH LABORATORY SERVICE

Office of the Area Manager:
Western & Northern Cape
Old City Hospital, Green Point Complex
8005
Telephone no.: 021 417 9376 / 7

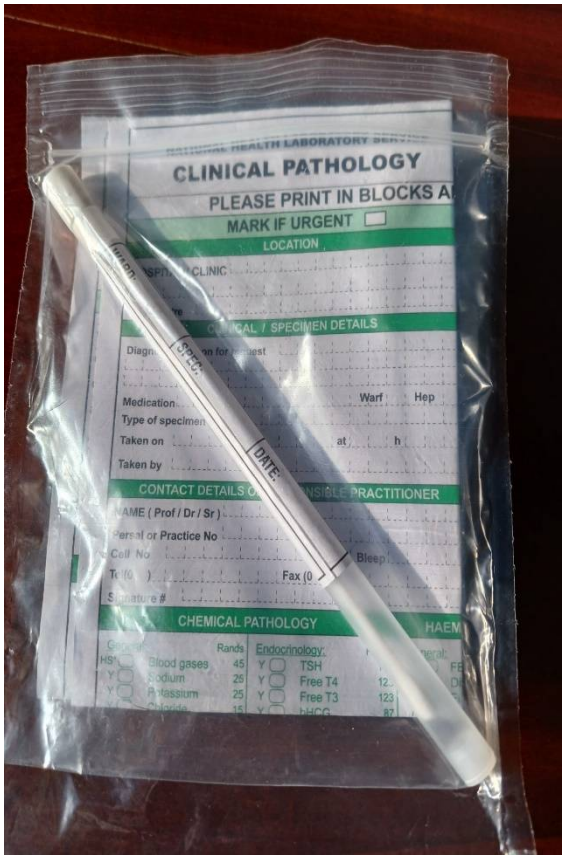
05 August 2024

Packaging of MPOX Samples by Facilities for NICD – to be Transported by NHLS:

STEP: 1 Health Care Worker (HCW) Suspects MPX in Clinic/Ward:

1. Consults NICD hotline and or the local NHLS Lab Pathologist / Registrar to allow risk assessment to be carried out and guide laboratory testing.
2. Case investigation form to be completed (available on NICD website) / Report on NMC (Notifiable Medical Conditions) electronic application.
3. HCW to inform their NHLS laboratory to expect the sample.
4. Health Care Worker must wear appropriate PPE and collects the specimen from the patient. The sample collected in Dacron or polyester flocked swabs with VTM or dry swab.
5. The sample collection vessel is labelled with patient's details and all relevant information is completed on the case investigation form and the requisition form.
6. The swab is placed into the zip lock specimen bag and zip locked.
7. The requisition form must be folded in such a manner that the patient's details are visible, which will prevent the requisition form from being removed from the plastic specimen bag.

FRONT VIEW:



REAR VIEW:

8. The zip lock packet with the sample, case investigation form and the request form must be placed into a cooler box.
9. The cooler box needs to be sealed and labelled as follows:

(Template of labels attached on page 3)

EXAMPLE:

<u>Category A – Sample for NICD</u>

Name of Clinic / Hospital: Green Point Complex

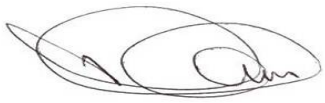
Date: 01/08/2024

Number of Samples: 6

Number of Patients: 2

STEP: 2 Specimen is delivered to the NHLS laboratory through routine procedure

Thank you.



_____

Nasima Mohamed
Area Manager
NHLS
Western & Northern Cape

NATIONAL HEALTH LABORATORY SERVICE

Category A – Sample for NICD

Name of Clinic / Hospital: _____

Date: _____

Number of Samples: _____

Number of Patients: _____

Category A – Sample for NICD

Name of Clinic / Hospital: _____

Date: _____

Number of Samples: _____

Number of Patients: _____

Category A – Sample for NICD

Name of Clinic / Hospital: _____

Date: _____

Number of Samples: _____

Number of Patients: _____